

Mobile operators: Their contribution to Universal Service and Public Access

08 July 2002



Sonja Oestmann

© Intelecon Research & Consultancy Ltd.

Vancouver, Canada

Overview of Presentation

- ◆ How do mobile operators contribute to Universal Service (US) and Public Access?
- ◆ To what extent do they contribute?
- ◆ What does this mean for regulators?
- ◆ To answer the questions we will focus on:
 - ⇒ Nature and characteristics of mobile contribution
 - ⇒ Limits of mobile technology
 - ⇒ Implications and opportunities for policymakers

How mobile reaches low-income users

- ✦ Affordability of mobile *access*
- ✦ Appeal of prepaid services
- ✦ Advantages of mobile network economics

Affordability of mobile *access*

Comparing start-up costs and monthly recurring costs incl. minimum number of calls:

- ◆ Start-up cost of mobile is on average almost 25% less than fixed service
- ◆ Recurring monthly costs for mobile services are 40% less
- ◆ Often handsets can be obtained even cheaper: 2nd hand market
- ◆ However, mobile only cheaper if low call volume

Table 1

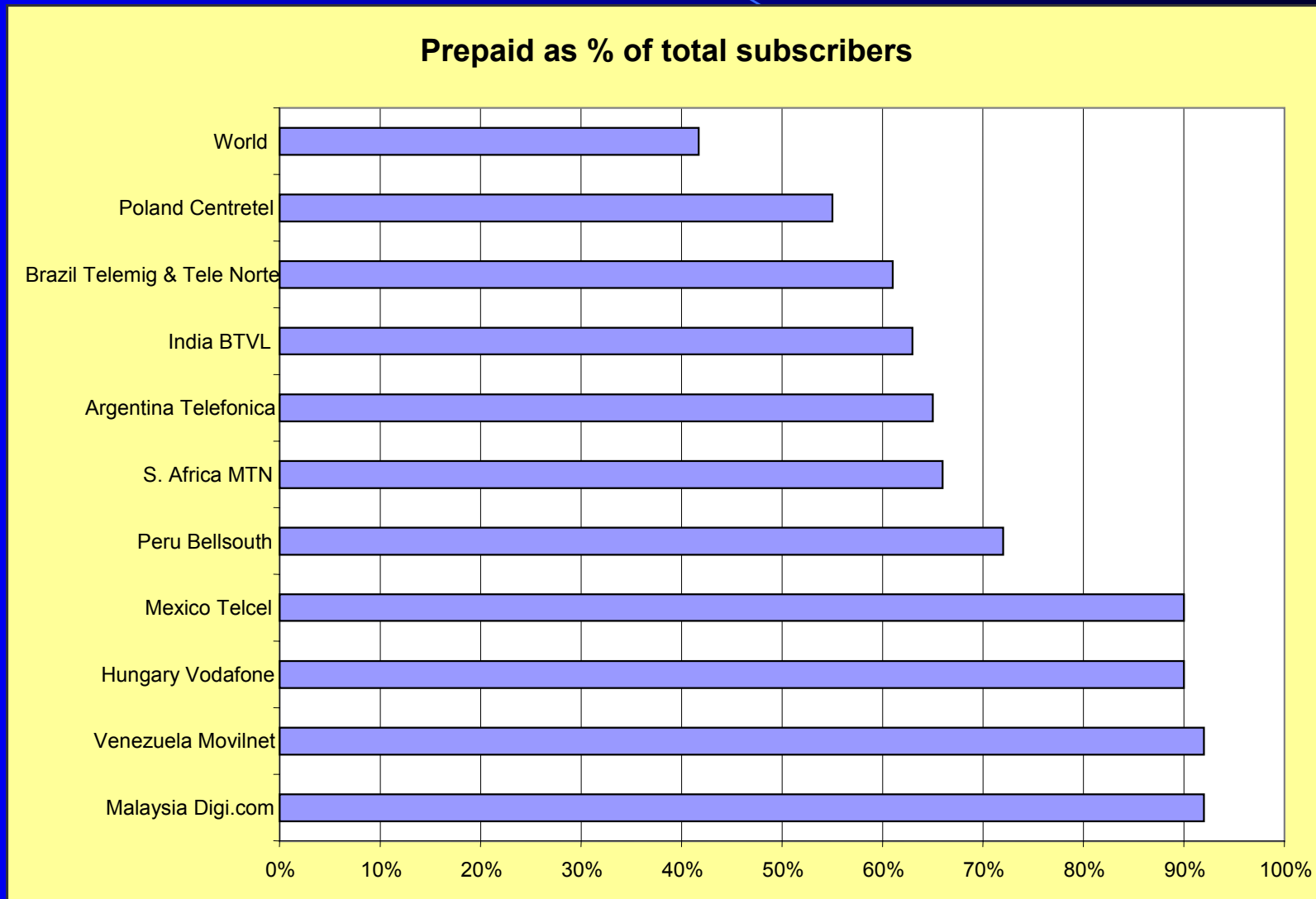
Countries	Start-up costs		Monthly recurring costs incl. calls	
	Fixed	Prepaid Mobile	Fixed	Prepaid Mobile
Argentina	\$150.00	\$50.00	\$13.65	\$7.95
Brazil	\$27.00	\$40.00	\$7.90	\$4.50
Chile	\$43.00	\$76.00	\$11.40	\$8.10
Colombia	\$168.00	\$49.25	\$3.70	\$4.20
Hungary	\$71.00	\$23.95	\$8.50	\$7.35
India	\$18.00	\$91.85	\$5.70	\$6.15
Jordan	\$141.00	\$61.25	\$4.10	\$2.55
Malaysia	\$13.00	\$92.15	\$5.40	\$8.80
Mexico	\$119.00	\$31.50	\$16.25	\$6.90
Morocco	\$47.00	\$36.50	\$6.50	\$2.10
Peru	\$131.00	\$66.70	\$13.95	\$4.50
Philippines	\$12.00	\$73.80	\$28.80	\$5.10
Poland	\$129.00	\$53.50	\$7.40	\$8.40
S. Africa	\$30.00	\$45.00	\$9.45	\$3.00
Thailand	\$84.00	\$81.80	\$2.85	\$1.80
Uganda	\$103.00	\$121.35	\$6.80	\$4.65
Venezuela	\$102.00	\$54.00	\$11.60	\$6.15
Average	\$81.65	\$61.68	\$9.64	\$5.42



Using mobile “on the cheap”

- ✦ “Beeping” e.g. rural relative calls more affluent urban relative, but hangs up before he gets charged, leaving his ID so that urban relative can call back
- ✦ Mobile just used for incoming calls, being contactable, fixed network and phone shops used to make majority of outgoing calls (e.g. Morocco)
- ✦ Using Short Messaging System (SMS)

Spread of pre-paid mobile



Benefits of pre-paid beyond cost

- ✦ Ease of use
- ✦ Allows to control expenditure
- ✦ Option to just receiving calls in times of economic difficulty
- ✦ Hassle-free sign-up & no binding long-term contract
- ✦ Avoids credit checking & need to have bank account
- ✦ Ideal for people having bad debt issues and no steady income

Pre-paid trends

- ✦ Trend towards prepaid will continue - in South Africa, for example, although the overall use of prepaid is 66%, more than 90% of new mobile connections are now prepaid
- ✦ In Africa (excluding South Africa), approximately between 90 and 95% of total mobile customers use prepaid accounts
- ✦ Fixed operators are now also starting to offer prepaid to reduce their exposure to bad debt

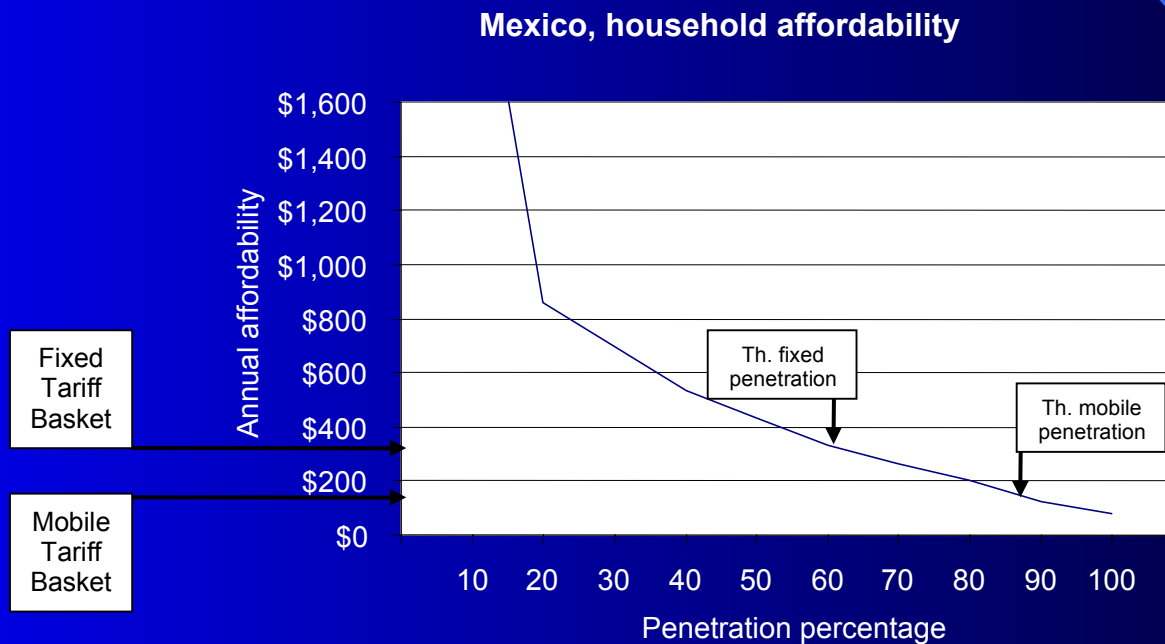
Mobile networks more economic

Can serve rural areas and low-income customers more economically than fixed because:

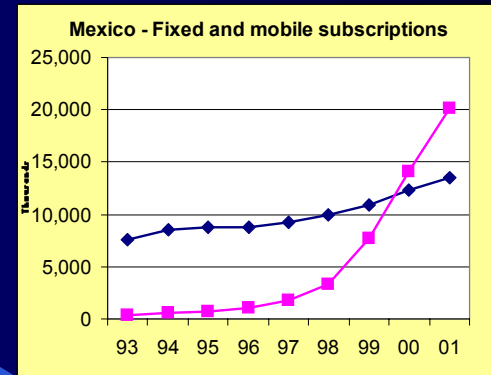
- ✦ Every additional customer improves bottom-line of mobile cells, function of economies of scale
- ✦ In countries with limited fixed network, mobile operator often the “first-in” in some areas and captures *all* pent-up demand
- ✦ Mobile operators invest in coverage for travelling urban customers; capturing new rural users is additional income
- ✦ Rural customer also viable through incoming calls and very attractive interconnect revenue
- ✦ Pre-paid services involves less customer administration, reduces operating costs

Evidence for mobile contribution

Theoretical model



Model implications



- ✦ Model indicates that slightly over 60% of households should be able to afford fixed services whereas almost 90% could afford mobile services
- ✦ Mexico's current fixed household penetration is no more than 45%, fixed operator does not serve customers up to the margin of affordability
- ✦ Users seem to use mobile instead: mobile teledensity is about a third higher than fixed
- ✦ Mobile services are approx. half the cost of fixed services to marginal customers and are apparently more attractive to them

Mobile is reaching previously unconnected users

- ◆ Mobile service has overtaken fixed service worldwide but differently
 - ⇒ In many OECD countries mobile has overtaken fixed because fixed households have *in addition* several mobile phones
 - ⇒ In developing countries, people use mobile phones *instead* of fixed services
- ◆ In the latter countries mobile substitutes basic fixed services, 28 low-income countries had more mobile than fixed phones

Mobile growth

	Fixed CAGR 1999-2001	Mobile CAGR 1999-2001	Mobile as % of Fixed (2001)
Argentina	-6.8%	134.7%	86.0%
Botswana	3.3%	16.3%	158.9%
Brazil	14.4%	24.1%	76.8%
Chile	6.0%	32.6%	142.3%
Colombia	3.1%	17.1%	43.3%
Ghana	6.2%	15.1%	80.0%
Hungary	7.4%	37.6%	133.2%
India	2.6%	19.7%	16.5%
Jordan	5.3%	84.6%	113.0%
Malaysia	15.2%	40.4%	150.4%
Mexico	-3.3%	20.4%	148.8%
Morocco	3.6%	79.3%	400.5%
Peru	9.4%	44.8%	76.4%
Philippines	2.3%	33.6%	340.9%
Poland	2.3%	54.8%	88.2%
S. Africa	0.0%	45.0%	185.1%
Thailand	3.9%	36.4%	126.4%
Uganda	5.3%	84.6%	506.6%
Venezuela	4.6%	47.8%	235.3%

Mobile payphones

- ◆ Mobile technology also reaches more users through the use of mobile public payphones
- ◆ Several models
 - ⇒ individual entrepreneurs (e.g. India, Uganda, Nepal)
 - ⇒ mandated in mobile licenses (e.g. South Africa)
 - ⇒ chosen by rural operators as least-cost solution (e.g. Chile)
 - ⇒ separate business managing a network of small entrepreneurs (e.g. Uganda, Bangladesh)
- ◆ Fixed-wireless & truly mobile payphones, stand-alone as well as manned phonestops

Country & mobile operator	Type of payphone
Bangladesh, Grameen Phone	Woman, recruited by Grameen bank and given a micro-finance loan to buy a handset, operating mobile phones as public phones in rural areas
India, Spice Telecom	Mobile operator recruiting small entrepreneurs to operate mobile phones as payphones
South Africa, MTN and Vodacom	Both mobile operators are obligated to provide fixed-wireless public payphones in container
Uganda, MTN	Mobile operator created subdivision MTN Publicom to provide fixed-wireless payphones using a franchise-type arrangement
Colombia	Mobile technology is used for the Compartel program/ Rural telecom fund including payphones
Ecuador, BellSouth	At least 618 payphones--367 of which are in the 2 largest cities, Quito and Guayaquil. They offer public payphones also to be housed to restaurant and shop owners, gas stations and similar establishments.

Limits of mobile miracle

- ✦ **Unviable areas will remain due to**
 - ⇒ topography (e.g. mountains) and socio-economics (e.g. very low pop. density and low affordability) and other difficulties e.g. lack of power supply, security concerns
- ✦ **Mobile is not supporting fax document transfer**
- ✦ **Mobile might be barrier for Internet take-up later**
 - ⇒ Unlikely GPRS & 3G business case in rural areas
 - ⇒ Here single installations (fixed or satellite) could be more economic

Key lessons & issues for regulators

- ✦ *Liberalisation & Competition in the mobile sector* was the prerequisite to its growth (again) and overtaking fixed services
- ✦ Still need to liberalise fixed services, and any other technologies e.g. satellite, fixed-wireless, VoIP etc.
- ✦ Develop towards technology neutral regulation, in line with latest EU trends
- ✦ E.g. technology neutral licences, operators are free to use mix of technology, makes them more efficient and allows to serve customer up to limit of affordability (e.g. SNO in Uganda and South Africa)

UA and US regulation to include mobile operators

- ◆ Will become more important with network convergence and technology neutral regulation
- ◆ Regulators can include payphone and rural roll-out obligations and contributions to UA and rural funds
- ◆ However, balance of obligations and incentives/flexibility should be right
- ◆ Mobile operators allowed to bid for subsidies on UA funds, allowed to operate public payphones

Tariff regulation & interconnection

- ✦ Mobile tariffs usually not regulated, should that change? No, sufficient competition. But re-balancing fixed services according to cost more urgent.
- ✦ Calling Party Pay best policy
- ✦ Develop cost-based interconnection principles also for mobile