

Universal Access: An international comparison

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The views expressed in this paper are those of the author and do not necessarily reflect the opinions of the ITU or its Membership. Dr Kelly can be contacted by e-mail at Tim.Kelly@itu.int



Universal Access: An international comparison

- **What is Universal Service / Universal Access?**
- **The “myth” of subsidised access**
- **Defining affordability**
- **Pricing strategies**
 - ⇒ **For universal access**
 - ⇒ **For universal service**
- **Targets for the year 2010**



Universal access

- **Availability ...**
- **Accessibility ...**
- **Affordability ...**

of basic telephone service

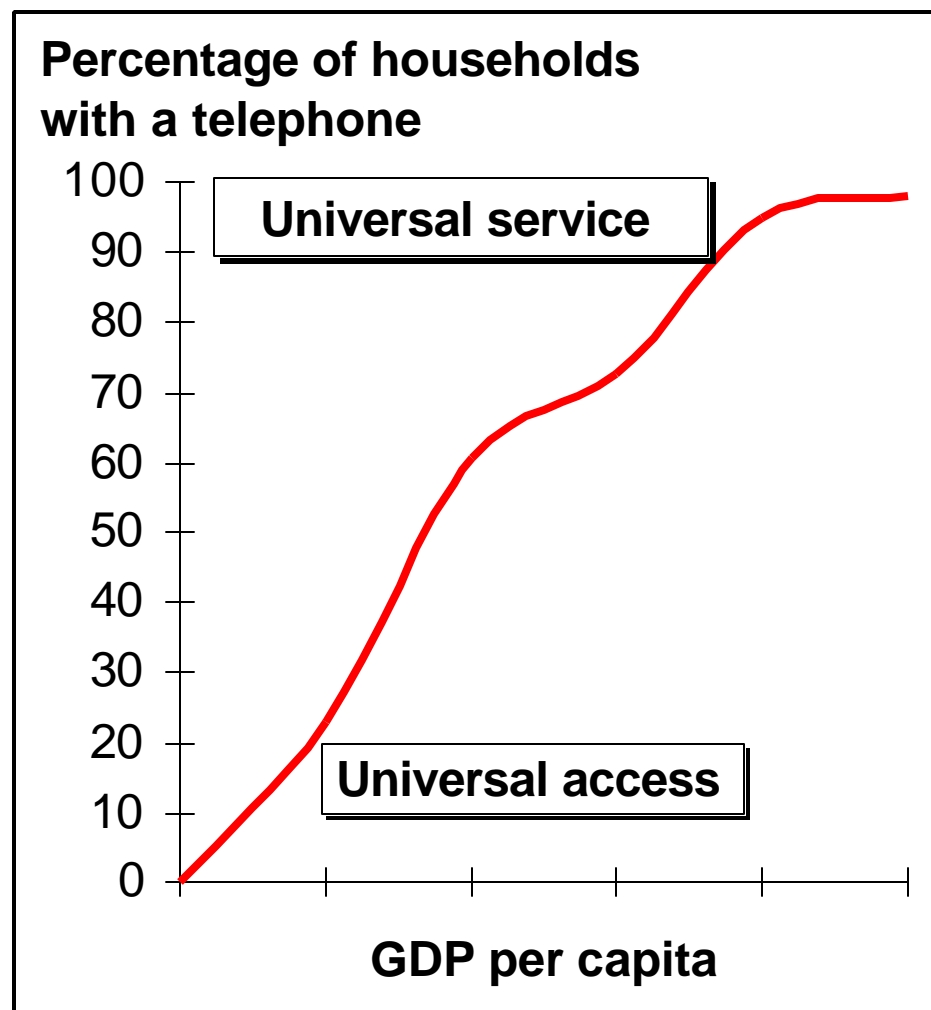
“to promote the extension of the benefits of the new telecommunication technologies to all the world’s inhabitants”

ITU Constitution, Article 1



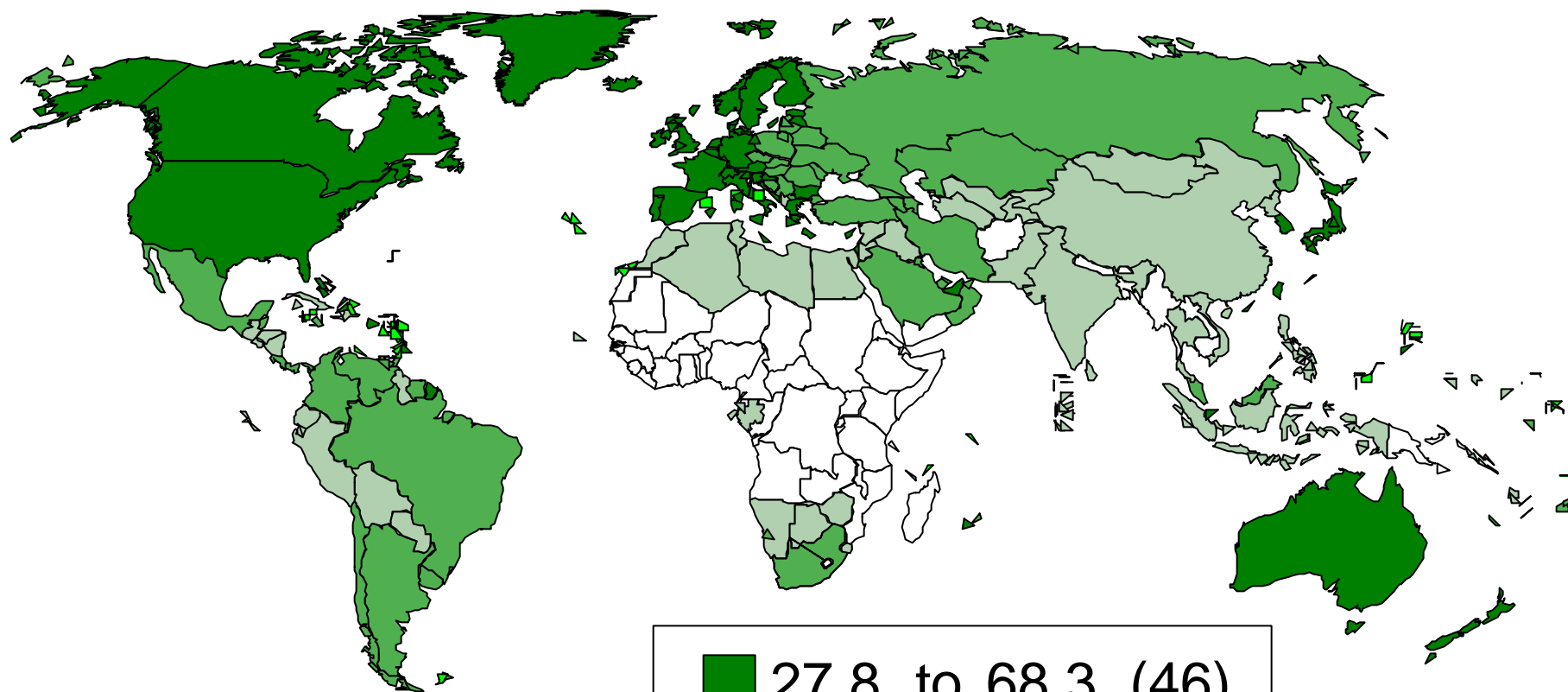
Universal access and Universal service





- **Universal service:** telephone in every home
- **Universal access:** telephone within reasonable distance for everyone





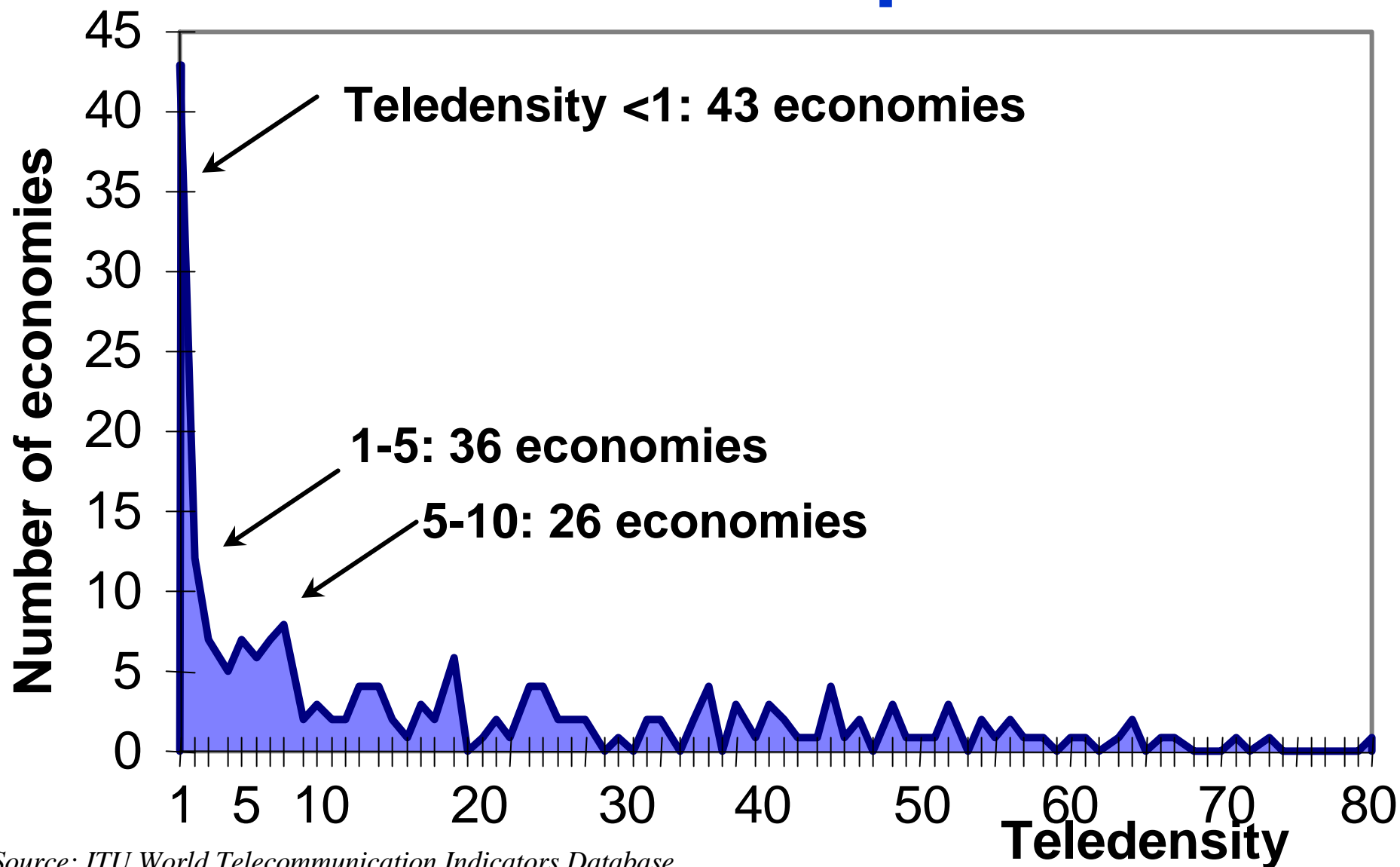
Teledensity disparities



	27.8 to 68.3 (46)
	8.3 to 27.8 (46)
	1.3 to 8.3 (47)
	0 to 1.3 (48)

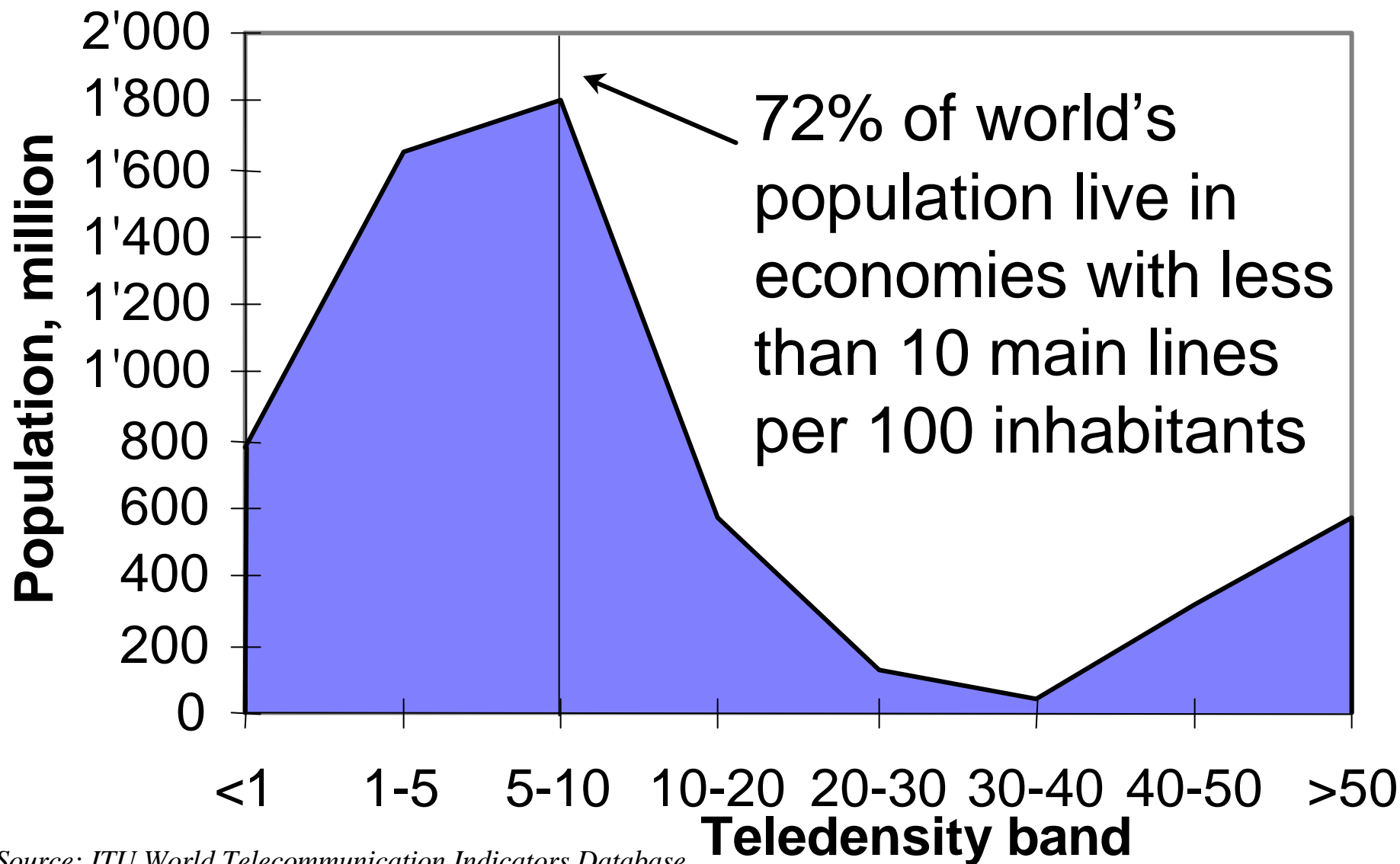


The nature of the problem



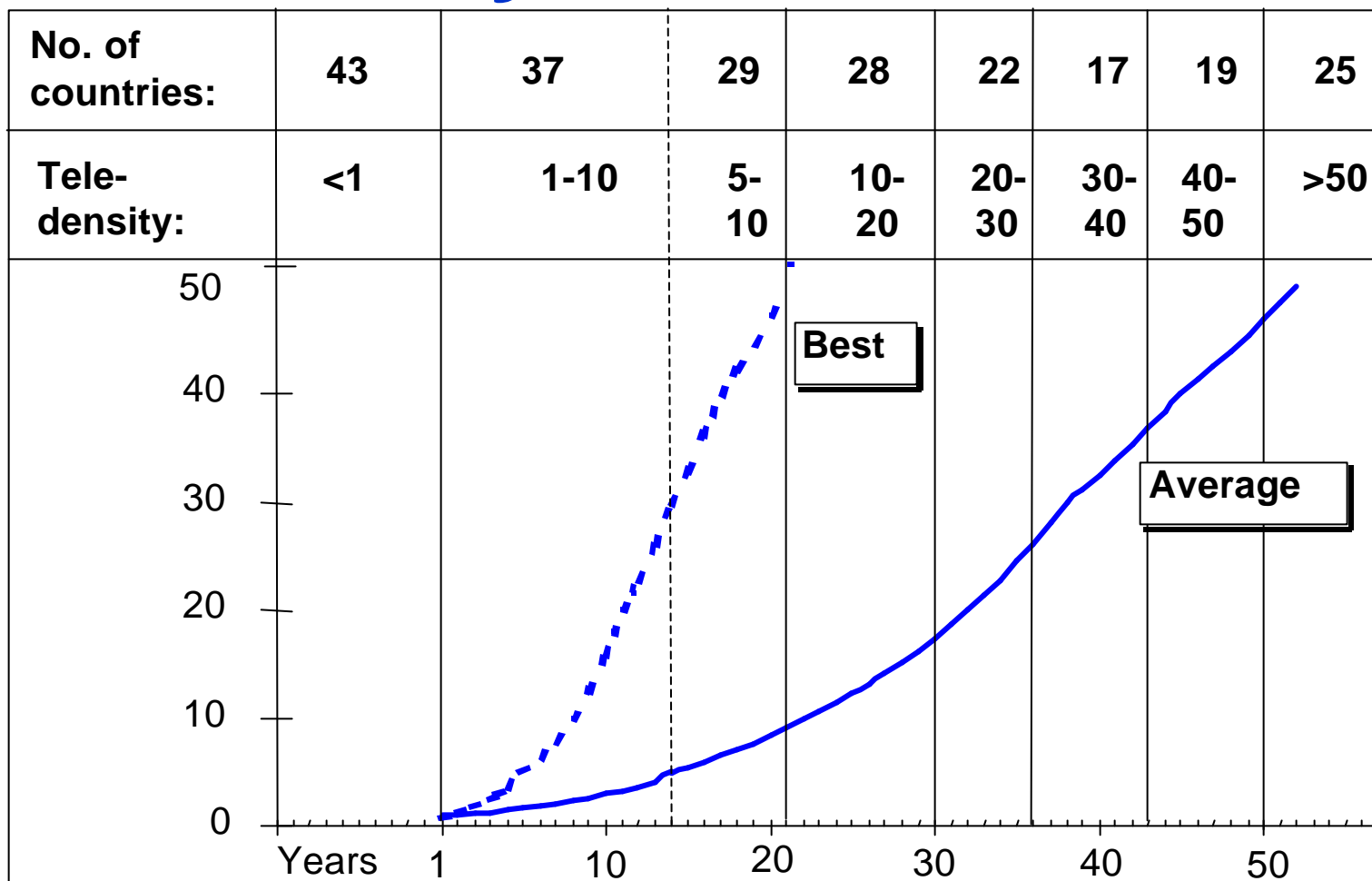


The scale of the problem



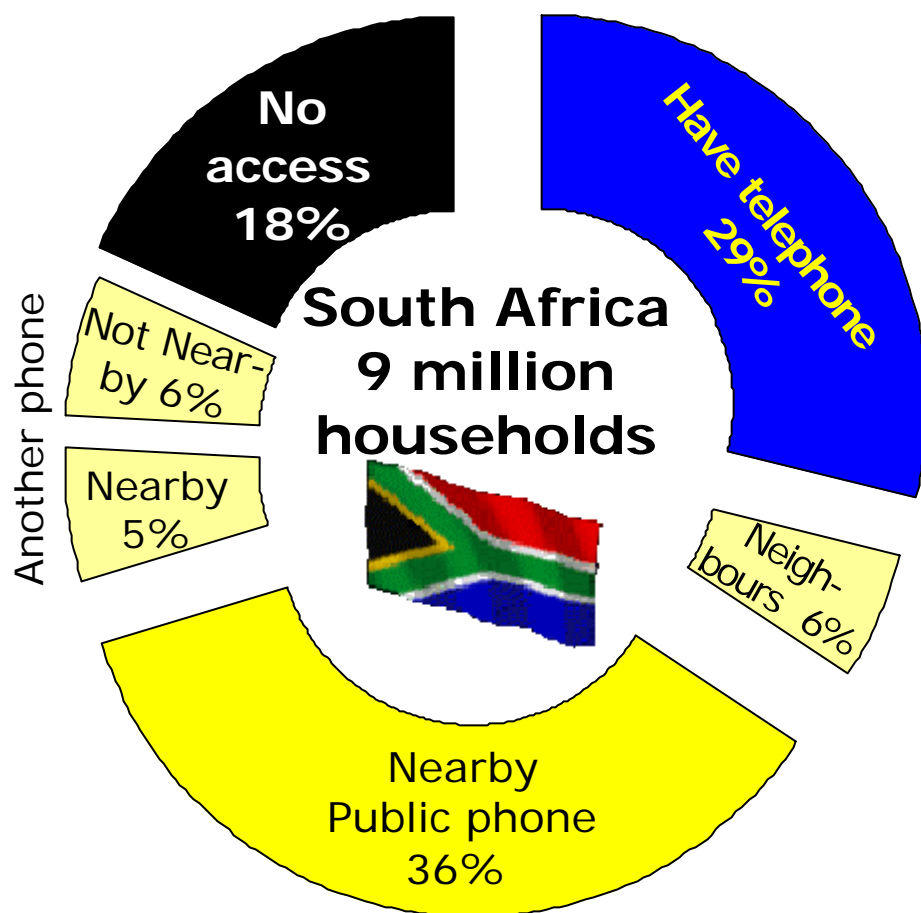


Teledensity transition





Measures of Accessibility: SA

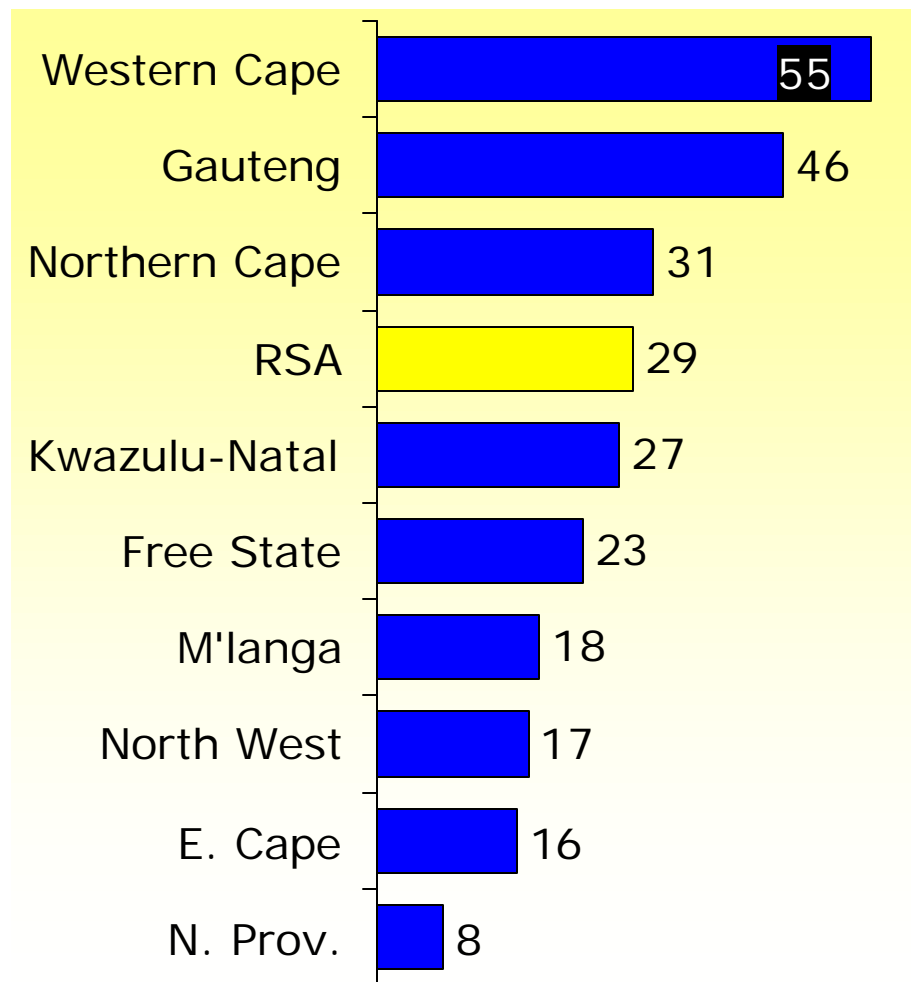


Teledensity:	10.7
Cellular density:	3.7
Total telephone density:	14.4
Household telephone penetration:	29%
Universal access penetration (% of households with access to telephone):	82%

Source: Statistics South Africa.
<<http://www.statssa.gov.za/>>



Measures of Accessibility : by province



South Africa . % of households with a telephone, By province, 1996

Source: Statistics South Africa.



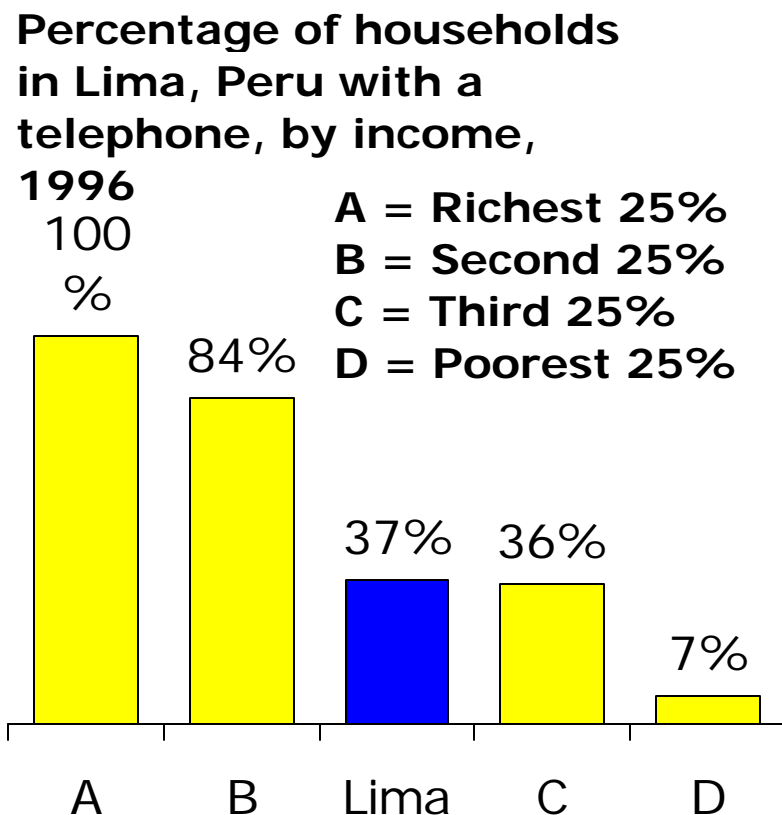
The “myth” of subsidised access

- It is commonly argued that telephone access should be priced at a low rate so that as many people as possible can afford it
- **But,**
 - ⇒ this may result in ‘subsidies’ from non-telephone users to telephone owners, who are typically business, government and richest 1% of population
 - ⇒ if revenues do not cover costs, then the waiting list will grow



“Socially desirable” pricing

- Rates are kept artificially low
- Affordable price, maybe < break-even
- Initial group of telephone users are clustered in the largest city and are not poor
- May not generate enough revenue for network expansion



Source: OSIPTEL.



Defining affordability

- **Relative affordability, e.g., <5 per cent of average family income**
 - ⇒ **BUT, initial telephone users are not necessarily “average”**
 - ⇒ **In low income countries, costs for network installation may be high, but incomes are low**
- **“Best practice” cost of operating a network**
 - ⇒ **Methodology must be refined for residential and business users**
 - ⇒ **Costs must be split between one-time & recurring**



Affordability measures in SA

Affordability levels by differing costs of telephony per month*

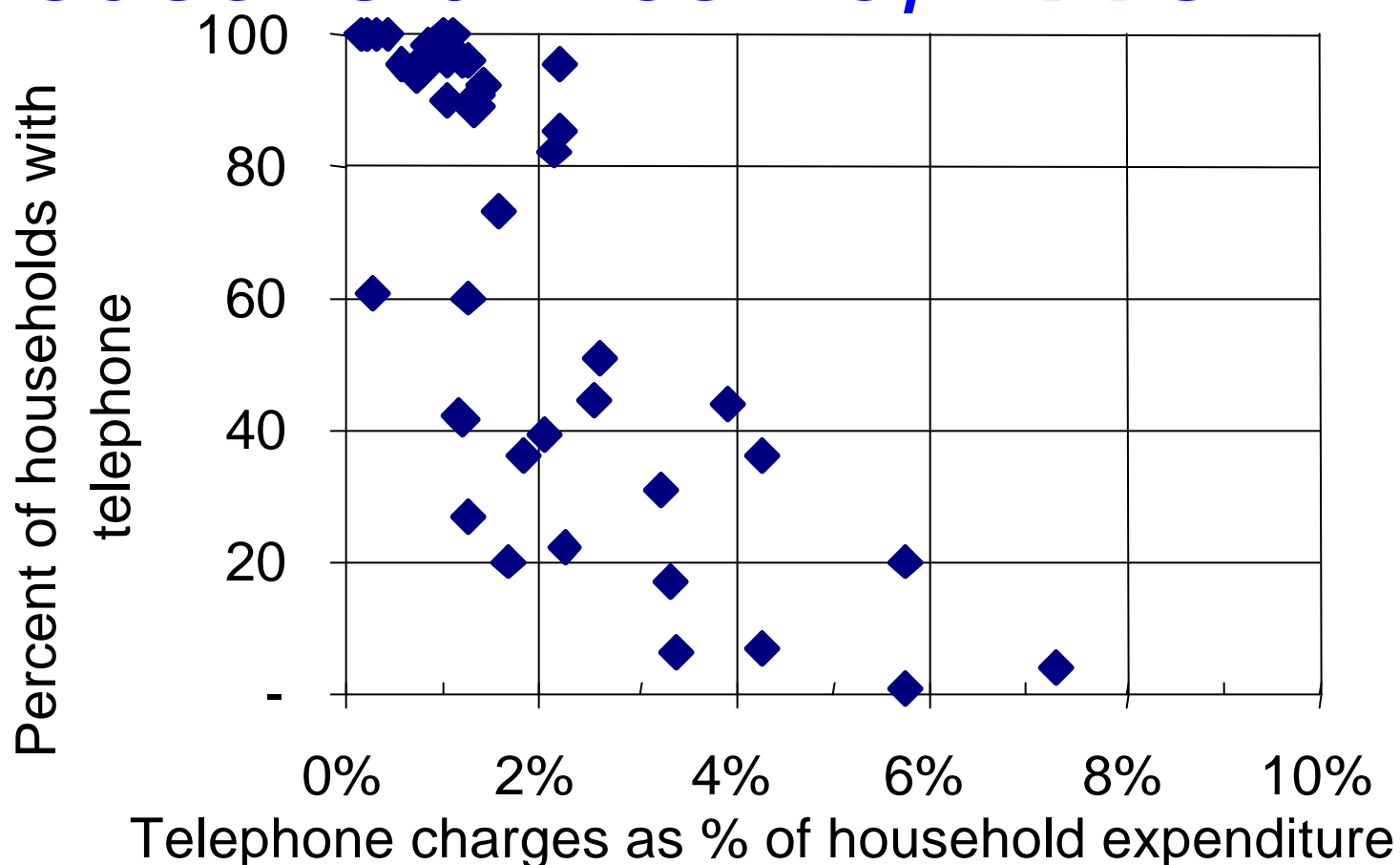
	R30	R40	R50	R60	R70
H/h not able to afford more than 2% on income spent on telephony	44%	53%	60%	65%	69%
	3 829	4 648	5 215	5 642	6 017
H/h not able to afford more than 3% of income spent on telephony	30%	40%	48%	53%	58%
	2 616	3 445	4 142	4 648	5 067

* All estimates are done in 1997 Rands

Table from the DRA Development Document Defining the Categories of Needy People



Telephone charges relative to household income, 1995



Note: The annual telephone charges data are a basket based on one tenth of the installation charge, annual subscription in the largest local network, 700 local calls and 130 long-distance calls. Taxes are included.

Source: *TU World Telecommunication Development Report 1998: Universal Access.*



Methodology for determining average and best practice costs

Establish average operating costs for telephone network	US\$ 200 - 400 per subscriber per year
Derive an average tariff	US\$ 64 - 122 per year
Determine how many households can afford service	Where 5% of household income > US\$ 1'340 - 3'200
Choose a policy for families that cannot afford service	Financial assistance, widespread payphones, etc.

Average & best practice residential costs

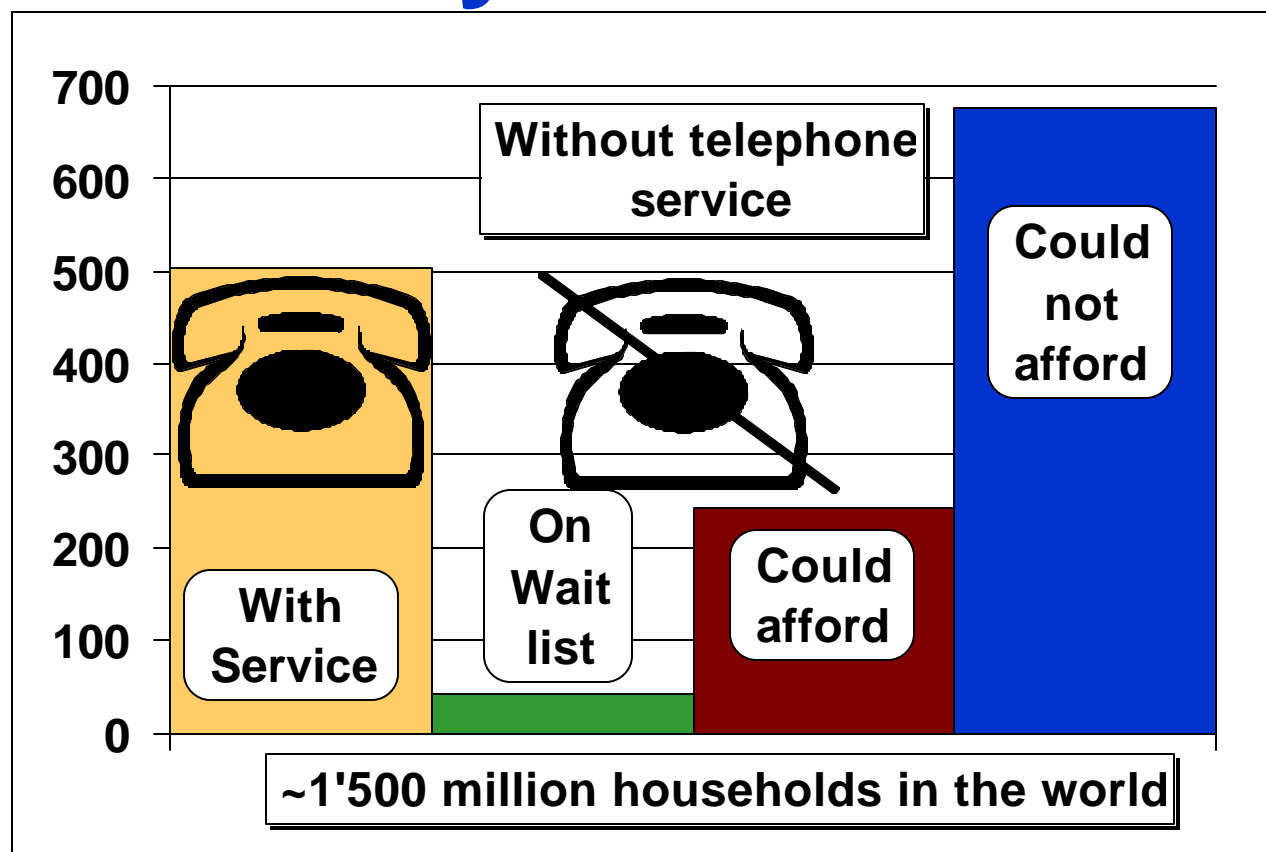
	Average	Median	Best practice
Annual operating cost per line	380	300	200
Annual subscription ¹	122	96	64
Annual connection fee ²	39	7	3
Total annual charge for telephone service	160	103	67
Annual income required to afford service ³	5'432	4'320	3'480

Note: Based on study of 10 operators from different regions and income groups. "Best practice" is the lowest
 1. 40% of operating costs discounted by 20 per cent (covered by higher business subscription charge).
 2. Actual connection charge, divided by seven. 3. Assuming telephone charges represent 5% of income.

Source: *ITU World Telecommunication Development Report, 1998: Universal Access.*



Global measures of Affordability





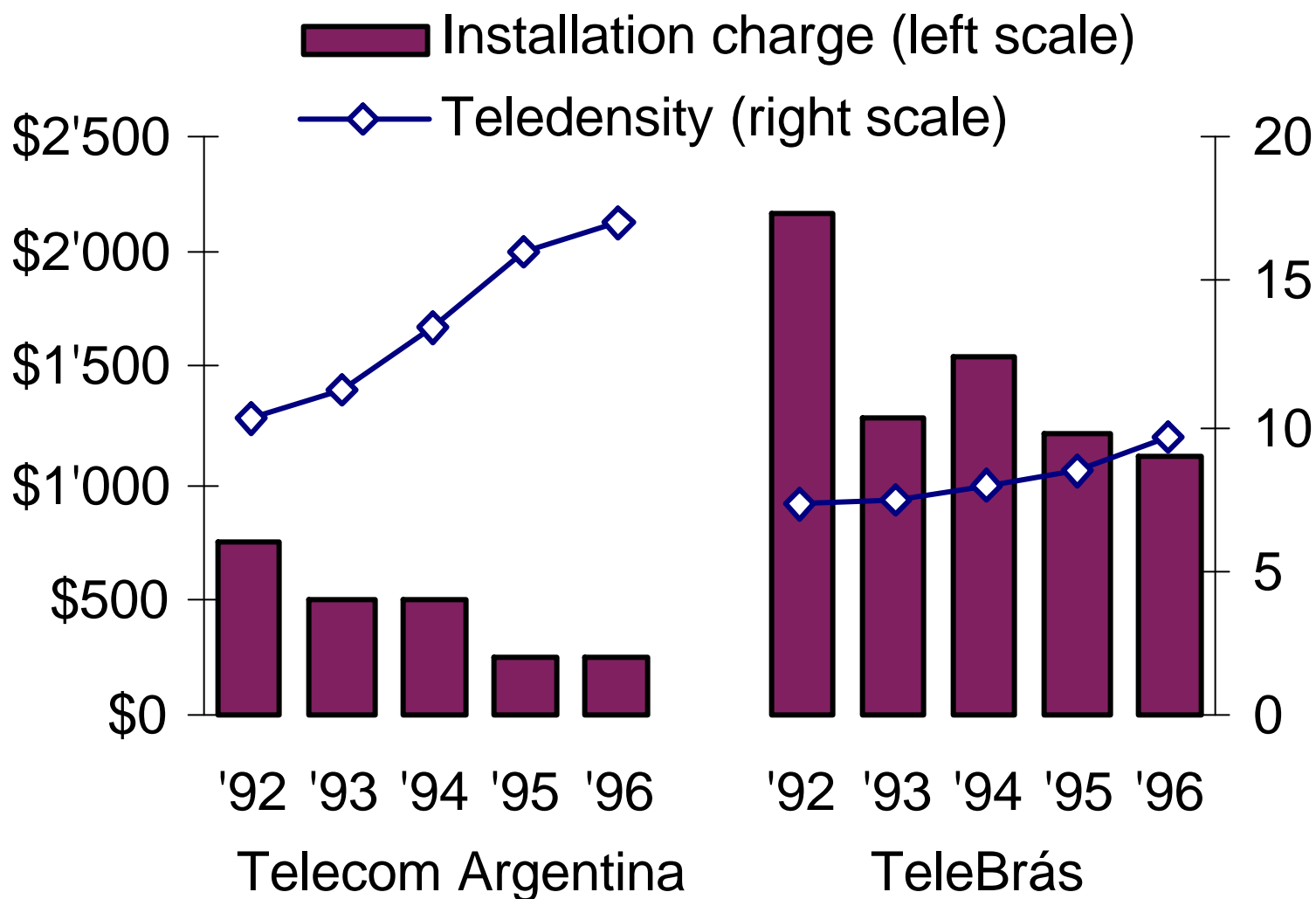
Pricing strategies for extending Universal Access

- Installation charges initially high, but coming down over time
- Residential subscription charges should reflect cost of servicing line (typically US\$5-10 per month)
- Set separate charges for residential and business subscribers
- Lower prices for payphone or community telephone access
- Tariff options, e.g., for low-volume users



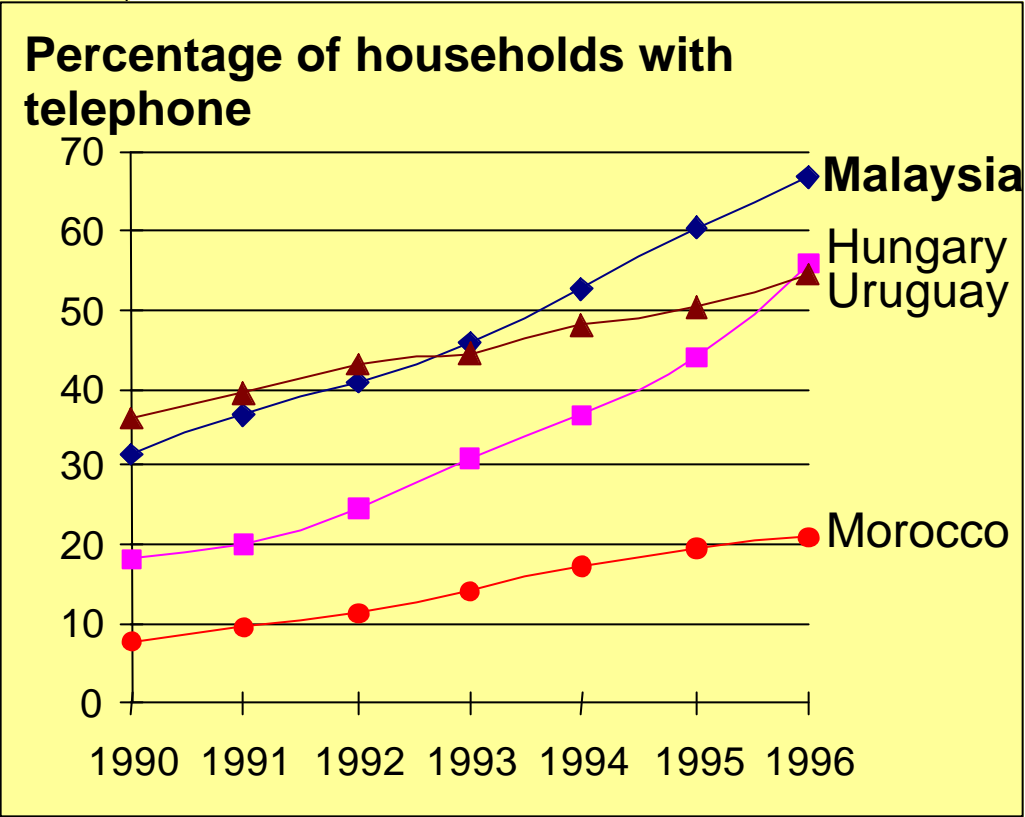
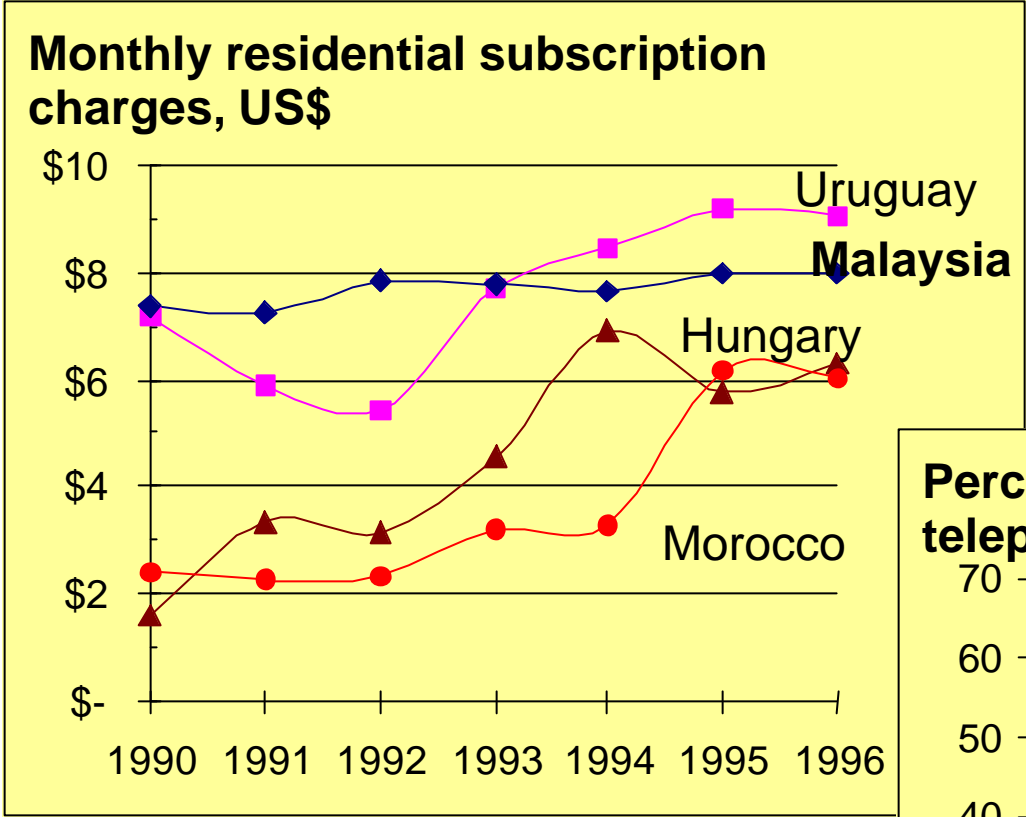
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Installation charges and teledensity in Argentina and Brazil, US\$



Source: *ITU World Telecommunication Development Report, 1998: Universal Access.*

Higher monthly subscription charges ...



... lead to faster growth rates

Source: ITU World Telecommunication Development Report, 1998: Universal Access.



Demand-side measures for extending Universal Access

● Tariff cross-subsidies

⇒ Traditional method, but may not benefit those for which it is intended

● Universal Service Fund

⇒ Targeted assistance for special needs (e.g., rural areas, disabled), but may create administrative burden

● Direct Financial Assistance to users

⇒ Targeted assistance using non-telecom-specific criteria, but may be difficult to control abuses

● Community-wide initiatives

⇒ e.g., Payphone in every village, community



Supply-side measures for extending Universal Access

● Market liberalisation

⇒e.g., allowing new suppliers to enter market, liberalising equipment market, giving financial autonomy to PTO, encouraging foreign investment, Build/Transfer/Operate concessions

● Payphone liberalisation

⇒e.g., permitting private installation and ownership of payphones, community telephone shops, telecentres

● Technical solutions

⇒e.g., Mobile cellular, Wireless Local Loop, GMPCS, combined cable TV/telephony



Pricing strategies to achieve Universal Service

- **Targeted tariff options**

⇒ e.g., for low-volume users, the elderly, the disabled, foreign migrants

- **Prepaid calling cards**

⇒ for fixed-line and mobile networks

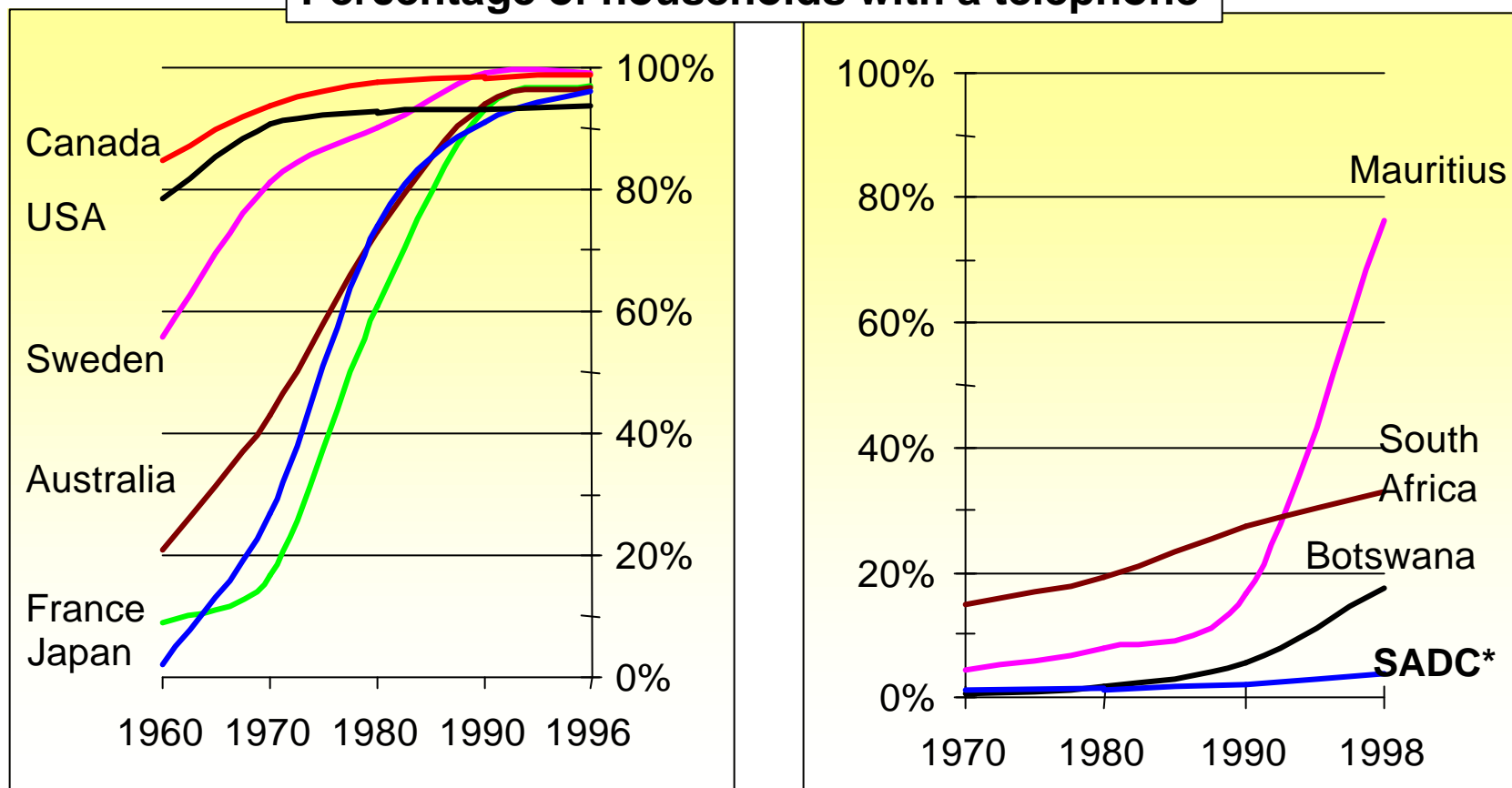
- **Support for incoming calls**

⇒ e.g., to allow families to receive calls from family members working abroad, for instance through voicemail, email, telecentres, call-turnaround, foreign sales of calling cards etc



Achieving Universal service

Percentage of households with a telephone





Universal Access: An international comparison

Achieving Universal service

% of house- Year DEVELOPED holds with 90% ECONOMIES telephone reached

1	Canada	98.7	1971
2	United States	93.9	1970
3	Australia	96.8	1986
4	Japan	96.1 †	1989
5	New Zealand	96.0	1976
6	Austria	90.0	1995
7	Belgium	92.0 †	1994
8	Denmark	‡	1982
9	Finland	90.0	1987
10	France	97.0	1985
11	Germany	94.7 †	1995
12	Greece	98.1 †	1993
13	Italy	97.5	1992
14	Luxembourg	‡	1989
15	Netherlands	96.5	1990
16	Spain	94.7 †	1994
17	Sweden	‡	1975
18	UK	91.1	1994

% of house- Year DEVELOPING holds with 90% ECONOMIES telephone reached

19	Bahrain	‡	1992
20	Brunei	‡	1993
21	Cyprus	‡	1990
22	Hongkong	‡	1986
23	Israel	95.0	1989
24	Korea (Rep.)	95.2	1990
25	Kuwait	‡	1993
26	Macau	‡	1992
27	Malta	‡	1987
28	Qatar	‡	1983
29	Singapore	‡	1983
30	Taiwan-China	‡	1990
31	UAE	93.5 †	1995

Note: % of households with telephone obtained from census surveys and refer to year 1996. † Residential telephone lines per 100 households. ‡ Residential telephone lines per 100 households is greater than 100 due to 2nd telephone lines.

Source: *ITU World Telecommunication Development Report 1998*.



Universal Access: An international comparison

Year 2010 Goals

Goal: Provide reasonable access to telecommunications for all of humanity by the year 2010

	Teledensity		Household telephone penetration		Payphones per 1'000 people	
	1996	2010	1996	2010	1996	2010
WORLD	12.80		34.4		1.55	
Developing	5.07	10	16.3	>50	0.84	2
Low income	2.44	5	8.5	>20	0.57	1
excluding China	1.22		4.1		0.21	