

OECD Workshop

The Role of Government in Fostering the Development of Broadband Access in Rural and Remote Areas

Porto, Portugal

25-26 October 2004

Charles Glass

United States

National Telecommunications

And Information Administration

ph: +1.202.482.1896

fax: +1.202.501.8189

E-mail: cglass@ntia.doc.gov

Introduction

- Fostering An Environment Conducive to Broadband Development And Deployment
 - Need For Technology Neutral Approach
 - Wireless Vs. Wireline
 - Role Of License-exempt Operations
 - Role Of Other Policy Approaches
 - Role Of Licensed Operations
 - Removing Regulatory “Underbrush”

Rural and Remote Broadband Access

- Complex Problem
 - Terrain
 - Power
 - Site Accessibility
 - Maintenance
- Requires Innovative Solutions
 - Solutions Differ For Rural And Remote Areas
 - Manufacturers And Service Providers Must Develop Answer
 - Solutions Must Be Affordable To Lowest Income Segments Of Society
- Support For Rural And Remote Areas Often Require Multiple “Stages”
 - Wireless Solutions Are Easiest To Implement At Start
 - Wired Solutions Develop As Market Is Proven

What is the Rural Market?

ITU Estimates 4 Billion people have never made a phone call

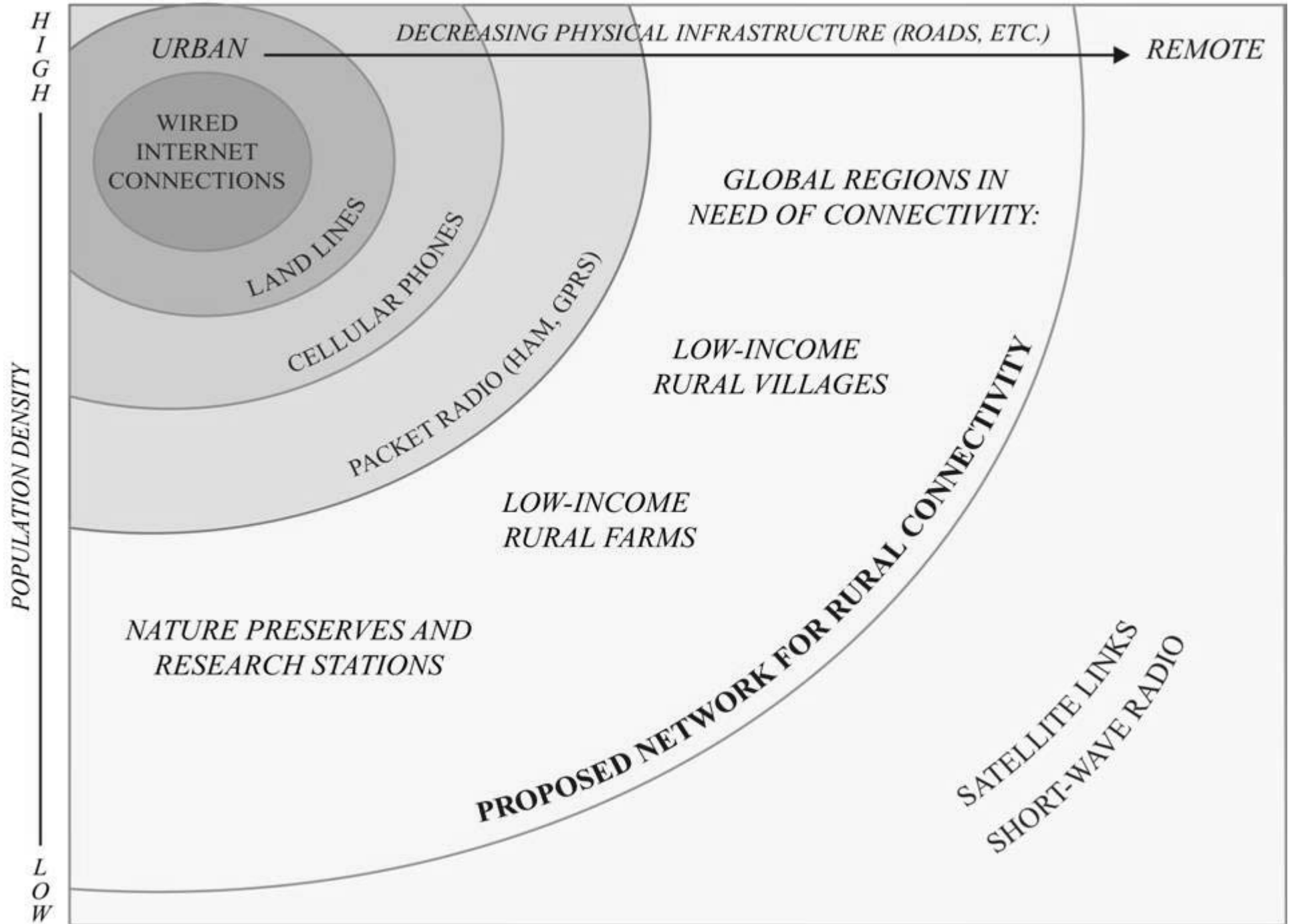
90 % of people born in the next 10 years will be born into developing countries

World Rural Population is 4 Billion or 65 % of the Total Population

World Pop grows by average of 80 million/year

Current world roll-out rate is approximately 60 million new main and mobile lines/year or 1% of total population





Technology Neutral Approach

- Adopting A **Technology Neutral** Policy Approach Has Many Benefits In Fostering Development And Deployment Of Technologies.
 - Long Term Approach That Ensures The “Best” Solution Is Provided
 - Reduces Consumer Cost Through Competition
 - Maximizes Innovative Solutions To Complex Problems Posed By Serving Rural And Remote Areas
 - Ensures That The Maximum Number Of Manufacturers And Service Providers Can Be Involved
 - Ensures That The Needs Of The Local Users Can Be Met As They Change And Evolve.

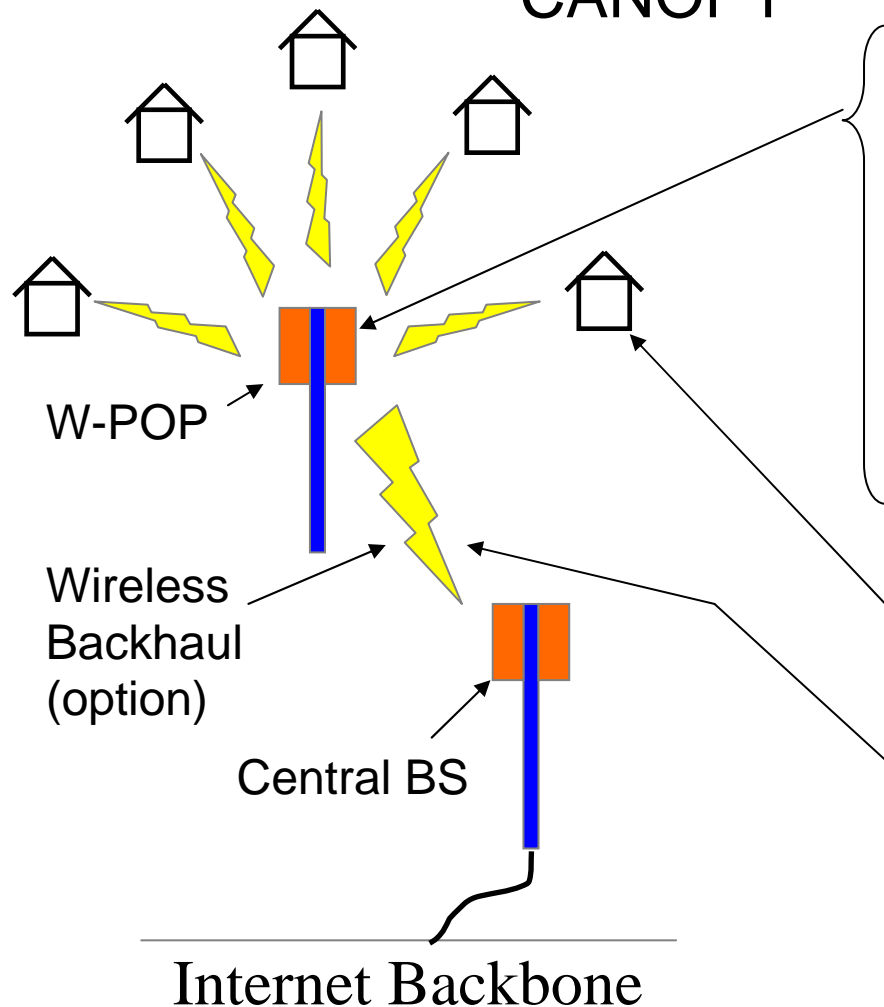
Wireless Solutions

- Wireless Technologies Provide “Early In” Approach.
 - Low Cost Of Implementation By Service Providers
 - Wide Variety Of Solutions Available To Foster Competition
 - Satellite
 - Point-to-multipoint
 - Hybrid Satellite Point Of Presence
 - Hybrid Terrestrial Point Of Presence
 - Provides Easy Solutions To Many Of The Hurdles Faced In Providing Service In Rural And Remote Areas
 - Can Provide Flexible Service Area Solutions To Meet Needs Of Local Communities
 - Provides Proof Of Market For Wireline Providers

Network Extension

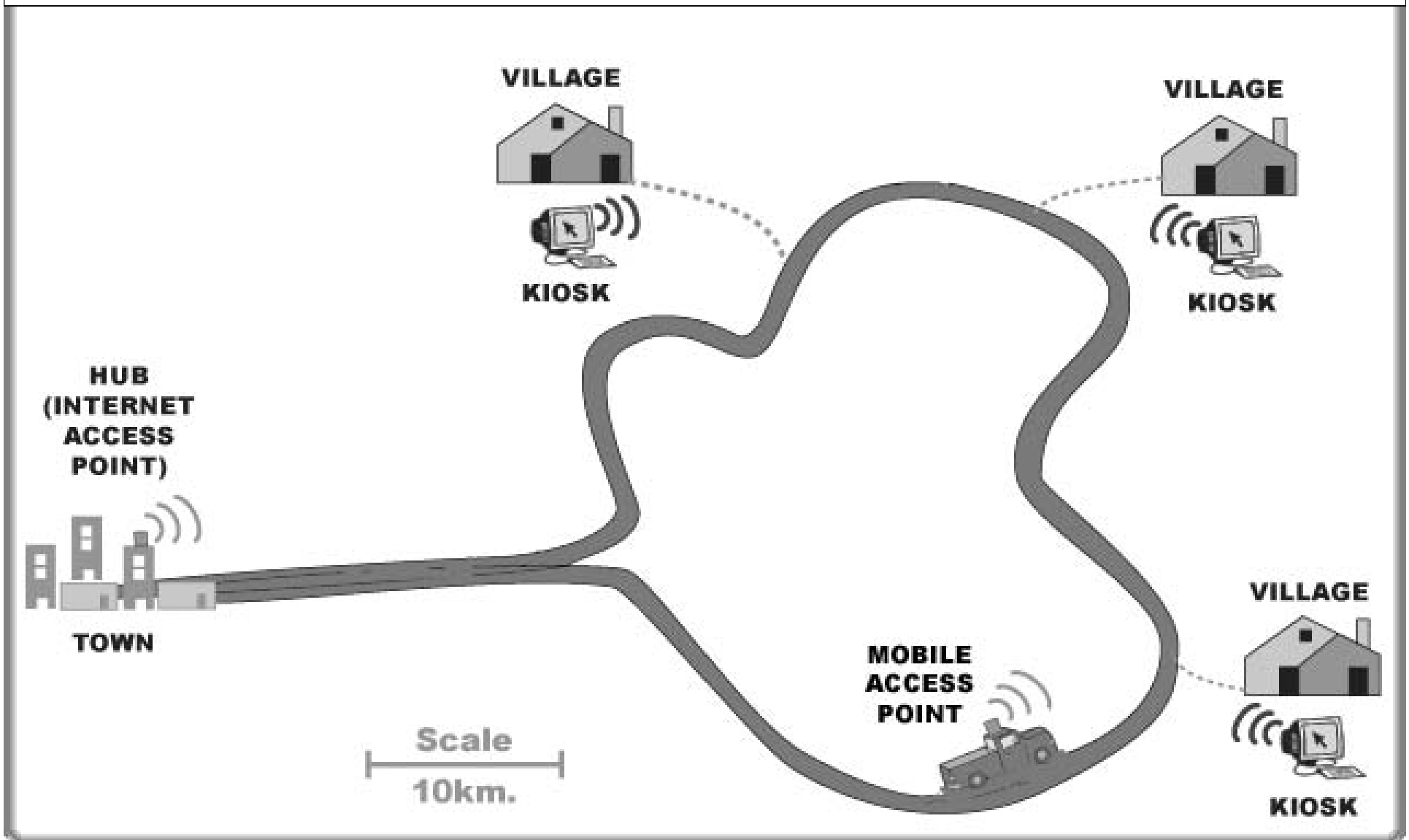
DANDIN GROUP - Innovative Wireless Deployments

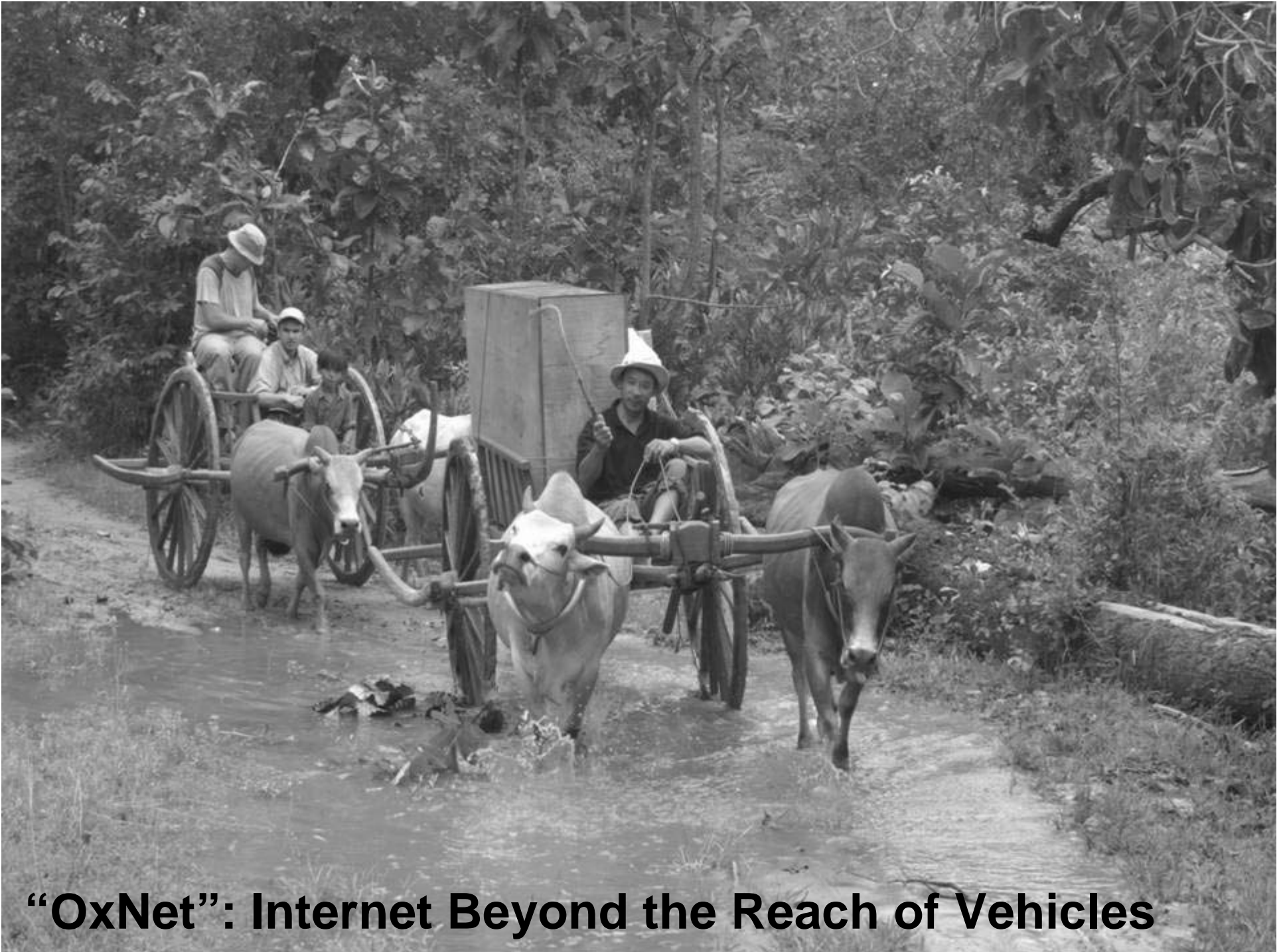
CANOPY™ System Concept



- Wireless Connectivity to the Internet via Wireless Point of Presence (W-POP)
- 6-12 10 Mbps Radios per W-POP each serving up to 200 Subscribers
- Nominal 2 Mile W-POP Radius
- Data Transfer Rates: Up to 3 Mbps seen by individual users
- Wireless Backhaul at 20 Mbps

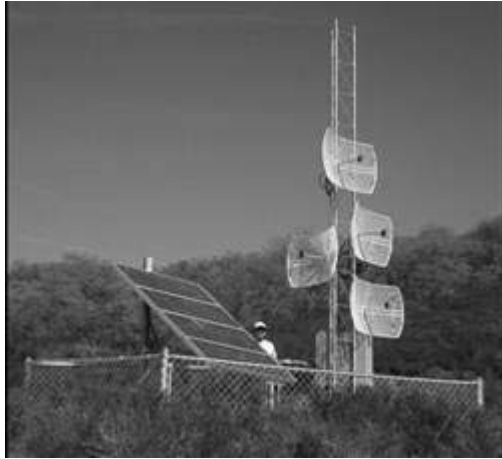
Digital Village Center





“OxNet”: Internet Beyond the Reach of Vehicles

Power Sources and Network Access Points



- Renewable Energy (Solar, Wind, Etc.) Sources



- Access Points Used As Community Centers

License-Exempt Environment

- Reducing or Eliminating Spectrum Licensing Fees Provides Incentive To Manufacturers And Service Providers.
 - Can Be Employed In Internationally Recognized Bands As Appropriate
 - Increases Economies Of Scale, Further Reducing Cost To Deploy
 - License-exempt Services = Fast, Widespread Acceptance.
 - Reduced Implementation Cost = Reduced Consumer Cost
 - Improves Spectrum Efficiency Through Spectrum Sharing

Other Policy Approaches

- Other Policy Approaches Can Also Be Employed.
 - Area Licensing
 - Permits An Operator To Employ Equipment Within A Specifically Defined Geographic Area Without The Need To License All Terminals
 - Manufacturer/Operator Licensing
 - Allows A Specific Type Of Equipment To Operate Within A Government
- These Approaches Can Also Foster Development And Deployment Of Broadband In Rural And Remote Areas through reduced implementation cost.

Licensing

- Spectrum Licensing Provides Certainty To Manufacturers And Providers.
 - Quality Of Service Guarantee
 - Manufacturers Can Develop Operator Specific Solutions
 - Business Model Improved
 - Operation Defined By Spectrum, Not Technical Parameters
 - Amount Of Spectrum Determines What Can Be Done

Summary

- Providing The Proper Policy Environment Can Foster the Development And Deployment Of Rural And Remote Broadband Services.
- Technology Neutral Incentives Foster Competition in the Deployment And Development To Rural And Remote Areas.
- With the Appropriate Licensing Environment, Wireless Manufacturers Can Provide Equipment Suited To Meet The Needs Of The Rural And Remote Environment
- Competition Reduces The Cost To The Consumer