International Telecommunication Union

Universal Service/Access: Best Practices From Country Experiences

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Definitions

Universal Service: policies focused on providing individual household connections to public telecommunication network.

Universal Access: policies focused on ensuring that all people have reasonable means to access a publicly available telephone in their community (but not necessarily in their home) through shared use of lines or terminals including public payphones, community telecentres, teleboutiques or community Internet access centres

Universality: term used by some to refer to both universal service and universal access

Goals Concern Two Aspects: The type of access
The type of services

Universal Service Goals

- Availability
- Affordability
- Accessibility

Initially Implemented By Placing Obligations on Monopoly Operator

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Achieving Universal Access Through Monopoly Operators

- Very few countries have achieved universal service/access goals solely through monopoly operators
- For this reason, most countries have embarked on sector reform

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Principle Objectives of Universality Policies

- Allow full participation in the Information Society
- Promote economic development
- Encourage equal access by all segments of the population
- Promote national political, economic and cultural cohesion
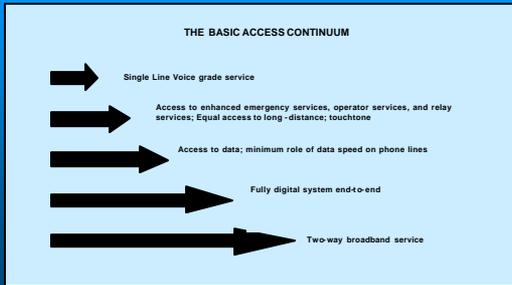- End differences in access between rural and urban areas

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What are Mongolia's Universal Access Objectives?

- Is there a universal service/access policy?
- If not, what objectives would you identify to be included?
- Why does Mongolia want to improve access to its citizens?
- What kinds of services are important? Voice? Internet? Broadband?

The Basic Access Continuum, From Voice to Broadband

THE BASIC ACCESS CONTINUUM

➡ Single Line Voice grade service

➡ Access to enhanced emergency services, operator services, and relay services; Equal access to long - distance; touchtone

➡ Access to data; minimum role of data speed on phone lines

➡ Fully digital system end-to-end

➡ Two-way broadband service

Universal Service/Access as an Obligation

- License conditions
- Cross subsidies
- Interconnection levies and access deficit charges
- Universal Access Funds

Universal Access as an Opportunity

- Can regulatory conditions be provided to transform universal service obligations into market opportunities?
- Could CRC use sector reform to achieve universal access?

Sector Reform Is Working As a Tool for Universal Access

- Mobile is the prime example!
- More mobile than fixed line subscribers in Mongolia, as in many other countries
- Prepaid makes it affordable
- Public access, through mobile payphone, re-sale and entrepreneurs is making mobile even more effective
- SMS even cheaper than voice and is a limited email substitute

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Mobile Payphones

- Provided by Individual Entrepreneurs in India, Uganda, Nepal, Cambodia and Nigeria
- Mandated in Mobile Licenses in South Africa
- Chosen by some operators as least cost solution in Chile
- As a business managing a network of small entrepreneurs in Uganda and Bangladesh
- Informal operations, such as "Umbrella People"

Can everyone afford a call?

The informal mobile payphone experiences indicate that almost everyone can afford to make a call at least some time if the service is marketed properly

Filling the Market Access Gap Before the True Access Gap

o **Market Access Gap**--the difference between what markets are actually achieving under current conditions, and what they could achieve if regulatory barriers were removed and regulation was used to provide incentives. This gap can be bridged through more private provision of service facilitated by effective competition and by market-oriented policies and regulations that create a level playing field for new entrants.

o **True Access Gap**—the people, communities and areas that cannot be reached by the market without intervention by government/regulator.

Pushing Sector Reform Further to Achieve Universal Access

o If mobile has been so successful, couldn't the experience be expanded to other services?

o What regulatory conditions are needed?

Need for a basket of regulatory approaches

o Open other market segments to competition: data, ISP, VoIP

o Authorize resale of other services

o Foster asymmetric interconnection rates to enable rural operators to be financially viable

o Keep license and other regulatory fees low

Can You Identify Any Market Efficiency Gaps In Mongolia?

o Are there any regulatory barriers to entry that could be removed to encourage commercial responses?

o What are CRC's policies on resale?

o Interconnection?

o End user tariffs?

o License fees?

Use of Universal Access Funds to Address True Access Gap

o Basic principles of funds

o Who contributes?

o How much?

o Which revenue?

o Who manages fund?

o How to identify projects to be funded?

First Step in creating a Fund— Enabling Legislation or policy

• Define principles of the right to communications access

• Define objectives and obligations for national telecommunications development

• Mandate establishment of Universal Service/Development Fund

• Define responsibilities for implementing and administering the Fund

Enabling Laws and Policies continued

- Emphasize market-oriented, non-discriminatory principles
- Establish enforcement and dispute resolution powers

Sources of Contributions to the Fund

- Equitable contribution by all market participants
- Fixed percentage of designated revenues
- Key questions:
  - Who should contribute?
  - What revenues should be covered?
  - Should anyone receive special treatment?

Management and Administration of Fund

- Under control of independent telecommunications regulatory authority
- Management autonomy
- Independent budget, separate accounting

Procedures for Funding Allocations

- Develop an Operating Plan identifying intended projects and targets for an identified period (1-2 years)
- Projects to be identified through needs assessment identifying locations, populations, socio-economic activities with the greatest needs
- Review procedure

Funding Only for Basic or Also For Advanced ICTs?

- Limit funding to basic communications-- public payphones--because these projects will leverage financing for other services, including advanced
- Citizens need access to ICTs NOW. At least some financing should be provided for Internet access through telecentres

Minimizing Fund Expenditures: The minimum subsidy auction

- Project identification
- Maximum Subsidy determination
- Mechanics
- Project Guarantees
- Impact of Consumer and Interconnection tariffs on financial self sustainability

Universal Access Funds in Mongolia

- Will Mongolian Funds be used only for rural access? Or also for urban?
- Is the focus on basic or advanced services?
- Are projects to receive one-time jump start financing?
- Are projects expected to become financially self-sustainable?

Promoting Public Access— Through Funds or Sector Reform

- Universal Service Funds Can be Used for Payphone Deployment of Telecentres
- Telecentres can Provide "Basic" Services or offer Tele-Learning/Health and other Community Services
- Telecentres Need A Viable Business Plan
- Community involvement is key
- Local content is key
- Using existing public facilities like schools or health clinics
- Gender awareness, for training, location, hours

Wi-Fi For Development

We need to think of ways to bring wireless fidelity (Wi-Fi) applications to the developing world, so as to make use of unlicensed radio spectrum to deliver cheap and fast Internet access.

UN Secretary General Kofi Annan

Technical Standards for WLANs and WMANs

- IEEE 802.11b, the first "Wi-Fi," operating in 2.4 GHz band
- IEEE 802.11a, operating in 5 GHz band
- European HiperLan
- North American Home RF
- IEEE 802.16, creating Wireless Metropolitan Area Networks

Wi-Fi Requires Internet Backhaul

- ADSL
- T1
- Cable Modem
- VSAT

Wi-Fi Growth Predictions

- 1 million hotspots in Asia
- 800,000 hotspots in Europe
- 530,000 hotspots in the US
- 5.4 billion Wi-Fi revenue for Europe and US next year
- Wi-Fi for video streaming
- Wi-Fi in most consumer electronic devises

How Will the Wi-Fi Market Develop?

- Frogs and Lilypads?
  Or . . .
- Development by traditional ICT Players?

Wi-Fi is Cheaper, An Order Of Magnitude Cheaper

- Voice And Broadband Networks can be deployed for 100s of kilometers for under $50,000
- Costs per subscriber at $300
- Compare to fiber and copper with cost per subscriber at $1,000

Not Just WLANS, Think Village Area Networks, VANS!

- Provide mobile and fixed ICT services to an entire rural community
- Based on Wi-Fi
- VANS enhance economic development of rural communities
- VANS raise living, medical and educational standard

Bohechio, Dominican Republic VAN Established March 2001

- Village is 200 km from capital city
- Population 7000
- Wi-Fi network covers 1 square km
- Three days to install
- Cost = < 20,000 and prices for equipment have fallen since 2001!

Multi-purpose community telecentre in shipping container, Dominican Republic

Bhutan Customer antennas

Bhutan
Customer premise equipment

Wi-Fi, A Revolution for Rural Access?

- o New technologies re-writing the equations of self-sustainability
- o Wi-Fi and other wireless access technologies are viable on only a few dollars a day
- o Require low regulatory barriers to entry, liberal VoIP and fair interconnection policies.

International Telecommunication Union

THANK YOU FOR YOUR ATTENTION

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