

Telecom & Information Services for the Poor: Towards a Strategy for Universal Access

Focus: The Two Gaps - Market and Access

Universal Access & Rural Connectivity

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Presentation components

- 1 Introduction to universal access two gap model
 - ⇒ Excerpts & concepts from *World Bank Discussion Paper No. 432*, published 2002
- 2 Consideration of implications for Universal Access funding / subsidy requirements
- 3 International experience to date and projections for future rural telecom development

Insights based on

- ◆ Projects in rural telecommunications in many developing countries
 - ⇒ Uganda, Tanzania, Malawi, S. Africa, Botswana, Morocco
 - ⇒ India, Nepal, Thailand, Malaysia, Philippines
 - ⇒ Peru, Brazil, Paraguay, Ecuador, Mexico, Venezuela, Argentina
- ◆ Study of strategies pursued by other countries
 - ⇒ Two major World Bank published reports
- ◆ Recent technical assistance with UCC Uganda on the establishment of the RCDF and with CCK Kenya on UA policy & funding development

Issues today

- ◆ US / UA is achieved through a combination of market/ regulatory measures *and* a funding mechanism
- ◆ Regarding markets & regulation
 - ⇒ What is the theoretical limit of the marketplace?
 - ⇒ How to get there and enable operators to service poor and rural areas successfully and viably?
- ◆ Regarding subsidies
 - ⇒ How to minimize the subsidies & use resources efficiently
 - ⇒ How to leverage private investment
 - ⇒ How to simplify the process
 - ⇒ How to make them 'smart' - i.e. to kick-start and kick-off, not create subsidy dependency.

Universal access is

- ✦ a strategic policy to meet minimum needs *and* demand for private and public access
- ✦ offering people the right to *spend* a proportion of their income on communicating, saving them costs elsewhere and improving their productivity
- ✦ enabling operators who wish to serve challenging areas and people groups to do so commercially, so that service will be good quality & market responsive
 - ⇒ economic benefits only come from services that work and sustain themselves
- ✦ blending incentive with obligations in regional and rural license formulation

In 2002, how much do people spend?

- ✦ Traditionally, economic value translates into a telecom market of 1-3% of total community income
 - ⇒ fixed network 1990's model
 - ⇒ mobile is offering us a new 2002 model
- ✦ there's evidence from Uganda, Kenya and elsewhere that people value mobile communications even more highly
 - ⇒ telecom services are essential to social and economic life in low income areas
 - ⇒ this is sometimes evident in high expenditures - "we can afford"
 - ⇒ ... and financed by the beer and soft drinks industry!

Universal access in practice

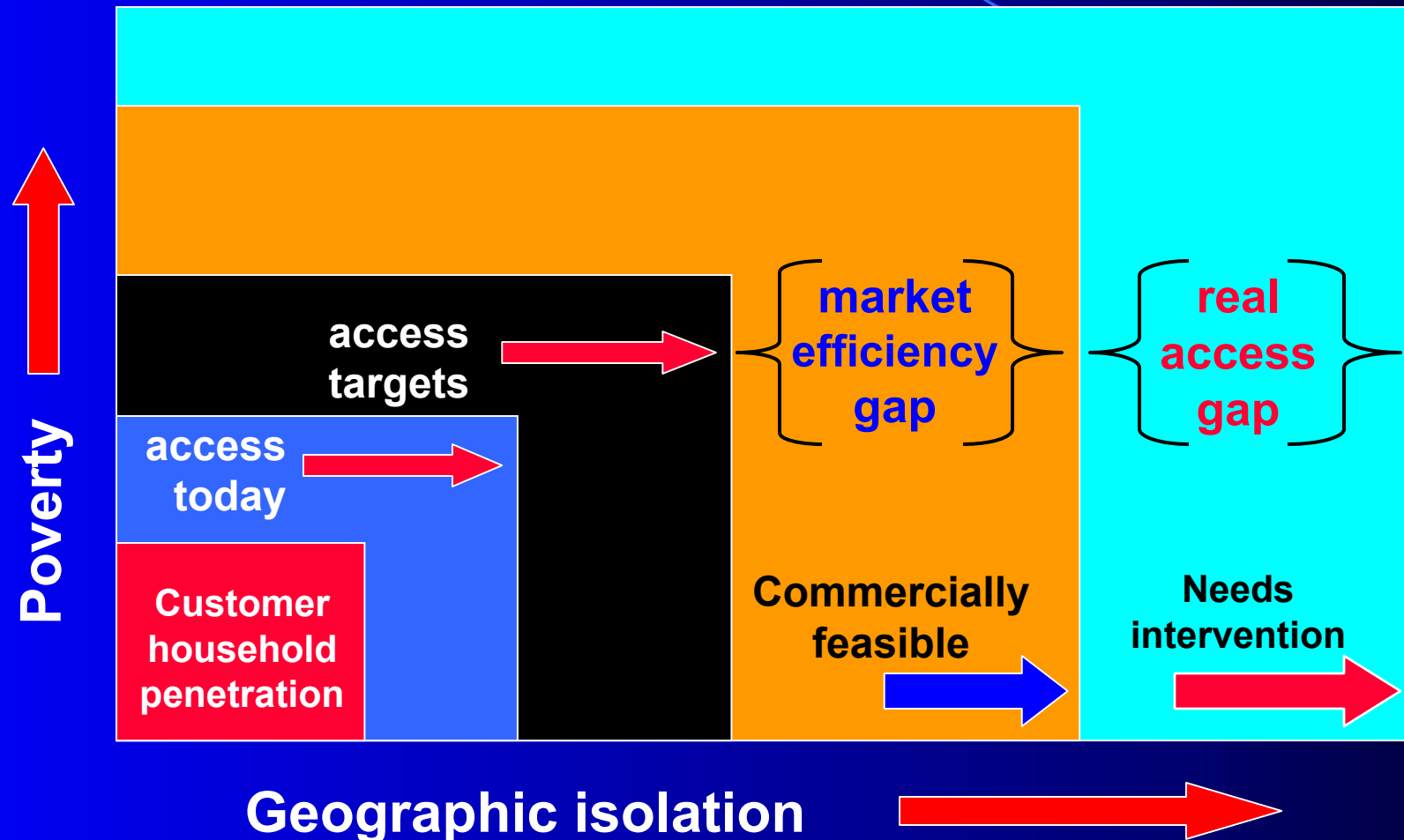
- ◆ Institutions & businesses who can afford to pay have access to private service
- ◆ public telephone services available to the general population, *in the vicinity*, for the price of a call
- ◆ choice of fixed and mobile payphones, phone shops and kiosks to offer populations choice within geographical range
- ◆ new tele-access businesses (phone & ICT) encouraged to emerge to serve demands
 - ⇒ maximise role of the private sector in public service provision
 - ⇒ leverage the policy to meet private demand and social targets

Dimensions of the UA issue

Both targets and policies have two dimensions

- ◆ Two *Digital divides*, between
 - ⇒ rich vs. poor
 - ⇒ urban vs. rural
- ◆ Or ... Two *dimensions* of the same divide
 - ⇒ relative poverty (both urban and rural)
 - ⇒ relative isolation (rural only)
- ◆ Two *gaps* & two types of policy solution
 - ⇒ the *market efficiency* gap
 - ⇒ the *access* gap

Dimensions applied to the network



Market efficiency gap

- ◆ The gap between what an imperfect market achieves in terms of reach and what a perfectly liberalised market would achieve
- ◆ Features of an efficient market operating under liberalised conditions, with 'barriers to entry' removed
 - ⇒ privatised incumbent *plus* private sector competition
 - ⇒ *level playing field* for all participants
 - ⇒ *fair interconnection* & cost-based tariffs
- ◆ Actual market reach different for each country
 - ⇒ 'country challenge' factor

The real access gap

- ◆ People, communities and areas that cannot be reached by the market without intervention by government/ regulator
- ◆ Services that cannot be supplied without a 'smart' intervention
- ◆ Needs special strategy, finance and incentive
 - ⇒ universal access fund or rural telecom development fund
 - ⇒ other forms of subsidy or incentive

Addressing the market efficiency gap

Interconnection is one key

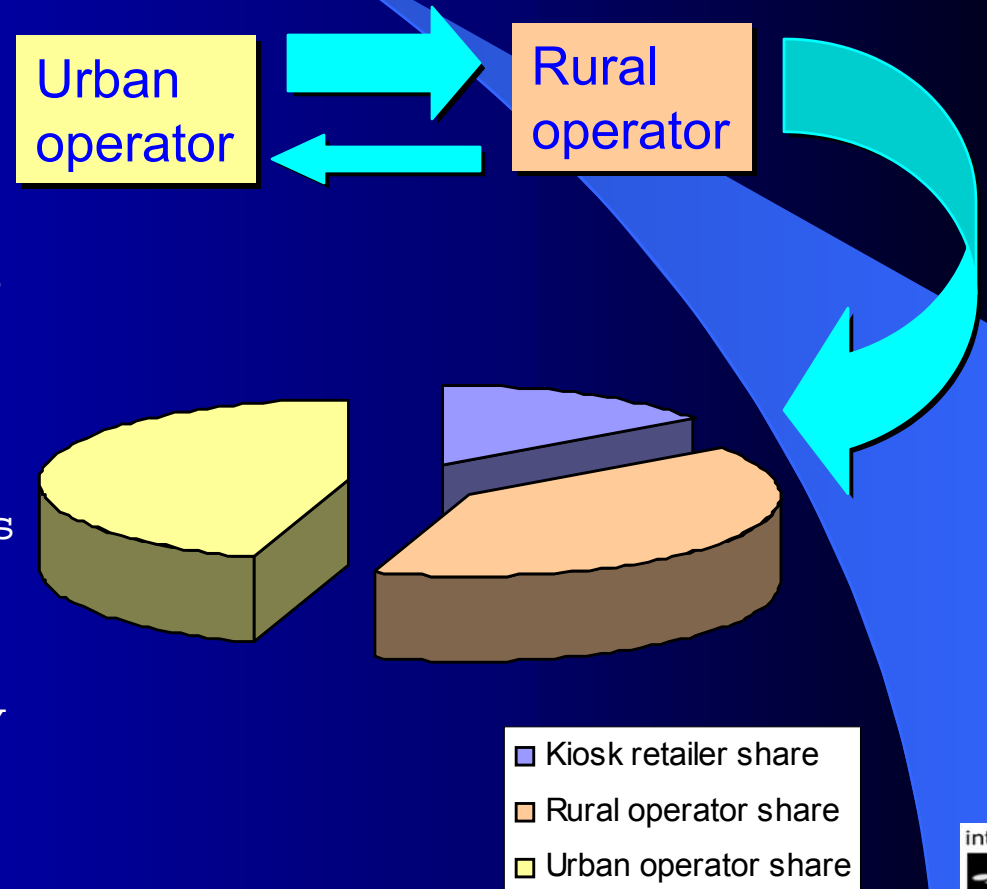
- ◆ Open and fair
- ◆ Directed by regulator, not left to incumbent
- ◆ Cost-based network access charges (call termination fees) for rural operators
- ◆ [Already exists in fixed-mobile interconnection]
- ◆ Two methods of payment
 - ⇒ Organised revenue pool ✗ (too complex)
 - ⇒ Caller pays higher tariff to call rural areas ✓

Advantages of asymmetric interconnection

- ✦ greater viability for rural operators
- ✦ rural development supported by urban to rural calls and affordability of urban 'relatives' is higher
- ✦ potential to develop incoming call termination market
 - ⇒ operators will be able to make majority of revenues from incoming calls
 - ⇒ payphone retailer share to incentivise use of phone for incoming calls
 - ⇒ increase the manned payphone market and increase competition on retail mark-up
 - ⇒ [for insight, look at the mobile incoming call market]
- ✦ reduction of both the market efficiency and access gaps
- ✦ reduced need for subsidies

The special interconnect applied to payphone kiosk retailers in Uganda

- ◆ Originating operator pays the terminating (rural operator) a higher termination fee
- ◆ Terminating operator in turn pays the kiosk operator, say one third of its share
- ◆ If the originating and terminating operator are the same, it still pays the kiosk the full share
- ◆ For technical & customer service reasons, rural area operators may need their own area code



Assymmetric interconnection in play

Chile access charge rates (US cents per minute)

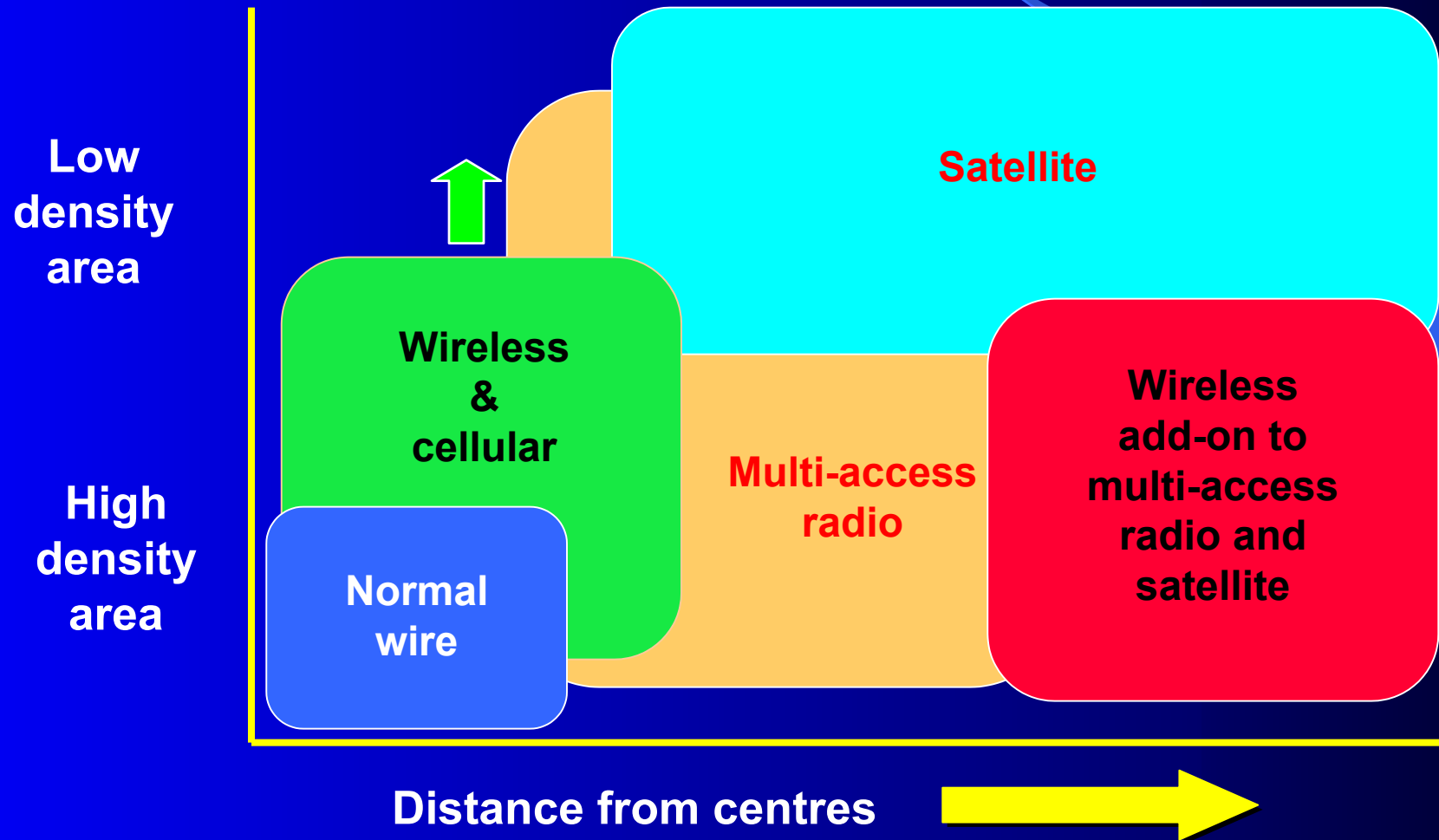
| <i>Company</i> | <i>Localities</i> | <i>Peak</i> | <i>Off-peak</i> |
|-----------------------|-------------------|-------------|-----------------|
| CTC-national | All | 1.0 | 0.2 |
| CNT-regional | Cities | 1.5-2.4 | 0.3-0.4 |
| | Towns | 3.1 | 0.4 |
| | Rural areas | 7.2 | 1.2 |
| Rural operator | All | 18.7 | 9.3 |
| Mobile operators | All | 21.1 | 14.8 |

Source: Tariff decree of 1999 and CTR data for July 2001
Colombia and Peru coming onstream



Where does the market gap end?

Technology only one aspect



The country challenges

The “geo-economic” factors

◆ GDP & income distribution

- ⇒ per capita income only one barrier
- ⇒ Gini index - economic disparity - higher index yields a higher divide
- ⇒ income disparity often reflects largely the urban/rural divide (not always)

◆ Geographic size & population density

- ⇒ larger area usually means more challenge for rural telecoms
- ⇒ lower population density

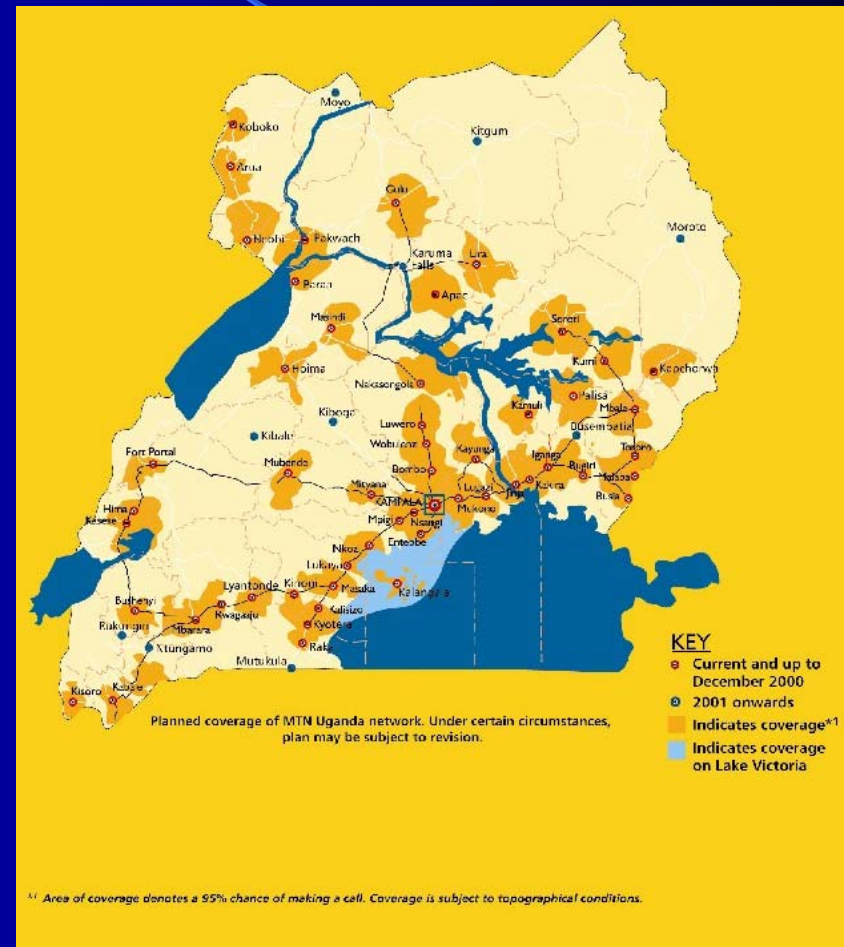
◆ Land type - ratio of total arable & crop land to total

- ⇒ lower ratio means more mountains and hostile features
- ⇒ less even population distribution is a greater challenge

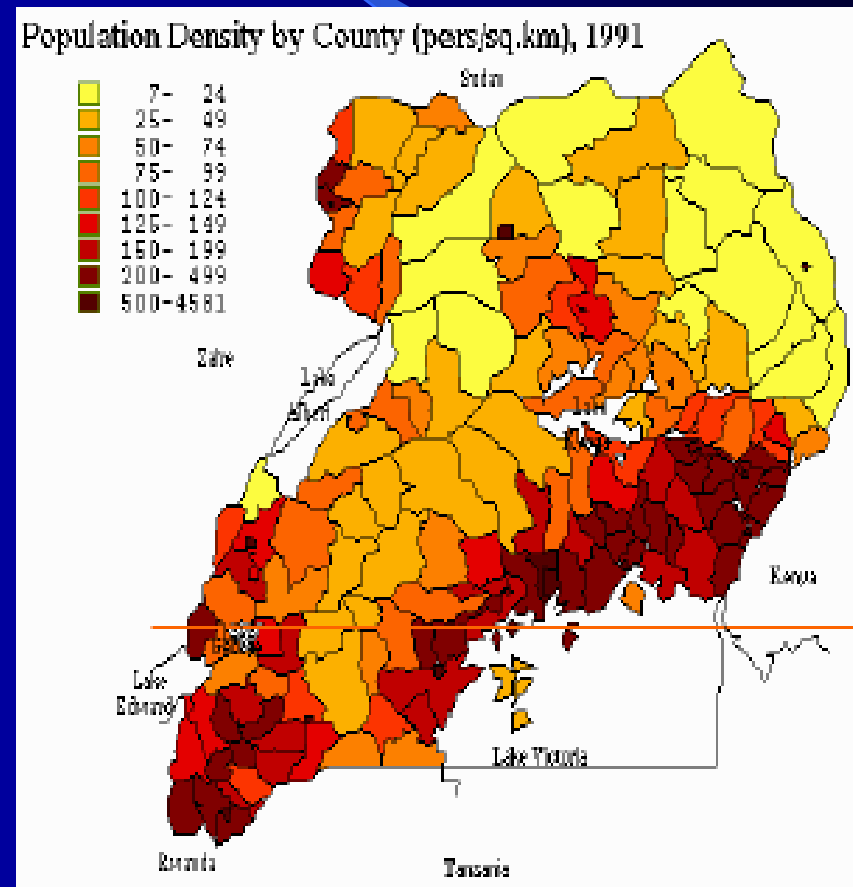
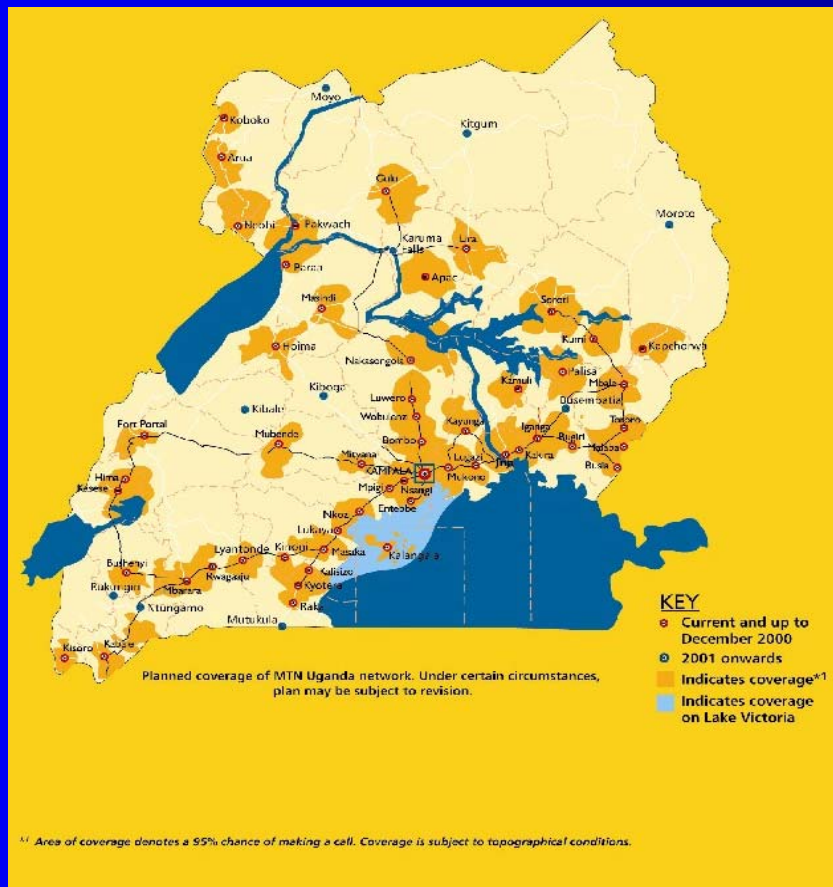
Geo-economic factors

MTN's recent network reach (Uganda)

- ◆ MTN present with mobile service in approx. 290 sub-counties (330 by mid 2001)
- ◆ MTN has the potential to serve about 600-700 sub-counties (Out of 800+) with fixed payphone service by Mid 2002
- ◆ Of these, 200+ served with 'rural fixed package' solutions
- ◆ 150 sub-counties have little chance of being covered by 2003 *These are the real access gap.*



The poorest served areas are defined by population density



Geographic challenge

Remote & challenging areas

Significant regional variations

Uniform & small country

Country challenge ↑

| | | | |
|--|-------------------------------|-------------------------|-----------------------------------|
| | Indonesia Russia | Philippines Brazil → | Peru Chile Canada Mexico |
| | Morocco | Argentina → | Colombia |
| | SADC countries S. Africa → | Venezuela India → | USA NZ |
| | Senegal Cote d'Ivoire | Kenya Uganda | Malaysia EU |
| | | Ghana Hungary → | Poland El Salvador |
| | Bangladesh | | |

Degree of liberalization in basic service →

National monopoly

Partial liberalisation

Full competition

Financing options for the access gap

Remote &
challenging
areas

Significant
regional
variations

Uniform
& small
country

Country challenge ↑

| | | |
|---|---|--|
| <p>Monopoly cross- subsidises costly rural areas & low income users</p> | <p>Cross-subsidies <i>and/or</i> Special US/UA fund if some license areas (e.g. of smaller operators) are higher cost</p> | <p>Market meets most needs US/UA fund to address access gap for challenging areas</p> |
| <p>As above for for low income users</p> | <p>As above</p> | <p>As above US/UA fund to address access gap for low income users</p> |

Degree of liberalisation in basic service →

National
monopoly

Partial
liberalisation

Full
competition

Extending market, reducing subsidy

most significant incentives for rural areas

- ◆ Special finance/rural development fund
 - ⇒ well proven to attract bidders - e.g. in Chile, Peru, Colombia, Guatemala, Dominican Republic
 - ⇒ most successful if the licenses offer attractive incentives, e.g. long term access to radio frequencies
- ◆ Access to LD & int'l & Interconnect:
fair/favorable share of orig. & incoming revenues for local operator
 - ⇒ single most important factor in liberalising markets
- ◆ Equity or non-recourse debt by large institution
 - ⇒ E.g. IFC participation
 - ⇒ common in cellular but no precedent yet for rural

Fund experience to date

| Country | Source of Finance | Period | Localities served | Max subsidy available (US\$M) | Subsidy given (US\$M) | Subsidy per locality |
|-----------|------------------------------------|----------|-------------------|-------------------------------|-----------------------|----------------------|
| Chile | Government budget | 1995-97 | 4,504 | 24.2 | 10.2 | 2,256 |
| | | 1998-99 | 1,412 | 14.4 | 9.8 | 6,919 |
| | | 2000 | 143 | 1.9 | 1.8 | 12,727 |
| Peru | 1% Operator levy | 1998 | 213 | 4.0 | 1.7 | 18,800 |
| | | 1999 | 1,937 | 50.0 | 11.0 | 5,700 |
| | | 2000 (1) | 2,290 | 59.5 | 27.8 | 12,100 |
| Colombia | Operator levy & Gov't contribution | 1999 | 6,865 | 70.6 | 31.8 | 4,600 |
| Guatemala | Spectrum auctions | 1998 | 202 | N/A | 1.5 | 7,587 |
| | | 1999 (2) | 1,051 | N/A | 4.5 | 4,282 |
| Dom. Rep. | 2% Operator levy | 2001 | 500 | 3.8 | 3.4 | 6,800 |

Notes: (1) Implementation delay due to subsidy winner disqualified & subsidies awarded to second bidders.
 (2) Actual fund disbursements, excluding subsidies won but network not implemented due to operator failure



Reasons for success

The Latin American experience

- ◆ Well-designed competitive mechanisms
 - ⇒ 'competitive reverse auction'
- ◆ Multiple licensing, attractive licenses, one-stop shop for licensing & radio frequencies
- ◆ Supplier market interest to gain markets
 - ⇒ most successful bidders associated with suppliers
- ◆ Good market & demand data preparation
- ◆ Regulatory support
 - ⇒ tariff flexibility - "better at cost than no service at all"
 - ⇒ asymmetric interconnect - Chile, Colombia, Peru

Risks and Challenges

◆ Sustaining competition

- ⇒ first bids often the most strategic and competitive
- ⇒ less strategic & later bids were less competitive

◆ Problem of the least viable / more marginal localities

- ⇒ often the most remote - VSAT sites

◆ Under-bidding

- ⇒ need more business planning & discipline

◆ Operational inexperience of the bidders

- ⇒ especially with marketing, optimisation & customer service

◆ The deteriorating financial markets

- ⇒ needs 'senior institution' commitment

Trends

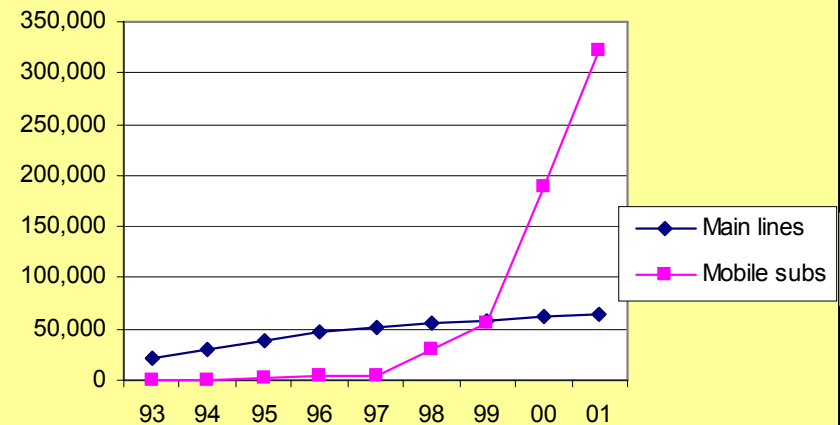
★ Advance of mobile

- ⇒ fewer geographic areas needing intervention or support
- ⇒ US /UA features
- ⇒ Funds can focus on the remaining 'access gap'

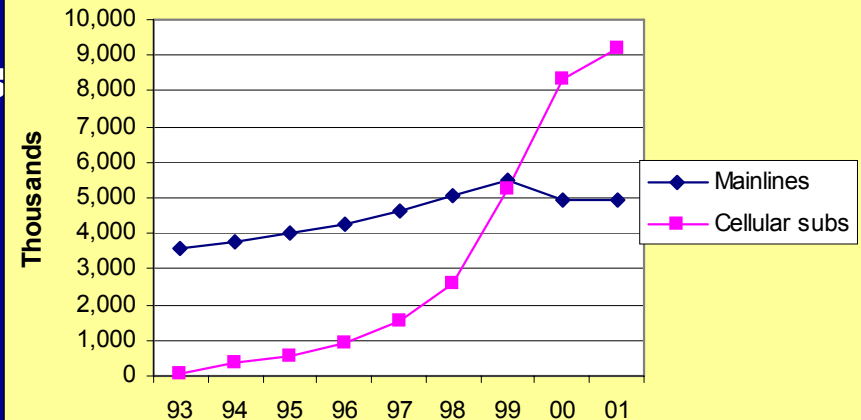
★ New frontiers, advanced ICTs

- ⇒ not necessarily served by mobile infrastructure, also needs support, but
- ⇒ important not to distort an emerging market
- ⇒ focus on enabling policy & access
- ⇒ support e-Government & other applications to create demand for telecentres

Fixed and mobile subscriptions - Uganda



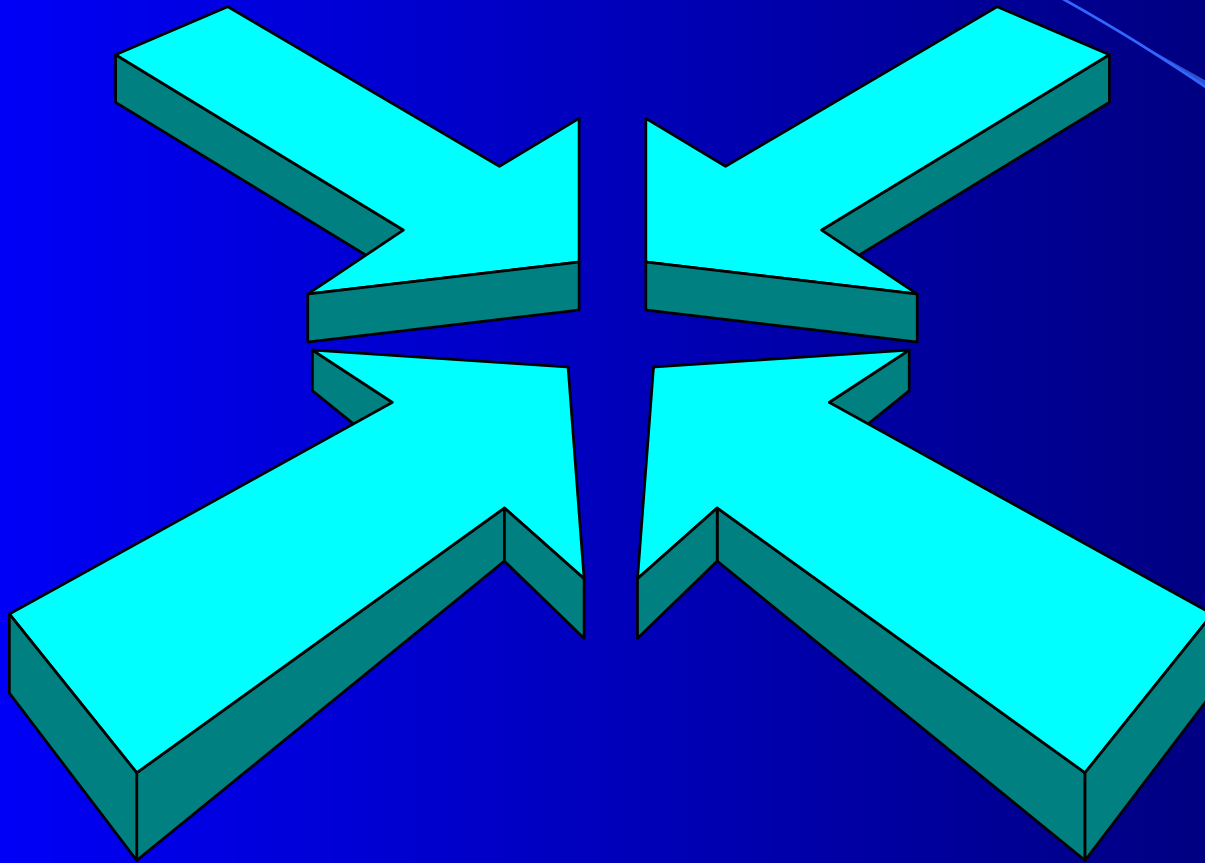
Fixed & mobile subscriptions- S. Africa



In summary

- ◆ Reduce the market efficiency gap *as a first priority*
- ◆ Asymmetric interconnection and tariffs bridge the market efficiency gap and reduce subsidy needs in the access gap
- ◆ UA Funds should focus first on access to infrastructure services
- ◆ Mobile operators should contribute *and* be eligible for funds
- ◆ ICT advanced services can be added incrementally to working telecom retail outlets, or be started under various modalities, but few are at the take-off stage without prolonged support and subsidy - sustainability issue to be discussed.

Thank you



Q & A
Discussion

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