Diálogo Regional sobre
Sociedad de la Información

Access and Affordability

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Objectives

In this class we will learn about:

- Universal Service
- The veil of ignorance
- Justification of the implementation of universal service fund
- Elements to consider for a universal service program
- New Technologies and Universal Service/Access

The Veil of Ignorance

We put ourselves hypothetically in a situation where we don't know:

- Our place in society
- Our class position
- Our social status
- Our fortune
- Our natural abilities
- Our intelligence
- Our strengths

Some questions

Do you think that it is the obligation of the government to make sure that the population has access at affordable prices to an information infrastructure?

How do we do it?

What is Universal Service?

Universal Service: it focuses on promoting and maintaining universal availability of connections by individual households.

- In developed nations this definition has been expanded to include Internet access to public schools, libraries and rural health care facilities for telecom services and is being expanded to include broadband

What is Universal Access?

Universal Access: A situation in where every person has a reasonable means of access to a publicly available phone.

- This is generally the way less developed nations define universal service given the lower income and general poor infrastructure that these nations experience

Funding Universal Service Objectives

- Cross subsidies: or within service provided by incumbent operators
- Market reforms: based on simply privatization and competition
- Mandatory service obligations: imposed by license conditions or other regulatory measures
- Universal Service Funds: independently administered funds that collect revenues from various sources and provide targeted subsidies

Agenda

- Definition
- Reasons for Universal Service Programs
- Basic questions to consider for Universal Service Programs
  1. Scope
  2. Segments of the population
  3. Entities
  4. Technologies
  5. Resources
  6. Mechanisms
- Case studies

Why?

- A relatively developed business sector needs advanced telecommunications to reassert itself in the national and world economy and society as a whole can access abundant information on a wide variety of issue

- There is a dual causality: economic development leads to greater connectivity but also greater connectivity leads to greater development

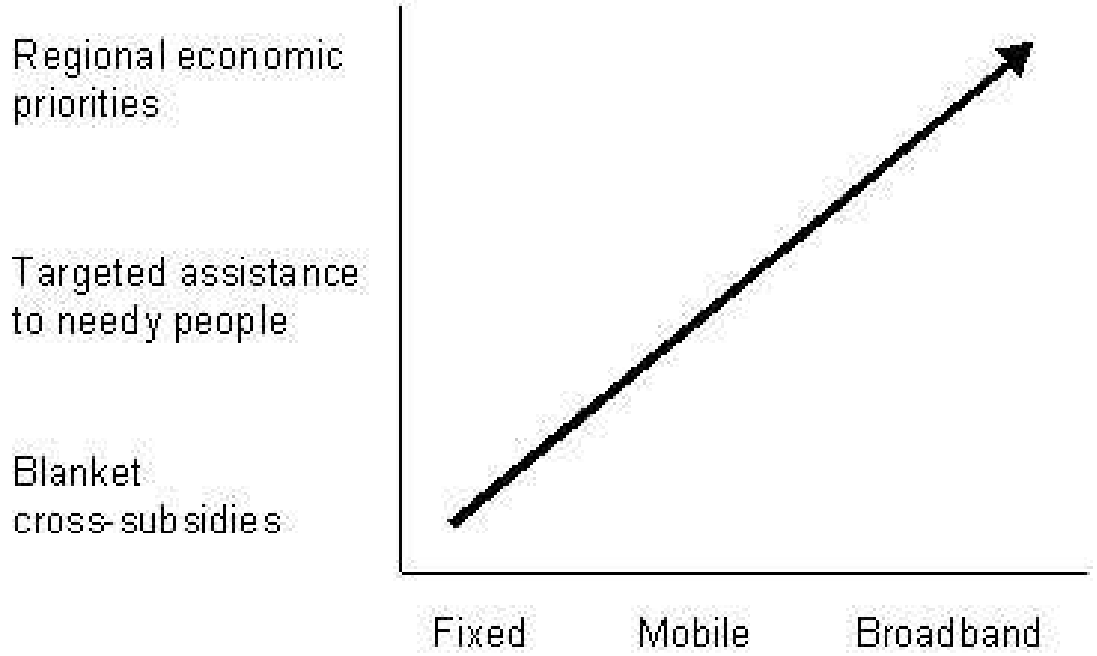
Digital divide

Questions to answer for a USP

1. What services? Scope
2. To whom? Segments of the population
3. Who should do it? Entities
4. What instruments? Technologies
5. How to finance it? Resources
6. What mechanisms?

1. Changing scope of USP

The changing priorities for universal service



Source: Ovum

Basic service is rapidly becoming insufficient in the movement towards an information society

http://www.youtube.com/watch?v=DMdRZ39vZGM

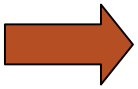
Definitions: Brazil

- Universal service is a type of telecommunications service that has to be provided at a specific quality with affordable prices regardless of its geographic location. It promotes access to essential telecommunications services to the population regardless of their regional, social, economic, or handicapped condition.

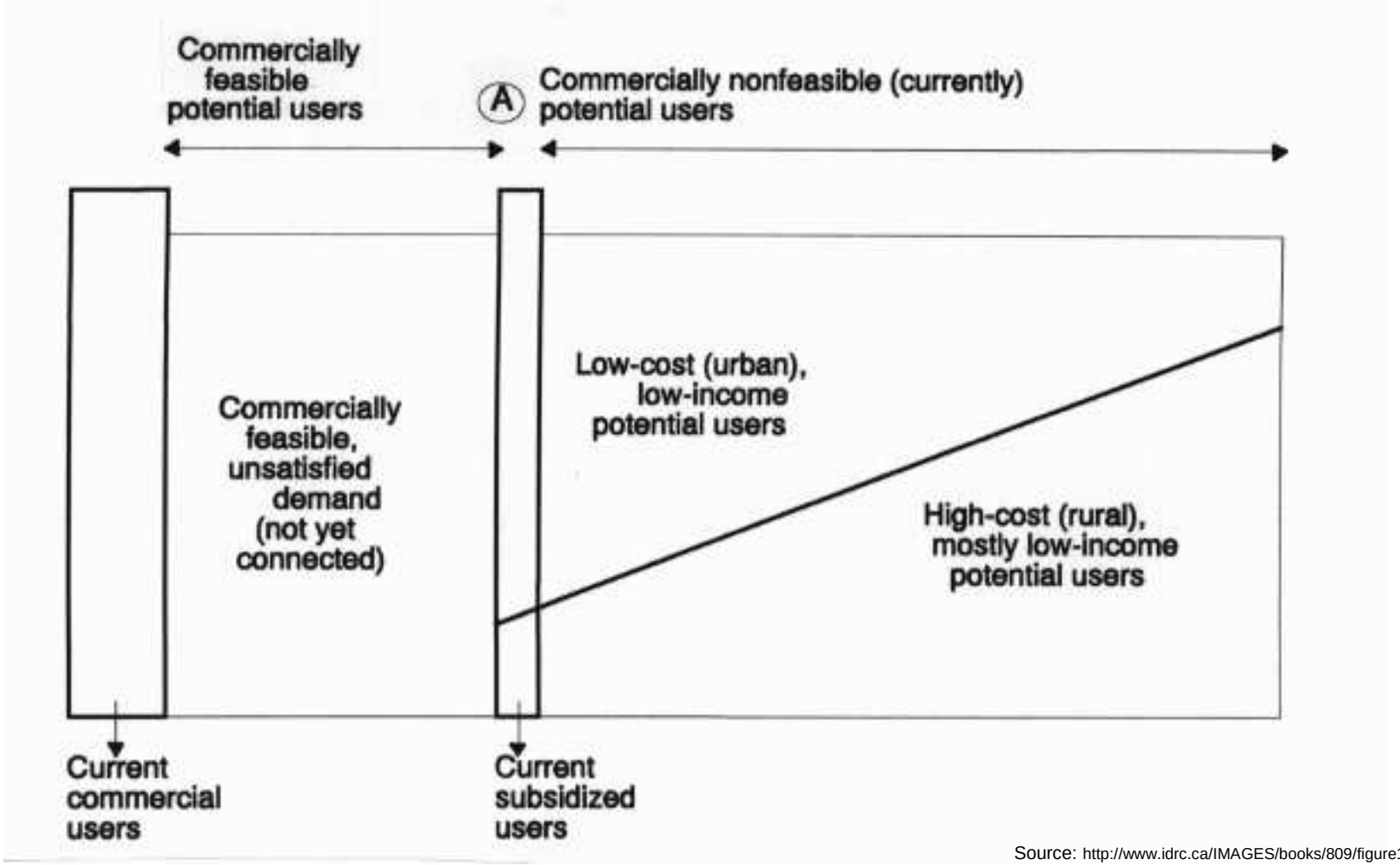
Definitions: Peru

- Telecommunications services are offered taking into consideration an equity principle. The right to be served is extended to the entire nation ensuring that it includes the integration of isolated urban centers.

  A broad definition provides greater flexibility in the inclusion of services



2. Access for whom?



Source: http://www.idrc.ca/IMAGES/books/809/figure1.gif

Criteria to determine reach

- The criteria of commercial feasibility may change through diminishing cost of investment capital, possibly combined with lower expectations for the rate of return
- The calculation of commercial feasibility should include:
  - *The long-term return to the economy* as a whole, including (among other things) the relative overall levels of economic benefit that can be derived from rural access and from urban access;
  - *The costs of service provision* can fall, for instance, through the introduction of new technologies; and
  - *The income of potential customers* — and the amount they spend on telecommunications — can increase.

Source: http://www.idrc.ca/en/ev-30849-201-1-DO_TOPIC.html

3. Who should do it?

State monopoly vs. Private Sector

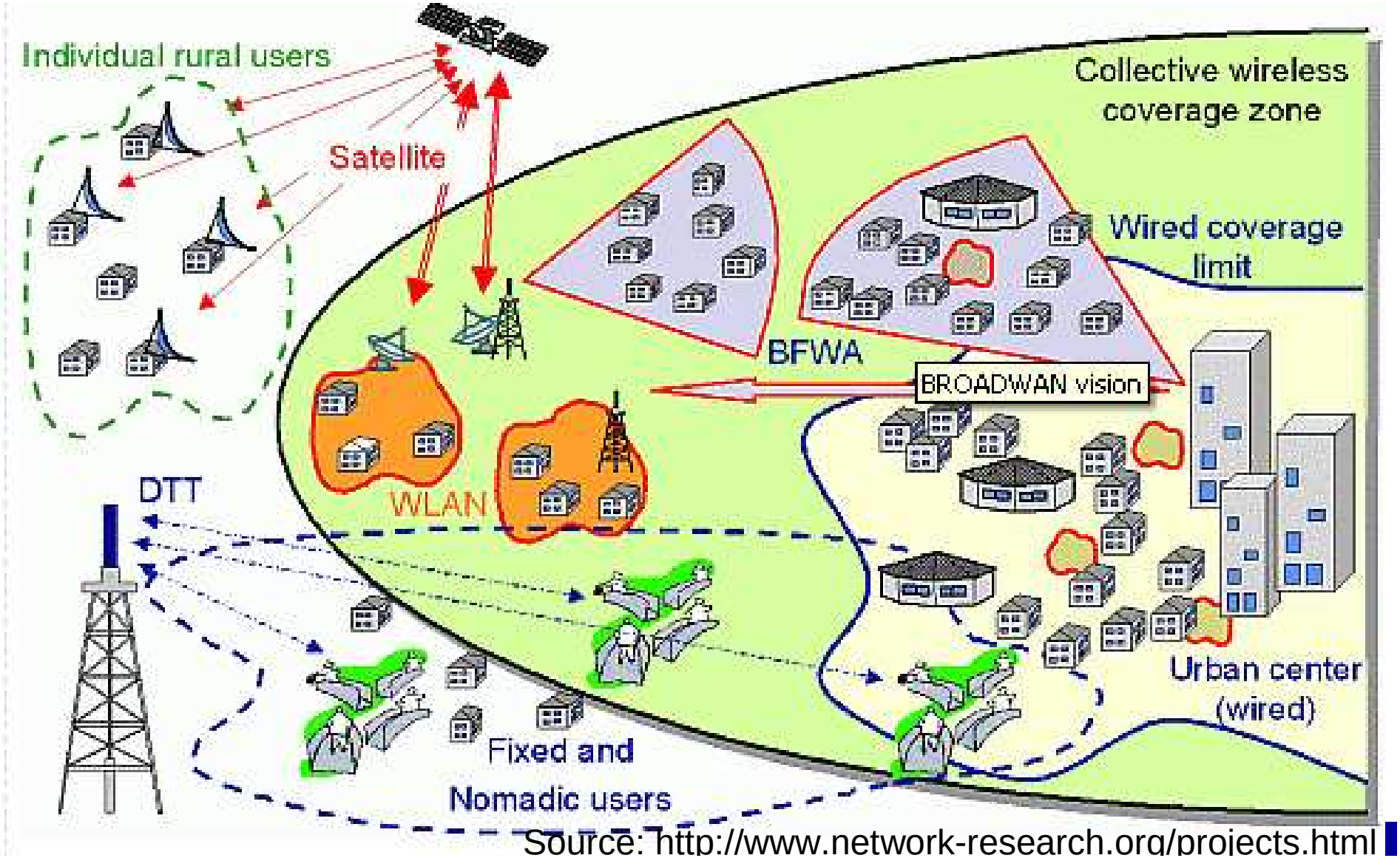
- An impressive level of universality was achieved under monopoly conditions in Europe, in many developing countries, and elsewhere.
- Much private-sector-inspired research has drawn attention to changes in the fundamental structure of the industry and to strong growth rates under some more liberalized conditions.

Source: http://www.idrc.ca/en/ev-30851-201-1-DO_TOPIC.html

4. What instruments?

- Wireless networks are dropping in price and are getting greater reach
- But:
  - Newer, wireless alternatives like WiMax are generally not included
  - Cable TV is also not included

Technologies used



Source: http://www.network-research.org/projects.html

5. How to pay for it?

- Sector-internal sources: (profit reinvestment)
  - Telecommunications-sector taxation
  - License fees
  - Interconnection fees
  - Obligatory contributions (universal service fund)
  - Spectrum auctions
- Sector-external sources
  - Direct government investment
  - Loans and development assistance
  - Privatization

6. Universal service mechanisms

- Direct government investment
- License conditions
  - Requiring network extension with a license zone,
  - Issuing multiple licenses,
  - Twinning lucrative and non-lucrative licenses,
  - Issuing licenses for additional non-telecommunications services,
  - Sharing revenue as an investment incentive,
  - Lowest-subsidy license auction

Universal service mechanisms

- Tariff policies and controls
  - Tariff averaging
  - Cross-subsidization
  - Reduced tariffs and targeted-user support
- Other mechanisms
  - Regulation of network interconnection Responsive use of the radio spectrum
  - Telecenters
  - Computer literacy and training programs
  - NGOs, business and government partnerships

Factors to consider

- The scale of the challenge
- The capital resources available
- What can be achieved with capital investment
- The scope for tariff flexibility

Source: http://www.idrc.ca/en/ev-30849-201-1-DO_TOPIC.html

Circumstances matter

- Countries with very poorly developed networks may find it especially hard to muster public and policy support, for reasons rooted in political realities.

- The regulatory regime can also limit the success of these programs if they are:
  - Spectrum is poorly managed
  - If certain technologies are prohibited
  - If the licensing regime is complex
  - If the institutions are not credible

Source: http://www.idrc.ca/en/ev-30849-201-1-DO_TOPIC.html

Govt. internal funding: South Korea

- Teledensity has increased from 7% in 1982 to almost 40%
- Expansion was driven by the Immediate Telephone Installation System (ITIS) policies, aimed at rapid extension of the network
- Additional funds for this expansion were raised from several sources. First, various laws had been enacted from the 1960s through the 1980s to raise funds from bonds and other national sources. Second, tariffs were structured to maximize investment funding. Third, telecommunications was given priority
- Central to the Korean information infrastructure, however, is the extension of Korea's emphasis on education to cover the information and informatics domain

Universal service fund: Peru

- In 1994, a new legal framework for telecommunications was adopted in Peru. The operator (local, long distance, international) was privatized and was given 5 years (to June 1999) to make the transition from monopoly to competitive supplier. Peru created a fund, FITEL, which is paid for by a tax on the industry and is aimed at supporting universal service in rural areas.

Source: http://www.idrc.ca/en/ev-30858-201-1-DO_TOPIC.html

Twinning: Philippines

- The regulator (NTC) divided the country into 11 license zones (4 in Manila), and agreements on the distribution and twinning of lucrative and non-lucrative licenses were then negotiated between the licensees and the government. Each of the eight international-service licensees must install 300,000 new local-access lines in matched rural areas; each of the five cellular-service licensees must install 400,000.

Source: http://www.idrc.ca/en/ev-30858-201-1-DO_TOPIC.html

Privatization: Sudan

- Sudan's desperate need for investment capital has led to almost complete neglect of universal service in the context of privatization.
- Despite very generous conditions to encourage private-sector participation, including an exclusive license for international services, a low valuation, and total private-shareholder control, the offer failed to have the desired effect, and so far progress has been uncertain.
- The Deputy Director General admitted that they have no idea how they can achieve this (Yousif 1994).

Source: http://www.idrc.ca/en/ev-30858-201-1-DO_TOPIC.html

Bangladesh/Nigeria: Private Sector

http://www.youtube.com/watch?v=crHS9YEx4lg

Bangladesh: Grameen Phone

- Grameen Phone introduced village pay phones through the cellular network in the rural areas.
- Pay phones substituted the costs involved in physical travel to accomplish the same information-related task.
- It helped improve communication in the villages within Bangladesh.
- Affordable and easily accessible services delivered over the village pay phone brought about a radical change in the business and socio-economic way of life
- These initiatives by Grameen Phone helped improve the lifestyle of the lower strata of the society and addressed problems that they faced.

Community based initiatives: Brazil

Benefits of Integration Efforts

- Enlargement of the market which makes investment more attractive
- More entry means more competition
  - Reduced prices
  - Higher quality
- Reduction of “forum shopping”
- Possibility of aggregation (satellite for example)
- Ability to attract external capital for the region

The Universal Service in the US

- The definition was formalized and expanded to include:
  - libraries
  - schools and rural health care clinics
- The scope of services to be subsidized was also expanded to include computer equipment and Internet access.
- The program relies on the contribution of telecommunication carriers who pay a fee proportional to their interstate and international revenues
- The Universal Service Administrative Company (USAC) is the agency responsible for administering the funds

Challenges of the Universal Service Concept

- Affordability
- Heterogeneity of services
- Advanced services
- Explicit funding and competitive neutrality
- New technologies

Should the USP be eliminate (US)?

- A universal service program should not longer include only basic telephony. This is particularly true when 95% of the population has access to basic telephony (Belinfante, 1993)

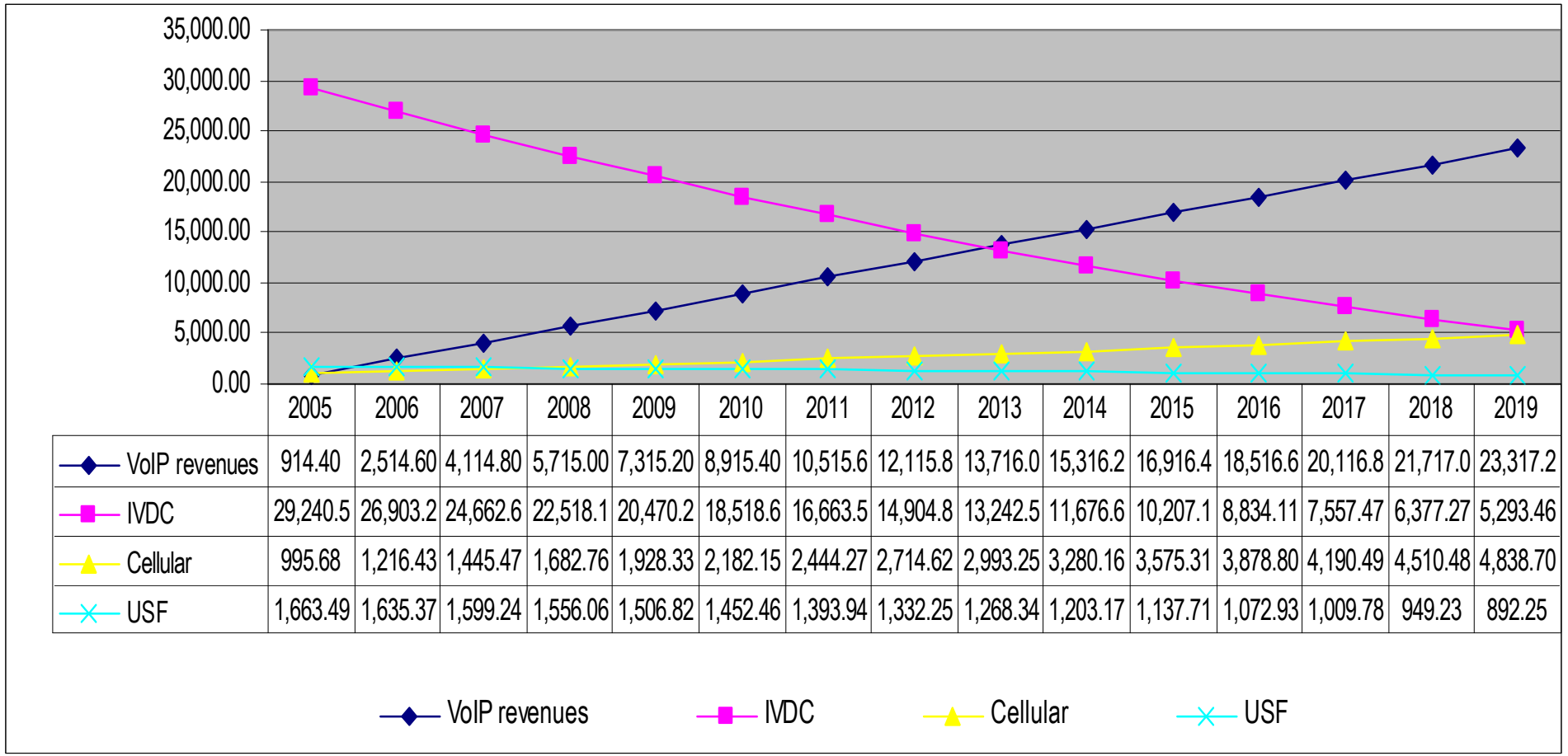
- Goggin (Goggin & Newell, 2000) proposed to look at universal service with the concept of disability in mind. Taking this into consideration, a universal service definition should thus take into consideration the special needs of certain people

Should the USF be eliminated (US)?

- The focus should thus be changed to consider, for example, basic computer literacy and end user equipment (Gillett, 2000)

- Universal service Lievrow argues that it should include training and education to cultivate human capacity (Lievrouw, 2000)

VoIP and USP



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
VoIP revenues	914.40	2,514.60	4,114.80	5,715.00	7,315.20	8,915.40	10,515.6	12,115.8	13,716.0	15,316.2	16,916.4	18,516.6	20,116.8	21,717.0	23,317.2
IVDC	29,240.5	26,903.2	24,662.6	22,518.1	20,470.2	18,518.6	16,663.5	14,904.8	13,242.5	11,676.6	10,207.1	8,834.11	7,557.47	6,377.27	5,293.46
Cellular	995.68	1,216.43	1,445.47	1,682.76	1,928.33	2,182.15	2,444.27	2,714.62	2,993.25	3,280.16	3,575.31	3,878.80	4,190.49	4,510.48	4,838.70
USF	1,663.49	1,635.37	1,599.24	1,556.06	1,506.82	1,452.46	1,393.94	1,332.25	1,268.34	1,203.17	1,137.71	1,072.93	1,009.78	949.23	892.25

Another US Case study

- The American Library Association (ALA) and the Association of Specialized and Cooperative Library Agencies (ASCLA) joined forces with Hewlett-Packard Company (HP) to create an initiative with the charter to develop accessible computer workstation for libraries nationwide.

Library Technology Access Initiative (LTA)

- Creates a reference platform of PC based workstations from HP that address the needs of library patrons with visual, hearing, mobility, and learning disabilities.
- Brings a new level of information accessibility to people with disabilities, connecting them with the benefits and opportunities of the information revolution.

Case study (six libraries)

- Cleveland public library
- Milwaukee public library
- Johnson Country Public library (Kansas)
- San Diego Public library
- University of South Dakota
- Arizona State University

Case study (disabilities)

- Blindness/low vision
- Deafness/hearing impairment
- Arthritis, one-handed use
- Spinal cord injuries
- Carpal tunnel syndrome or upper extremity repetitive stress disorder
- Tremors
- Learning disabilities, cognitive disabilites
- Back problems.

Functions of LTA

- Optimized to accommodate persons with low vision or blindness or who are hard-of-hearing or deaf
- Reading software program that reads aloud both information that the user types in and information that is already provided on the computer monitor.
- Special keyboard provides enlarged keys to assist persons with low vision
- Closed-captioning and visual cues of certain computer functions for hearing problems
- Closed –circuit television (CCTV) provides increased magnification for printed material.

Conclusions

- The definition of Universal Service/Access expands as economic circumstances improve. Poorer countries need There is a need strong commitment on the part of the government to support universalization.
- The scope/reach of the program will depend on the economic and geographic characteristics of the population as well as the benefits.
- Both state monopolies and the private sector can improve connectivity if the policies and commitment are in place to support these initiatives

Conclusions

- International funding comes with restrictions that can limit creativity of mechanisms
- There are numerous internal mechanisms to expand connectivity.
  - The decision will depend on the circumstances of the country.
- In addition to the traditional universal service funds there are other innovative ideas such as twinning or NGOs/corporation/government partnerships.

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