

What do regulators and operators need to know about demand?

Executive Course on Telecom Reform
Singapore, 11 June 2008

Harsha de Silva
Lead Economist, LIRNE*asia*



By 2014, the number of people who disperse and adhere to their welfare increased."

Outside home market sales 0% → 35%



Plan of presentation

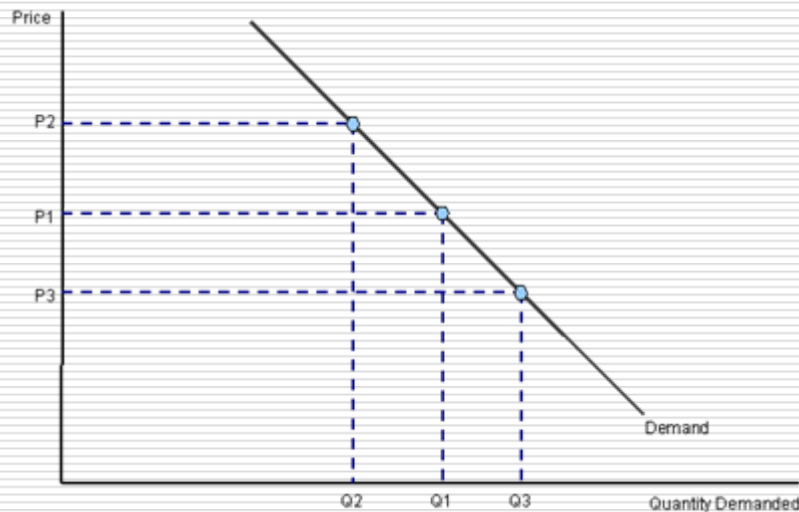
- Some technical issues on demand
- Understanding demand
 - Market dynamics
 - Market failures
 - Prioritizing expenditure
- To think about...



What is demand

□ Demand?

- Quantity of service willing and able to purchase at a given price in a given time period
- A liner demand curve, for illustration only



Price quantity relationship

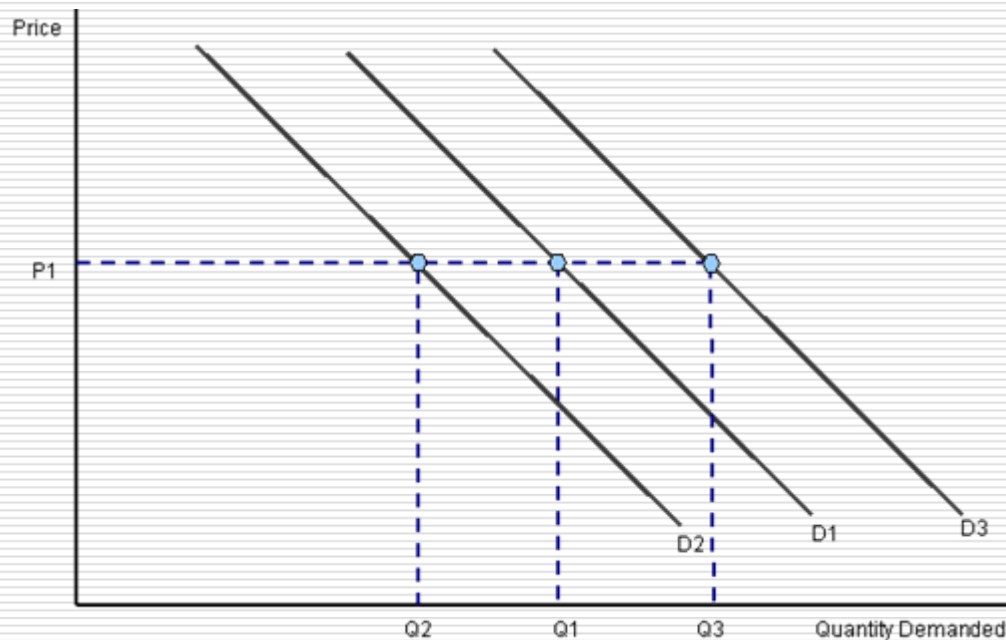
Say, price falls for service A

- Income effect
 - Some of the resulting increase in real income is used to buy more of service A
- Substitution effect
 - Some switching from alternative services to service A



Changes in demand

- Quantity demanded vs. demand
 - Shifting along the demand curve
 - Shifting demand



Conditions of demand

- $D = f (P, P_n \dots P_{n-1}, Y, T, \dots)$
 - P = Price of the service
 - $P_n \dots P_{n-1}$ = Prices of other services
 - Prices of substitutes and complements
 - Y = Consumer incomes
 - Level and distribution of income
 - T = Tastes and preferences of consumers



Variants of demand

- Latent demand
 - Willingness
 - But, no ability
- Derived demand



Demand for ICT

- Define ICT service
 - Broad
 - Narrow
- What **exactly** is the service?
 - Is there clarity?
- Is there really a demand for telephones or for the Internet?
 - Demand for information? Fish prices?
- Derived demand; no change in fundamentals



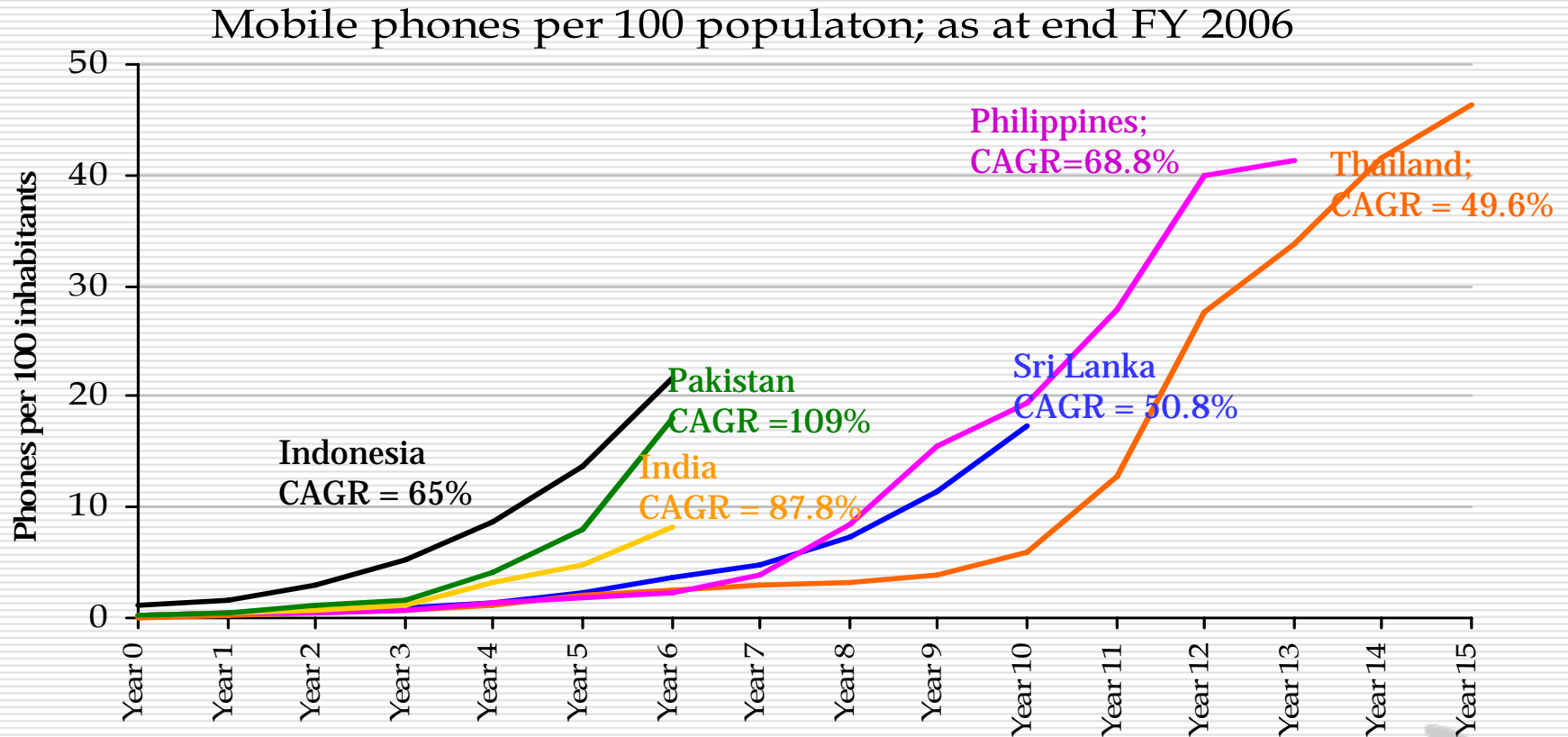
Understanding demand from a market dynamics context

- Market dynamics
 - Then → now
- Market failures
 - Policy formulation
 - Universal service obligations
 - ADC
 - Government failures
- Prioritizing expenditure
 - “Telecentres, full of computers but without customers ... A common question in many parts of the world”; Telecentre.Org, December 2007



Market dynamics; mobile telephony

Then → now



Understanding the user

example

- LIRNEasia Teleuse@BOP 2
 - Pakistan, India, Sri Lanka, Philippines, Thailand
- Research questions
 - Understand usage and attitudes, perceptions on costs, benefits
 - Identify triggers and barriers to maximize use
 - Understand differences among countries
- Target group
 - Males and females, urban and rural, 18-60 years, at BOP
 - SEC classification of D&E



Teleuse@BOP methods

Quantitative

Qualitative

Random sample 8,660 F-to-F interviews; in 5 countries
50% diary

6 Focus Group Discussions per country (30)

Final output



Findings on demand

- Usage and behaviour patterns
 - Fixed, mobile, Internet
 - Strategies at the BOP
 - Substitutes and compliments
- Ownership and potential ownership patterns
 - Income and affordability
 - Barriers
- Perceptions on benefits [and costs]
 - Tastes and preferences
- How to increase greater ownership; usage
 - All stakeholders

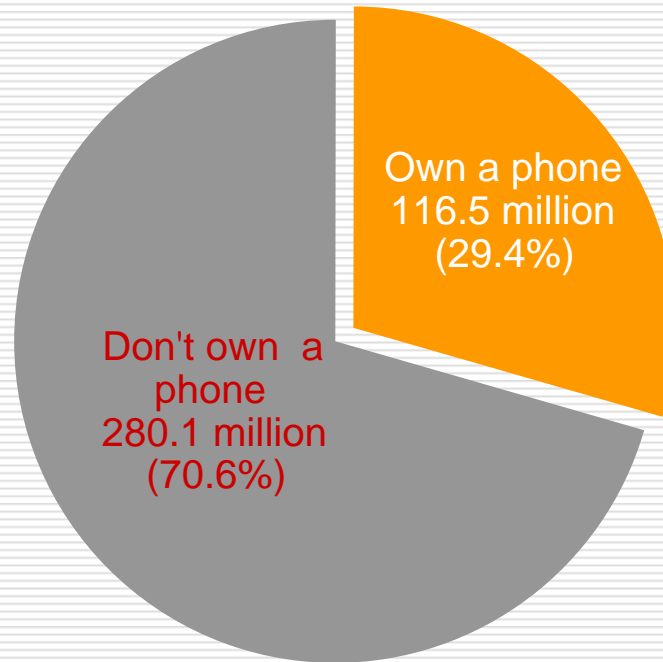


Overall access is very high

	South Asia			South East Asia	
	Pakistan	India	Sri Lanka	Phils.	Thailand
Accessibility <i>(used a phone in the preceding 3 months)</i>	98%	94%	92%	93%	95%



But, less than a third own a phone



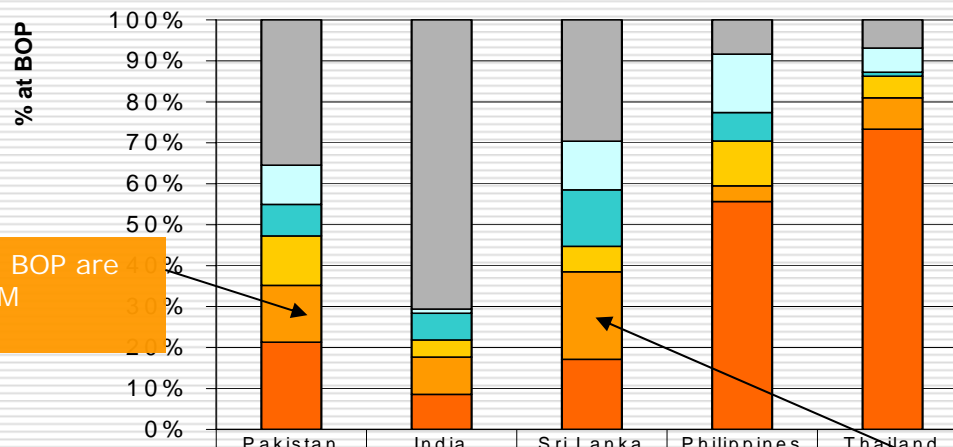
	Pakistan	India	Sri Lanka	Philippines	Thailand
Don't own a phone	63.6%	80.7%	59.0%	38.0%	18.0%



Sharing and commercial purchase

- S Asia BOP mainly public phones; SE Asia mobiles

Most frequently used mode



"Fixed" phones at S Asia BOP are mostly CDMA; Mimic GSM features.

Also note that 12% in PK, 4% in IN & 6% in LK use the mobile of another household member



Economic benefits from access

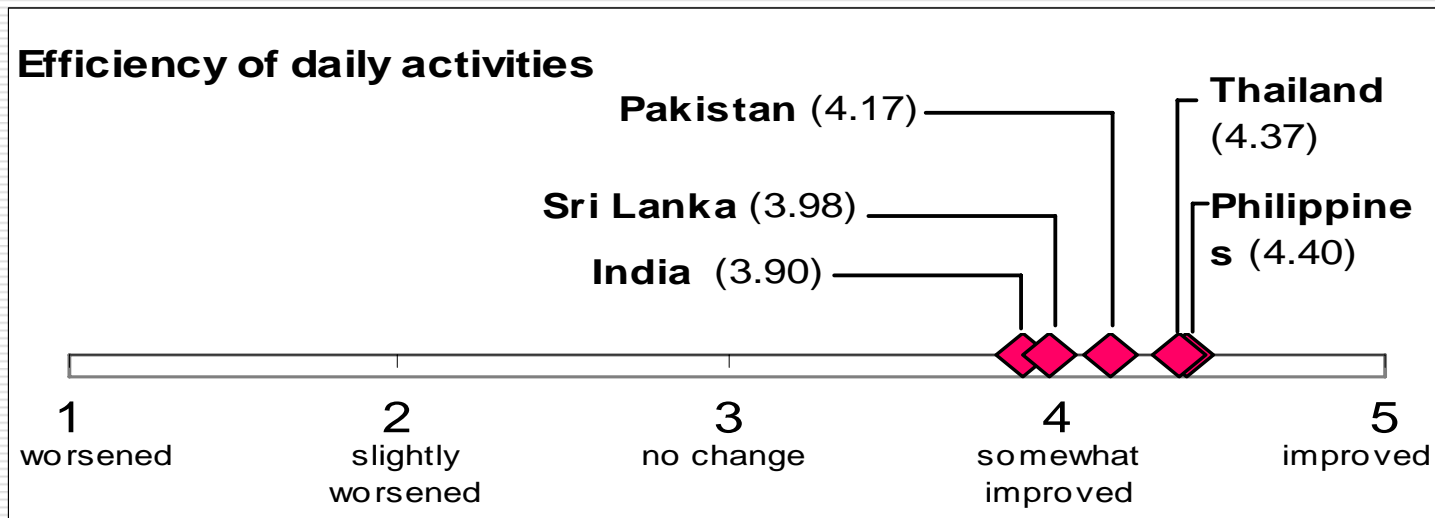
□ Indirect

- Macro impact very high
 - Roeller and Waverman (2001) and others
- Use of a phone by an auto-rickshaw driver
- Obtaining agricultural price info by farmer
- Cost savings made by making a call instead of bus ride to town
 - Jensen (2007) on Kerala fishermen
 - Aker (2008) on Niger grain farmers



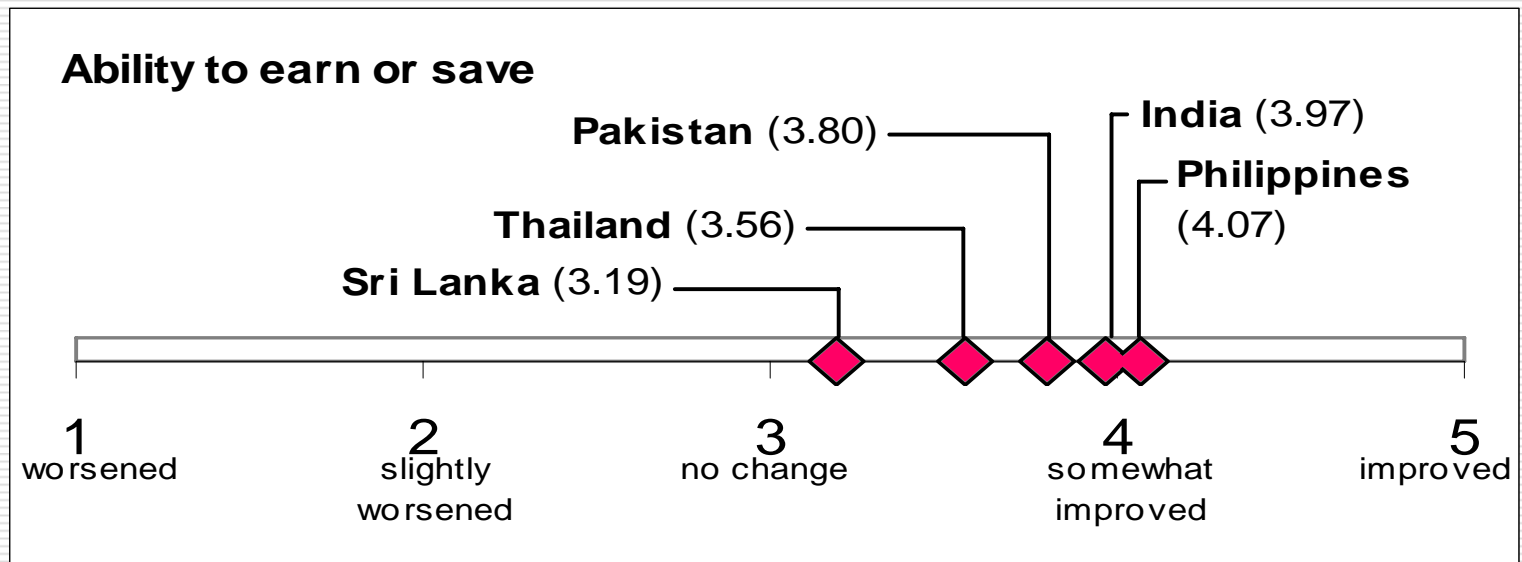
Efficiency of daily activities

- BOP sees the benefit



Efficiency → income benefit?

- BOP does **not** see the benefit?
 - Except for in India, mean responses on efficiency of daily activities vs. ability to earn or save are significantly different at a 95 percent confidence interval



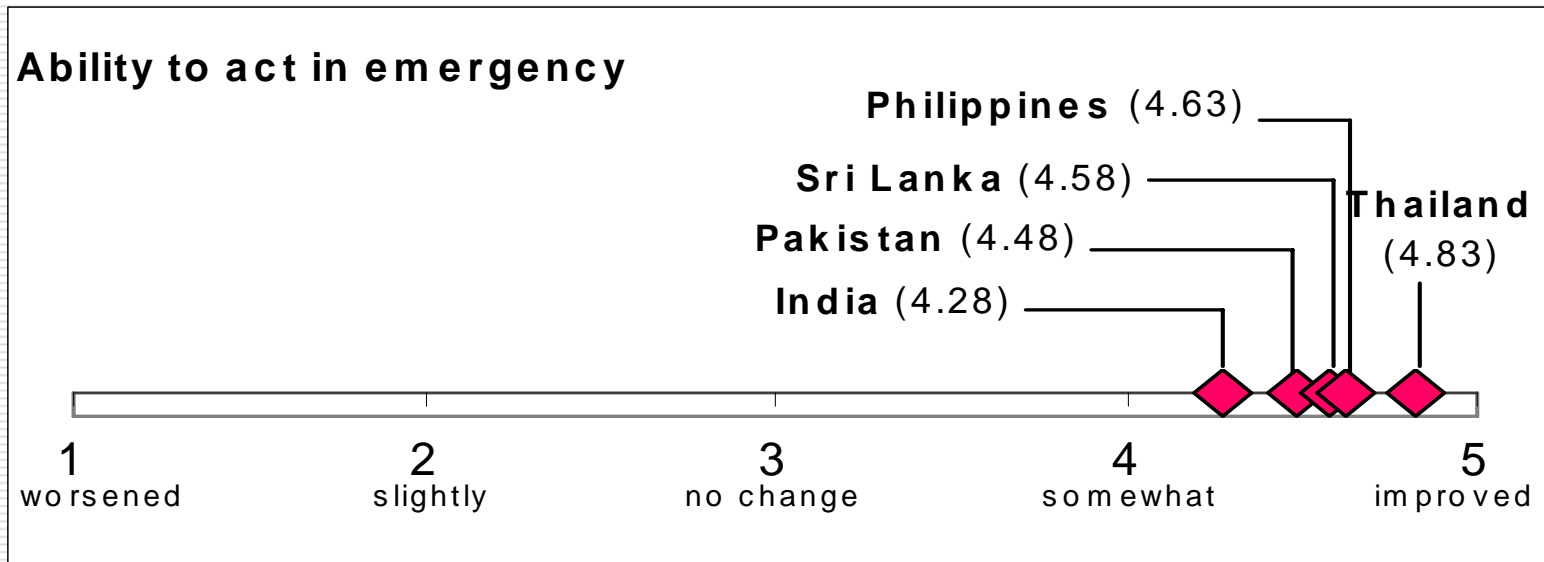
Possible reasons...

- ❑ Do people actually make that connection?
 - Some do; services, trade, self employed...
- ❑ May see gains in saving travel time and cost but if the cost of using the telephone is high
 - Maybe no net benefit (RPP in LK?)
- ❑ Link may exist, but
 - Little business use; people prefer face-to-face interactions?
 - Not enough content?
 - Perception "time isn't money"
- ❑ Blurred distinction between economic transactions and social communications
 - Some 'Keep-in-touch' calls might have potential economic benefits
- ❑ Issues of 'trust'



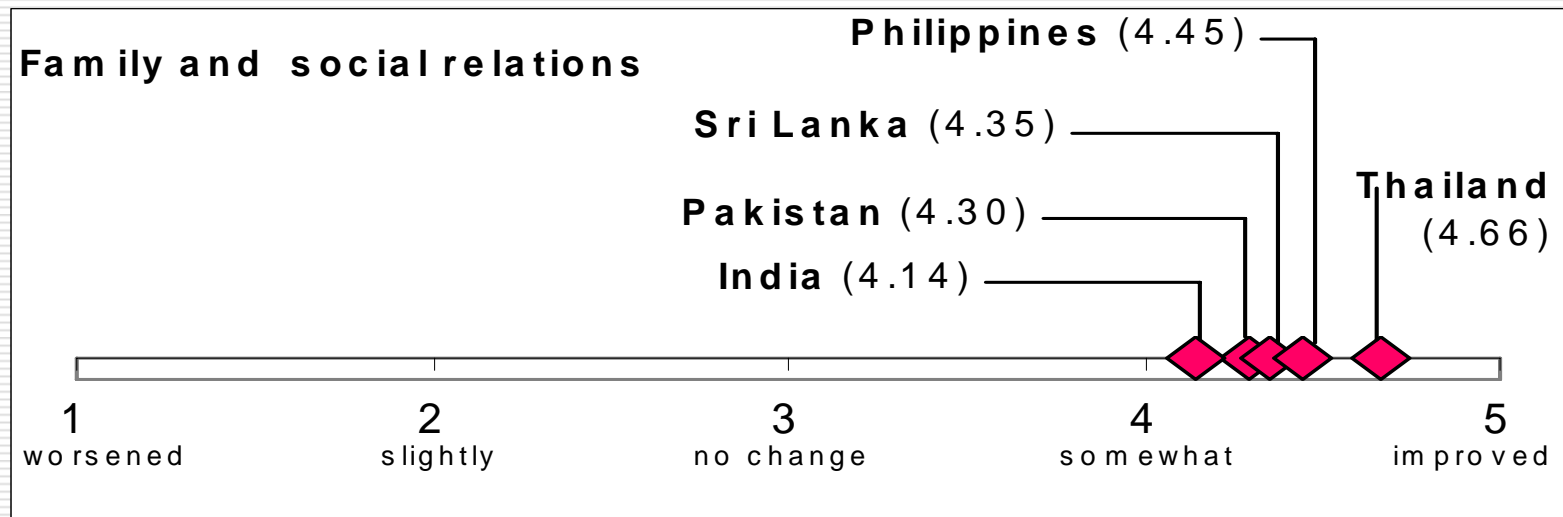
Sense of security is main benefit

- Ability to act in an emergency is key



Social networking is important

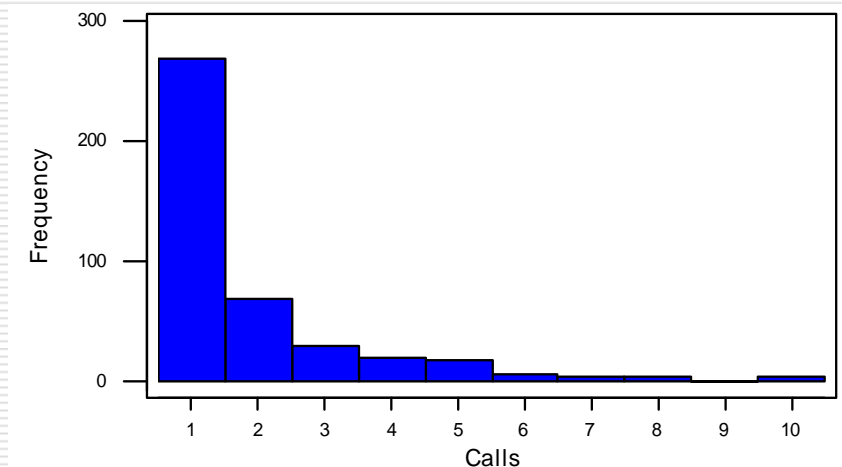
- Keeping in touch with family and friends is a significant benefit



Price elasticity of demand

example

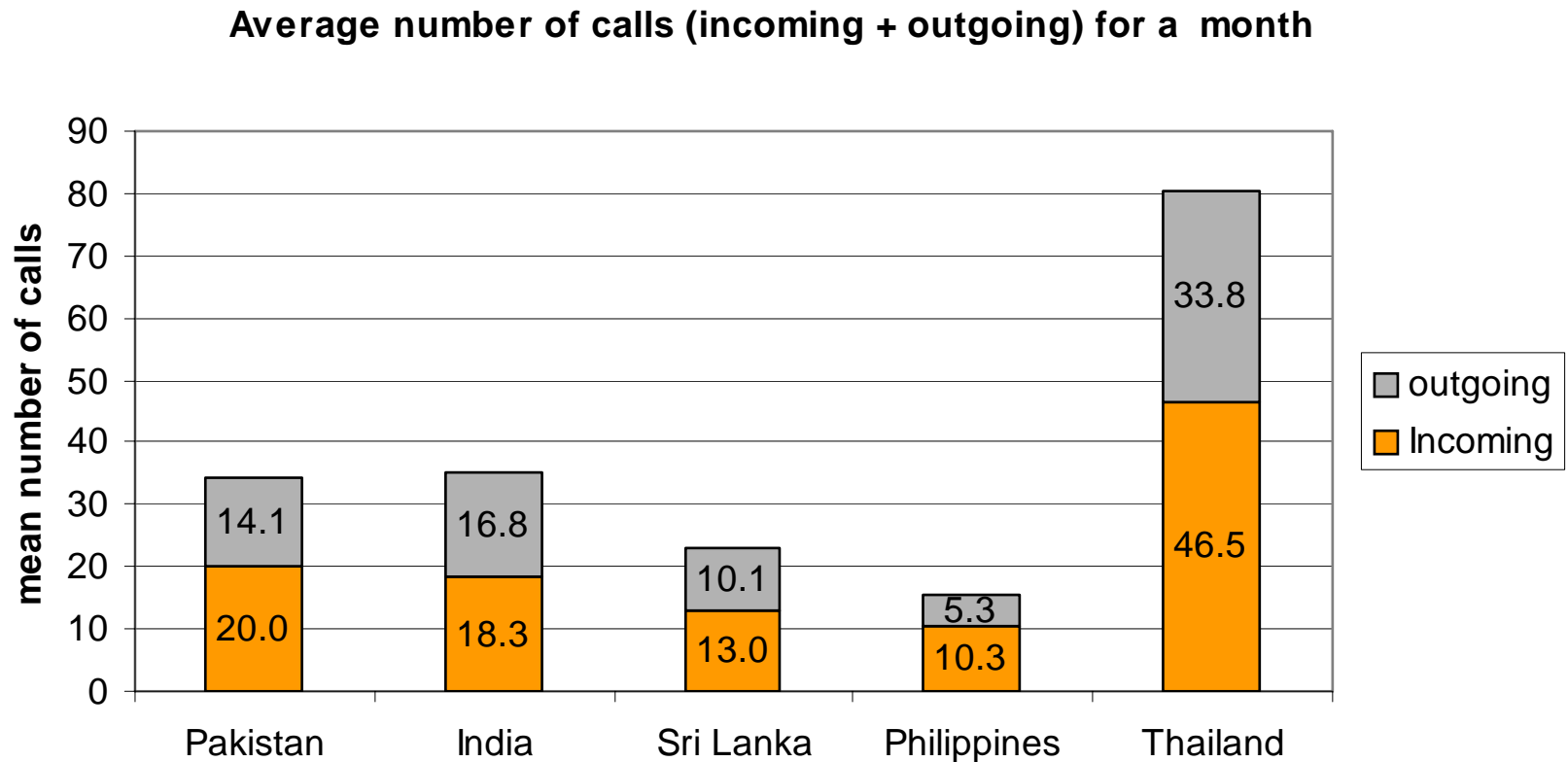
- For “all” and “keep in touch” calls in Sri Lanka
 - Poisson distribution



- Use a Generalized Linear Model
- Relatively inelastic at the BOP
 - Given tariff LKR 7/min; -0.15



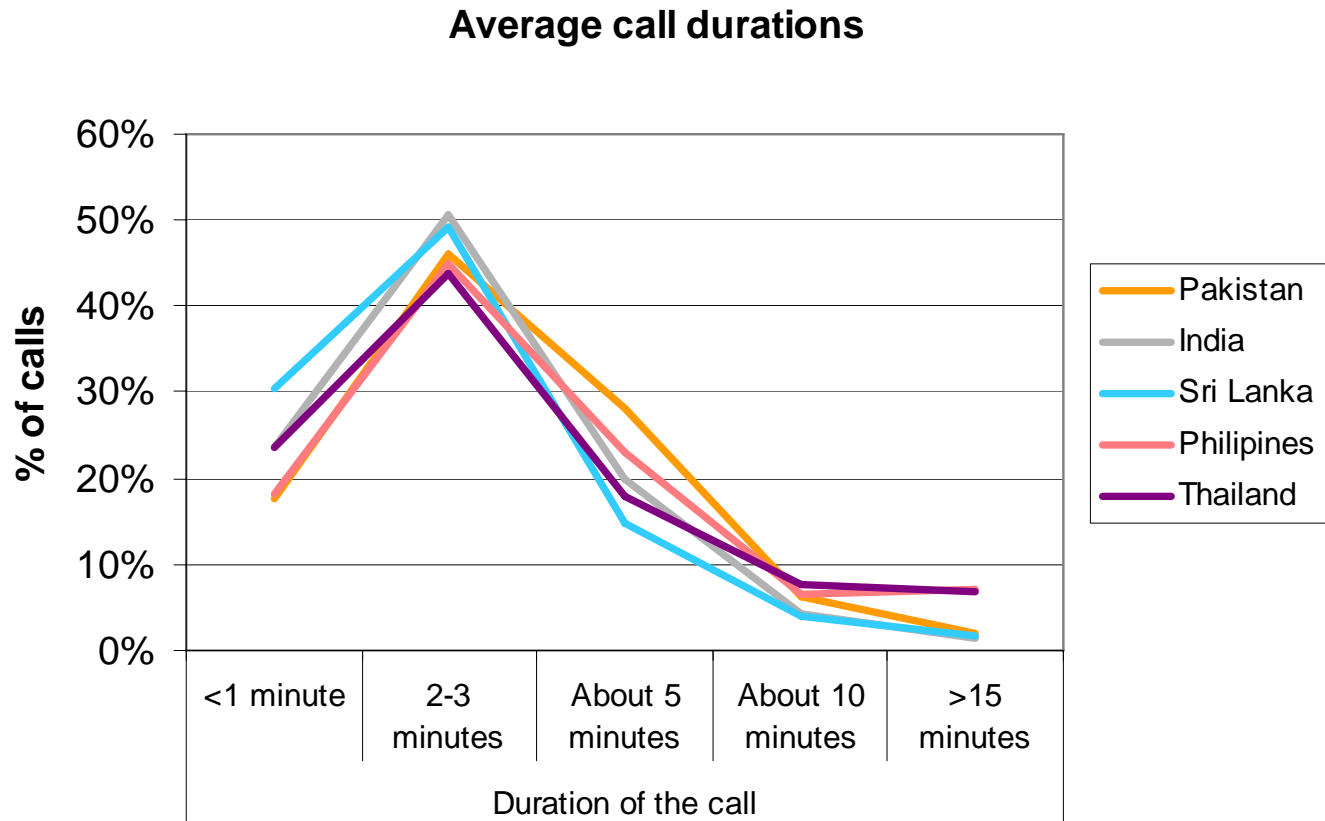
One call a day at the BOP



Source: Diary



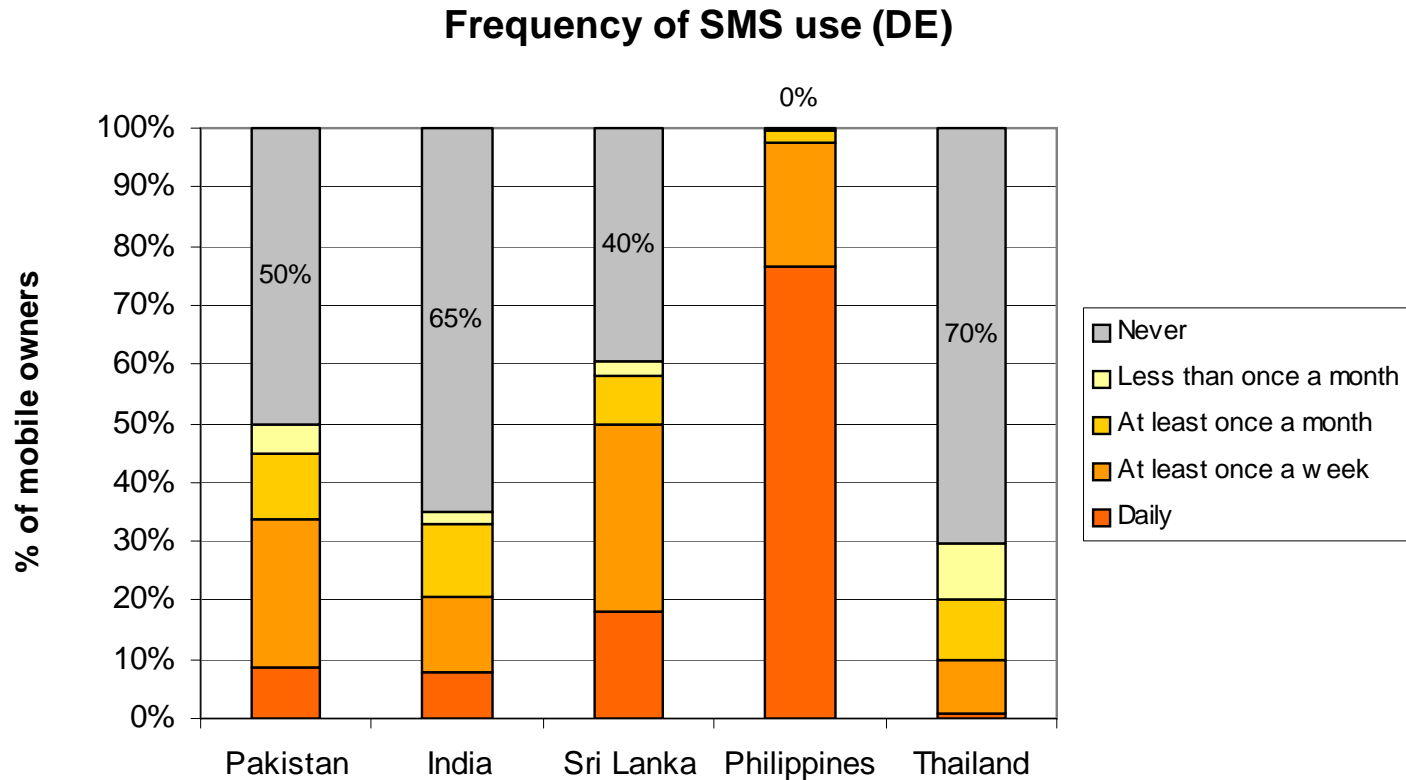
...and short duration



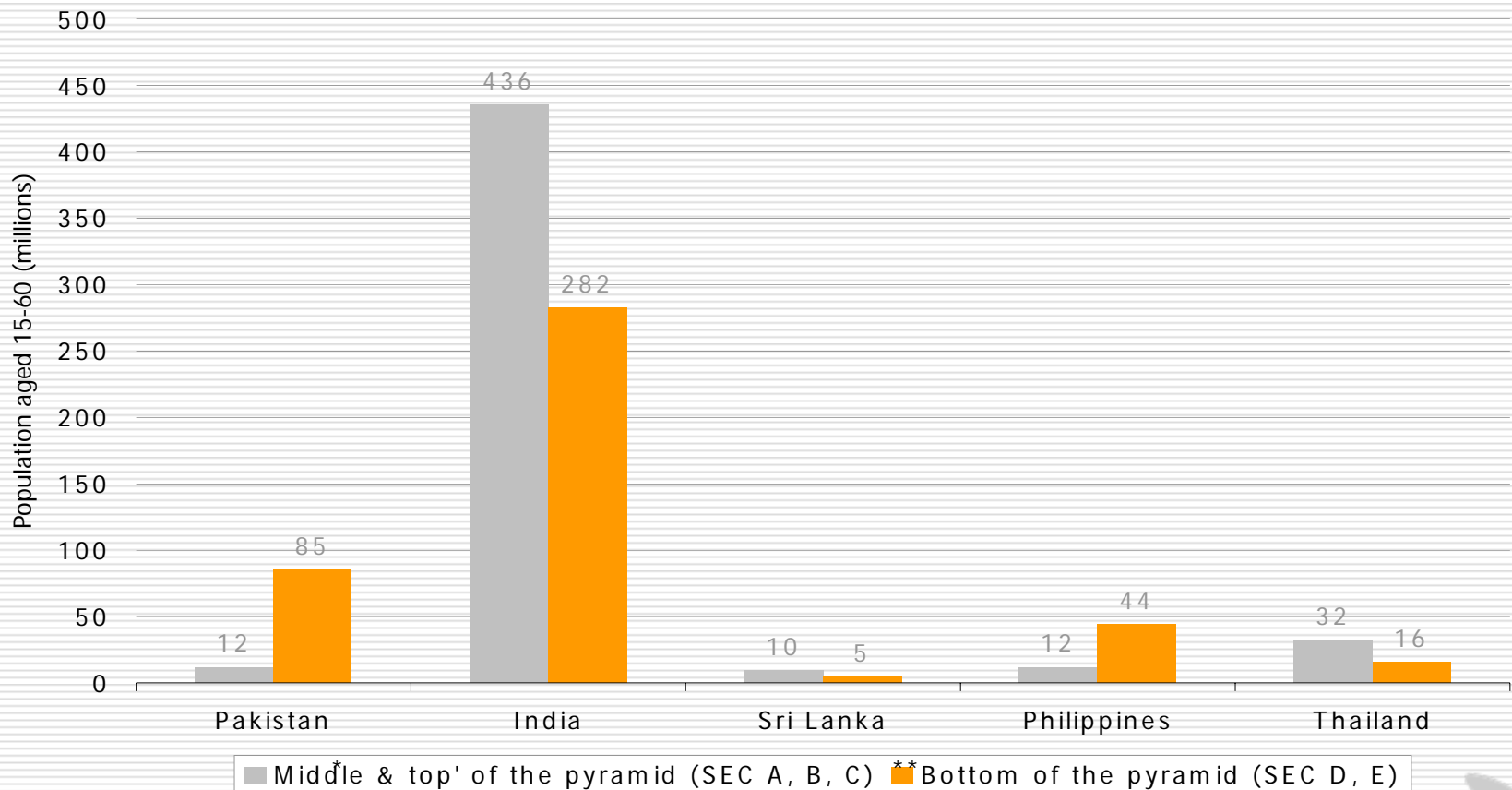
Source: *Diary*



SMS is the main non-voice application



How big are the markets in emerging Asia: BOP and M & TOP?

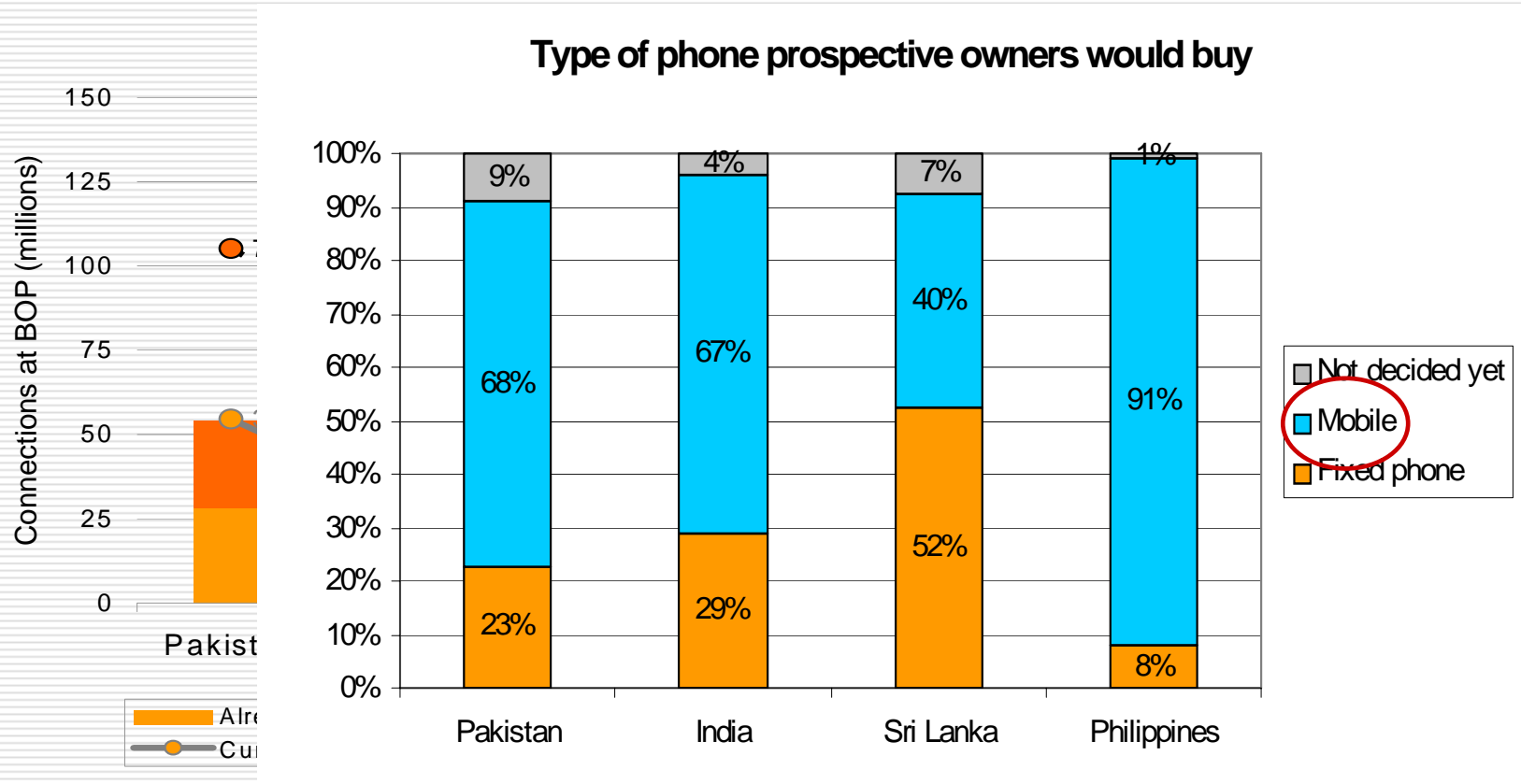


*excluding FANA/FATA Tribal Areas; **excluding North & East Provinces



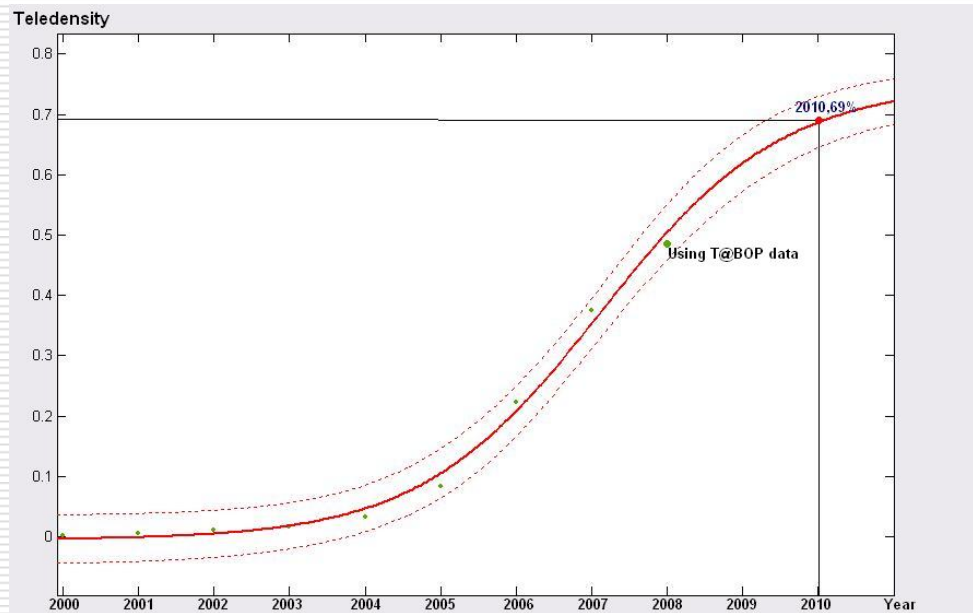
Mobile access is high ... and growing

latent demand → actual



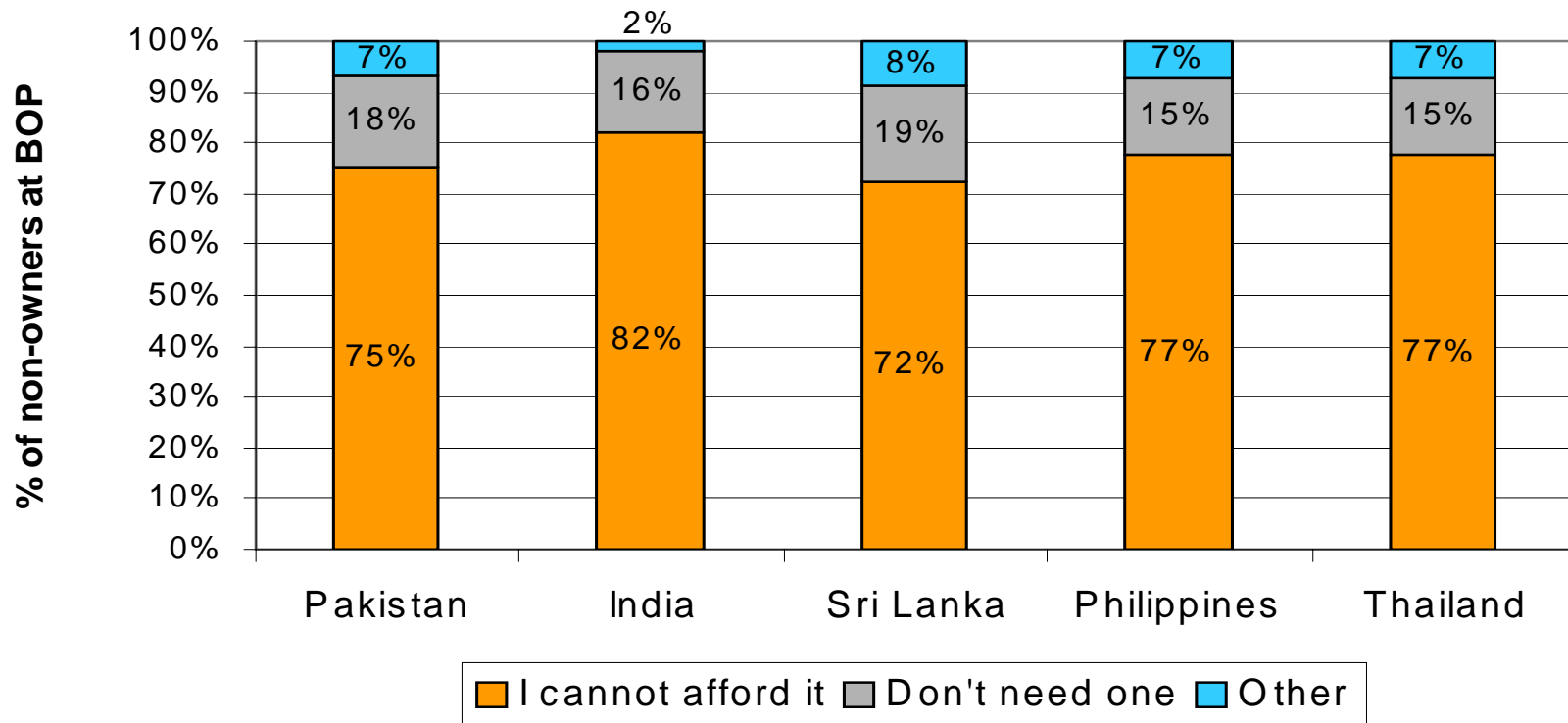
Further analysis

- Forecasting demand using BOP and other available data
 - Pakistan example



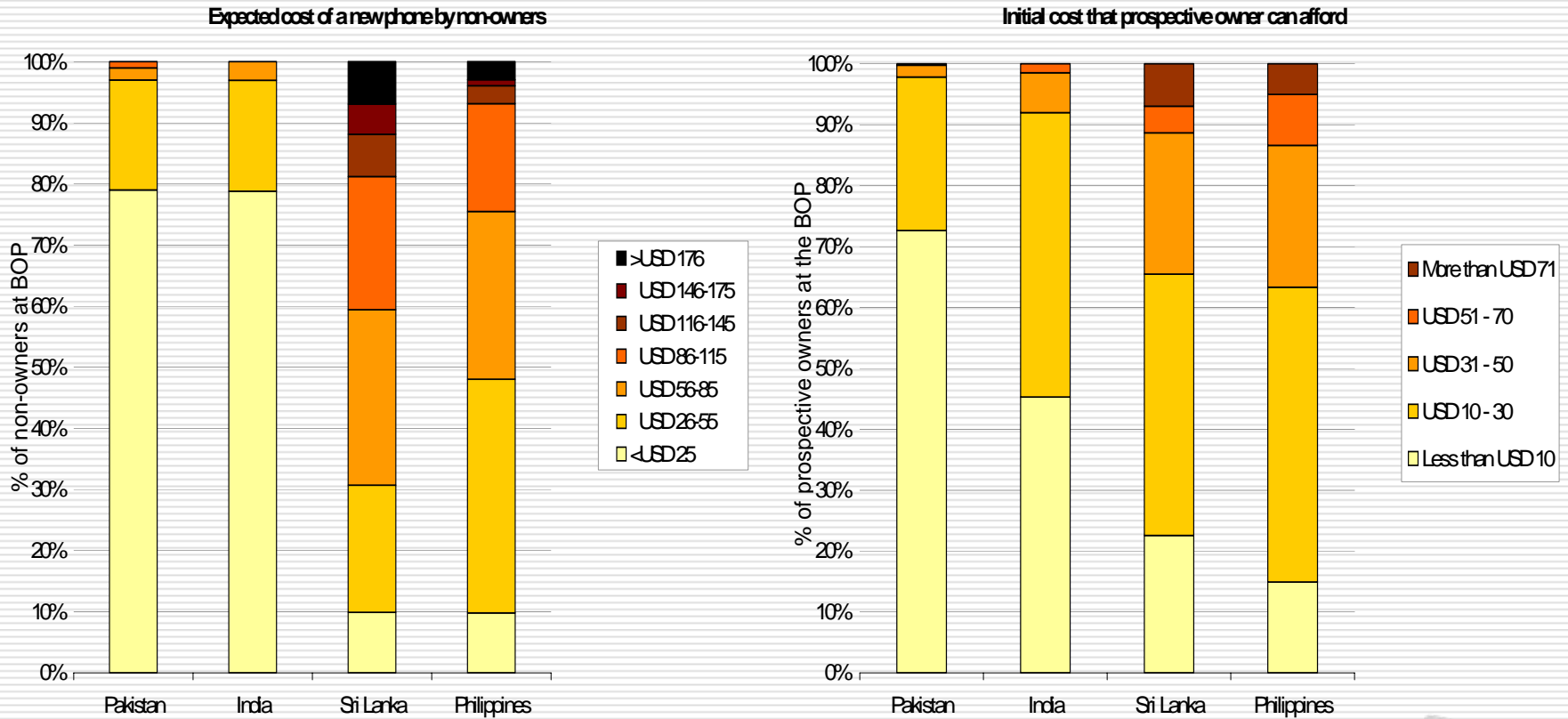
Key barrier to ownership is affordability

Reasons for not owning a phone



The cost of getting connected...

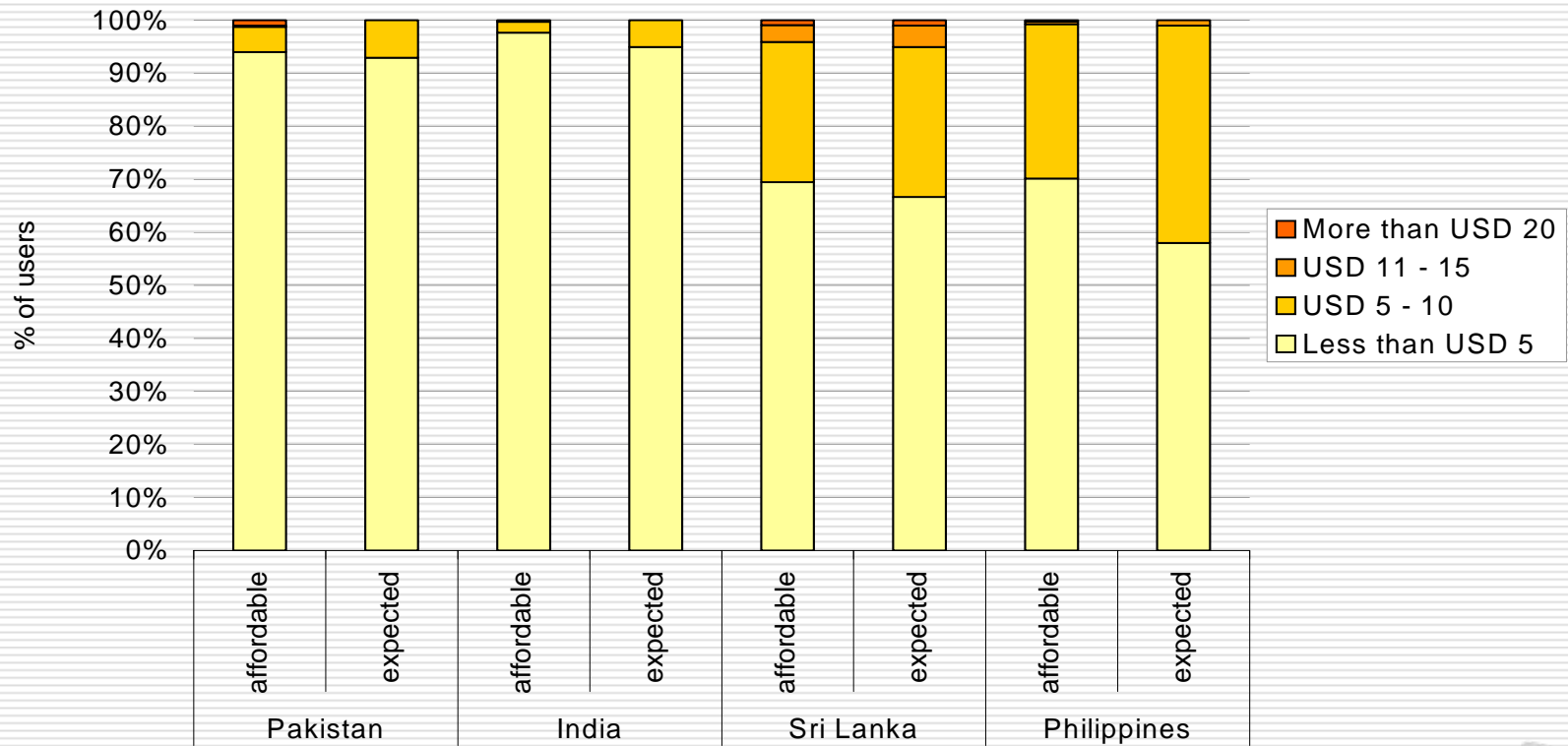
Expectation vs. affordability gap



Use cost

USD5 per month on communication

Monthly charges: expected vs. affordable



Use for market demand dynamics

- Service providers
 - Telecommunication
 - Infrastructure
 - VAS
 - Financiers
 - Banks, venture capital companies etc.
- Equipment manufacturers
- Regulators
 - Conducive regulation for efficient markets
 - Service providers
 - Consumers
 - Removing barriers to realize latent demand



What about the “Internet”?

	Pakistan	India	Sri Lanka	Philippines	Thailand
Use the Internet Urban; Rural	0% 3.0;0.7	0% 0.2;0.1	1% 2.1;1.4	9% 12.8;4.3	10% 22;2.3
Not heard of Internet	36%	72%	29%	14%	36%



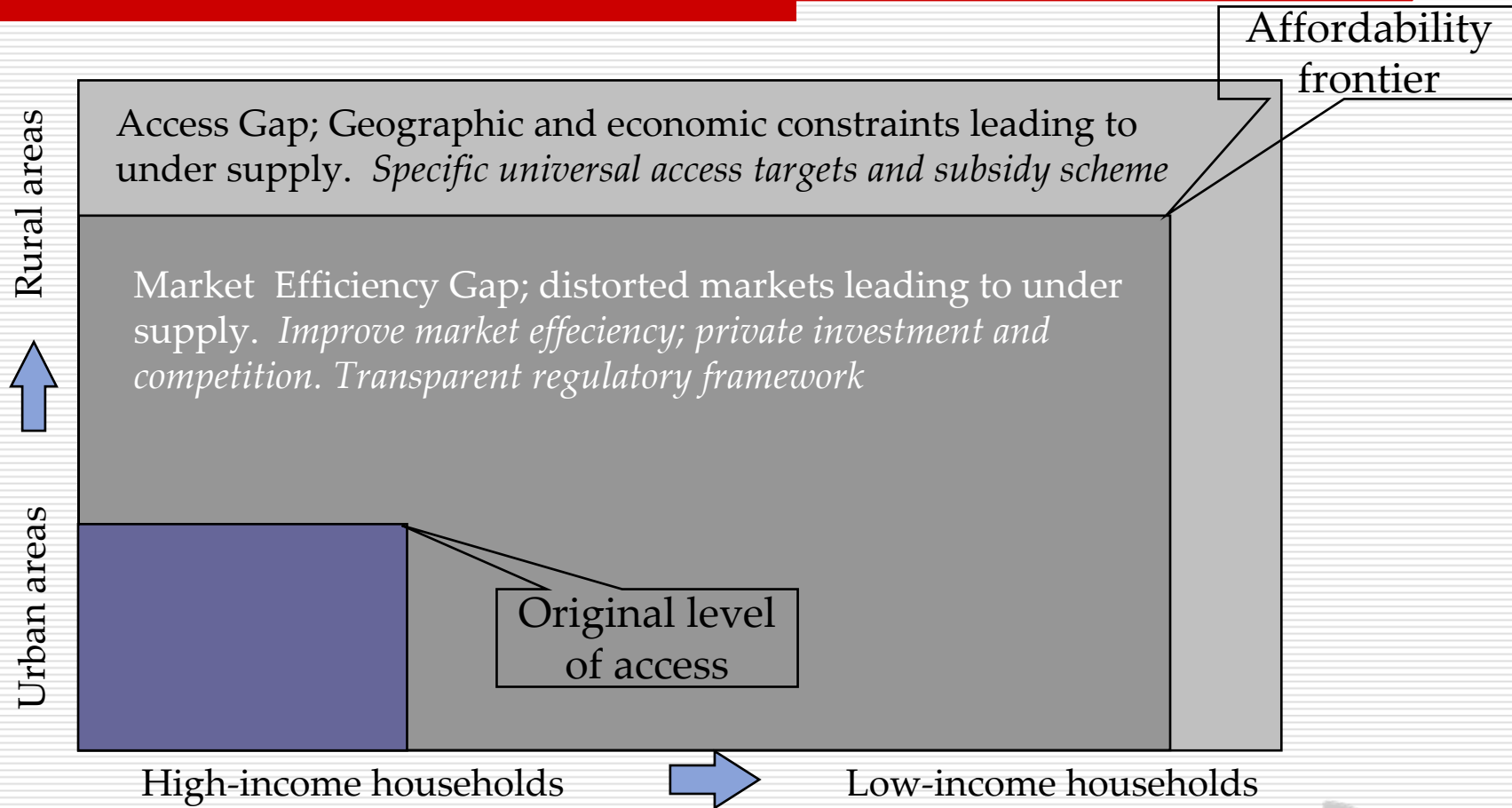
Understanding demand from a market failure context

- Market dynamics
 - Then → now
- Market failures
 - Policy formulation
 - Universal service obligations
 - ADC
 - Government failures
- Prioritizing expenditure
 - “Telecentres, full of computers but without customers ... A common question in many parts of the world”;
Telecentre.Org, December 2007



Market failures

understanding reality



Policy

Bridging the market efficiency gap

- 1999
 - UN Secretary General Kofi Annan at ITU Telecom “Half the world's people have never made or received a telephone call”
- 21st Century telecom policy
 - How to meet the latent demand ← willingness to purchase the service, but no ability
 - Sri Lanka → progressing → 40 per 100
 - Nepal → slow → 8 per 100
- Discussed in earlier session



Policy

Bridging the access gap

- Unable to service on 'pure' market mechanisms
 - How to meet the latent demand ← willingness to purchase the service, but no ability
 - Smart subsidies; not always smart



Smart subsidies

- Minimum [asked for] subsidy given to a bidder to bridge a defined access gap
 - Competitive bidding process
 - Forced to consider the most cost effective technology and other cost-saving options to bid for the lowest required subsidy
- Understanding demand is critically important
 - South American experience
 - Nepal experience



South American experience

The Chilean success story

- Critical success factors for developing realistic business models → Smart subsidies
 - Good regulatory practices
 - Identification of license areas and bundling
 - Extensive demand research by Regulator shared with bidders
 - Bundling; multiple areas
 - Low demand + high demand
 - Attractive licenses
 - Demand research to assess the latent demand not just for voice but other services
 - Technology neutrality



Nepal experience

How to make a smart subsidy not so smart

- Main reasons [selected] for failure
 - Tough politico-regulatory regime
 - Exclusivity violations
 - Arbitrary interconnection charges etc.
 - Arbitrary changes in license areas
 - Exclusivity violations ← lack of understanding on negative impact on the business plan of operator
 - No demand studies done by Regulator
 - No evidence of comprehensive demand studies by bidders
 - Changes in license areas
 - Replace original license areas with areas that are 'near military facilities...'



Market failure leading to Government failure



STM Public Call Office. Eastern Development Region, Nepal

Source: Harsha de Silva

- Justifiably closed
 - July-Aug 2005:
Average minutes of use/day = 0.36
- "No demand?"
 - At what price?
 - x18; x6



Importance of understanding demand

- Market dynamics
 - Then → now
- Market failures
 - Policy formulation
 - Universal service obligations
 - ADC
 - Government failures
- Prioritizing expenditure
 - “Telecentres, full of computers but without customers ... A common question in many parts of the world”; Telecentre.Org, December 2007



Prioritizing expenditure

- “Telecentres, full of computers but without customers ...”
 - A common question in many parts of the world; Telecentre.Org, December 2007
- USD millions of development assistance going to Telecentres
 - What is the reality?
 - Interesting discussion at LIRNEasia blog
 - True story:
 - Prof. Subash Bhatnagar to e-Chopal manager seeing his computer switched off “Why is the computer not switched on?”
 - Reply “Well...it has not been switched on for weeks!”



ICT Demand is derived

- What is the info. and comm. demand at the BOP?
 - Local content
 - Market prices, daily work in village etc.
 - Emergency
 - Keep-in-touch, social networks for BOP [Buzz City?]
- What is the vehicle?
 - Usage of telephone services > 90%
 - Usage of Internet < 1%
 - Will user care which vehicle as long as the service is available?
- e-Gov
 - 100,000 Common Services Centres in India?
 - Recent LIRNEasia work on Dial-a-Gov?



Mobile phone as transactional device

- Pre-paid mobile at BOP > 90%
 - Sri Lanka's largest GSM operator [> 4 million subscribers]
 - 86% prepaid subscribers, overall
 - Approx. 50% of prepaid top-ups are via electronic reload; other 50% via card system
 - 12,000+ electronic reload outlets
 - Mobile payment system recently launched for the first time in South Asia
 - Philippines is the world leader
 - Personal accident insurance system via mobile connection also recently launched



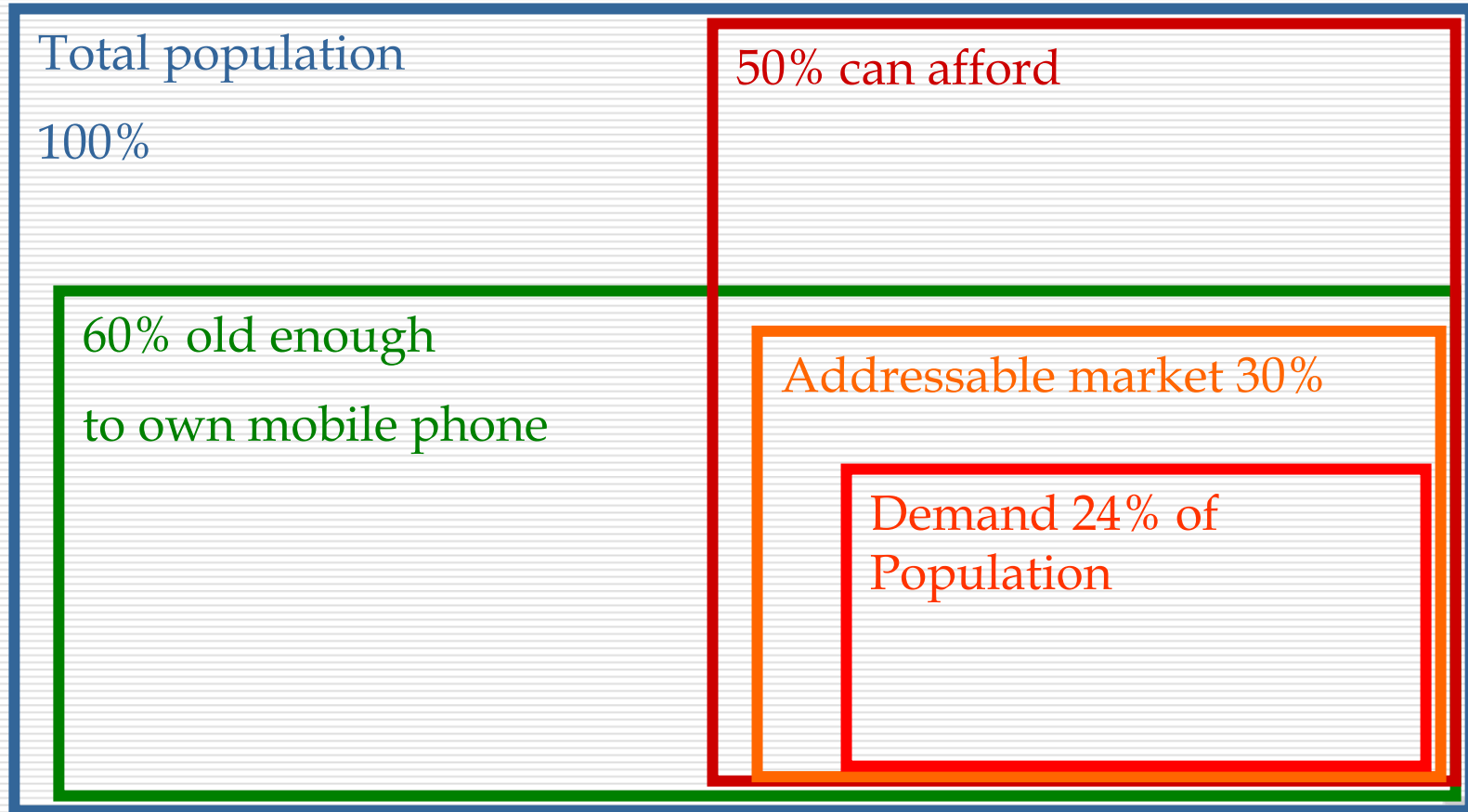
The foreseeable future at BOP → Mobile 2.0

- Understanding demand for telecom + services is going to be key



Potential demand

an example



Summary

- Technical issues on demand
 - What is demand
 - How does demand change
 - Derived demand for ICT
- Understanding demand in the context of
 - Market dynamics
 - Market failures
 - Prioritizing expenditure
- Need to understand demand to understand what happens next



Harsha de Silva
desilva@lirne.net

