

# Lessons from an international gateway liberalization

Rohan Samarajiva

# Agenda

---

- Illustrate the way reform works and the interplay of policy and regulation
- Look at how policy is designed, including the important lesson that theoretically optimal is not always the best
- A case study of international gateway liberalization, mostly done in the region, but not yet complete



# What are the policy objectives?

---

- Ensuring that the benefits of ICT connectivity reach the villages?
- Improving the investment climate in telecom?
- Restoring law and order to the sector & prevent it being a source of black money that corrodes the body politic?
- Creating service sector jobs and exports through Business Process Outsourcing?
- Improving call completion rates?
- Reducing prices of outgoing calls?
- Facilitate activities of expatriates
- Other?



## Policy objectives, rank ordered as in the Sri Lanka case (not necessarily the same in other countries)

---

1. Restoring law and order to the sector
2. Creating service sector jobs and exports through Business Process Outsourcing?
3. Ensuring that the benefits of ICT connectivity reach the villages
  - Improving the investment climate in telecom
4. Improving call completion rates
5. Reducing prices of outgoing calls



# First, realistically assess regulatory powers and capacity

- The best solution is what does the job, not what is theoretically optimal
- In the end, Sri Lanka considered two options and picked the theoretically optimal (Option A: not described here; can discuss)
  - In actual fact, outcome was as though Option B had been selected (with one exception)
  - The failed part of Option A was due to regulatory failure (weaknesses in the Act plus unwillingness to take parties to court to enforce interconnection rules)
  - Close examination of PK and IN cases will also show difficulties in enforcing optimal solutions



# Second, anchor the solution on a principle

- “Licenses where scarce resources are involved; authorizations otherwise”
- External gateway: are scarce resources involved?
  - No. No justification for limiting the number of licenses
  - But how come only 8 of the 32 EGO licenses issued in LK applying this principle are fully operational?
- Theory meets reality: Without proper interconnection, gateway licenses are pieces of paper



## Third, develop a rationale for deviating from the optimal (if you wish . . . )

### □ For example:

- Announce a study on implementing an effective interconnection regime that will be one of the world's first to use bits instead of minutes (including for international termination)
- In the interim, the existing operators who have served the sector during bad times and good, will be given a running start
- Schedule for implementing new interconnection regime and authorizations regime will be announced
  - Unless existing operators fully cooperate in implementing interim interconnection regime, the date will be advanced



# Option B

---

- All existing operators holding fixed or mobile number blocks will be entitled to obtain a EGO license at a fixed price, on any day after the start date
- As part of obtaining the license, they must agree to interconnect among each other, based on transparent and simple rules
  - All traffic will be converted to circuit-switched form and records maintained on gateway volumes
  - Operators may work out mutually acceptable terms for interconnection, but NRA will provide a default agreement



# Option B

- NRA will also enforce a strict regime with respect to any identified essential facilities, including but not limited to undersea cables and the cable station
  - If SEA-ME-WE 4 is the best value for money, operators should migrate from satellite
    - Monitoring 1 or 2 cables for security more feasible than trying to monitor hundreds of VSATs
- An enforcement unit will be established with the participation of all EGO operators to ensure that third parties do not exploit arbitrage opportunities
  - Backed up by substantial bank guarantees to ensure that licensees comply with license conditions and also set in place effective internal controls to prevent “internal bypass” (explained below)



# Option B

- Without a termination price above costs, operators will be unhappy
  - They will want NRA to act as their cartel manager
  - But if this price is too high, arbitrage/bypass will be difficult to avoid
- Two forms
  - “Leaky PABX”: landing at third party location
    - May be identified from traffic analysis at high volumes, but cooperation of operators and police required
  - Landing inside operator premises (internal bypass)
    - Very hard to detect because management/employees are involved in “stealing” from operators
      - Bank guarantees needed to ensure that operators establish safeguards against this



# Option B

- Operators will engage in “own bypass”
  - Establish POPs in foreign locations (e.g., London, Hong Kong) and haul that traffic in compressed form, claiming it is outside the regime
    - No harm, except in terms of fair collection on levies and maintenance of “national” termination rate
- In the end, equilibrium point is when domestic termination rate = international termination rate
- Recommendation: Keep the gap as low as possible and step it down every year
  - Not possible to unilaterally set termination prices; will have to figure out what the market price is
  - Keep pace with its decline (announce the step down; but keep some flexibility)



# Negatives of Option B

---

- NRA becomes a cartel manager
  - Justification1: universal service levy
  - Justification2: time-limited action, will be phased out
- Cartel behavior may spread
  - Operators working together to defeat “leaky PABX” bypassers may cooperate on other things as well
- Outgoing prices will decline, but not as dramatically as one wishes
  - Since Option B allows each operator to “own” the international traffic of its customers, no incentives
  - May attempt to price-discriminate using quality



# “Negative” of any international liberalization (moderated in Option B)

- Trade balance in telecom services account is likely to be reduced
  - When more calls go out, local operators have to buy more termination services (outflows (X) increase)
  - When more calls come into BD, local operators can sell more termination services (inflows (Y) may increase, depending on termination rates)
    - Currently  $Y - X > 0$  (in reality and accounting for grey market revenues)
    - As international calling becomes popular, X will increase; and as int'l termination rates = local termination, Y will decrease →  $Y - X =$  or  $< 0$



# Is this a true negative?

---

- Telecom is part of many value chains
  - Some are easily measurable, as with ITES account balance increasing after liberalization
    - Most telecom services consumed internally; while most ITES exported → ITES balance will more than compensate for telecom balance
  - Other benefits such as apparel and banking value chains not that easy to measure
  - Also benefits to fragmented families of expatriate workers



# What happened after international liberalization: Sri Lanka experience

- Earnings from telecom services increased by 55% to USD 68 million (Y) in 2006
  - Larger network (5 million mobile and 2 million fixed) attracted greater volume of calls from abroad
  - Reduction of bypass
- Yet, balance declined 24.5% to USD 19 million (Y-X) in 2006
  - Caused by growth of outgoing calls requiring payments for termination services of USD 49 million (X)
- Y (and therefore, Y-X) can be increased by
  - Keeping termination rate high OR
  - Reducing bypass (which requires reducing termination rate)
- X can be decreased (to keep Y-X positive) only by dissuading people from calling abroad



# Sri Lanka experience: ITES and telecom

**Exports of Software and Information Technology (IT) enabled services such as IT related Business Process Outsourcing (BPOs), continued to grow in 2006, supported by further improvements in IT related infrastructure facilities.** Net earnings from software and IT enabled services exports increased by around 19 per cent to US dollars 98 million in 2006.

Central Bank of Sri Lanka Annual Report 2006, p. 85

**98 million > 19 million**



# How to set the license fee?

- One option is an auction
  - In variant of Option B, limited number of EGO licenses will be issued, say, for two years to a subset of current operators
    - Minimum price is set
    - Auction determines the actual price
    - After the end of the two years, no limit on licenses that are issued; but all must pay auction-set price
  - Negative is that those who do not get the license in first round are likely to block interconnection implementation
  - If they believe that unlimited licenses will be issued after two years, they may game the auction to reduce the price



# How to set the license fee?

- In authorization regimes, a standard license fee is set; auctions and authorizations do not go together

	One-time fee (USD)	Annual fees	Bank guarantee
India	5,200,000	15% of gross rev.	Very high
Pakistan	500,000	<0.5% gr. rev. + acc. contr.	USD 10 million
Sri Lanka	50,000	0.3% of gr. rev.	None to govt.

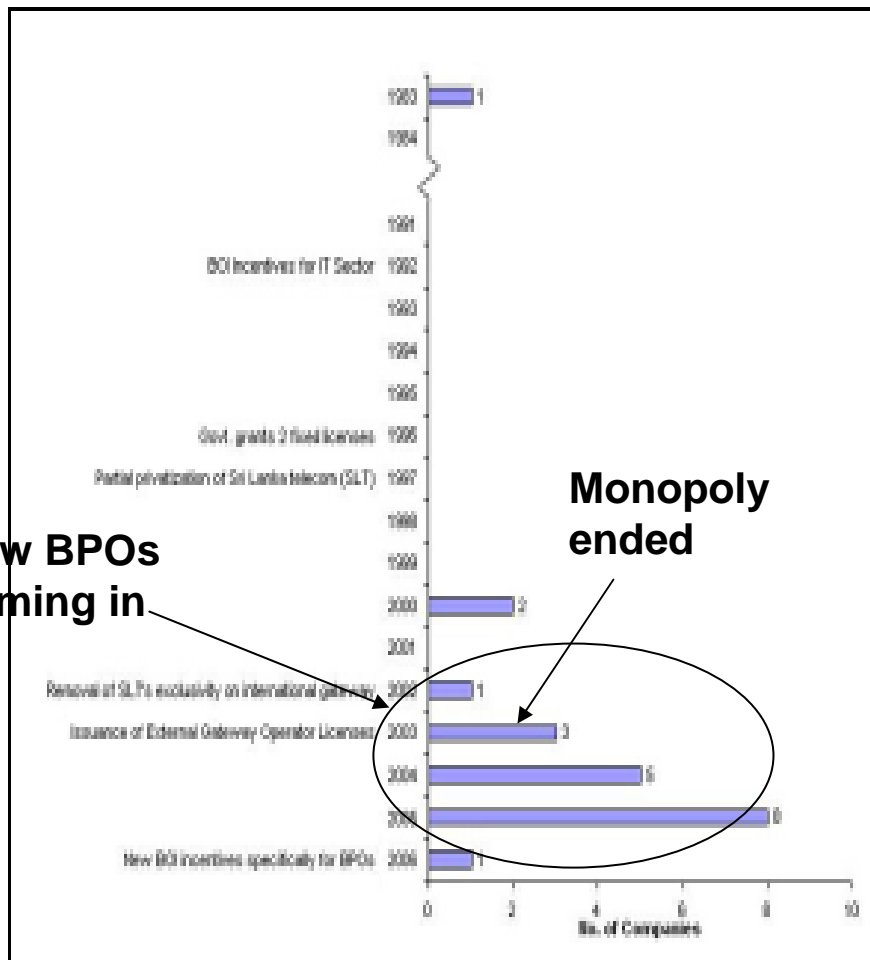
# Other benefits of international liberalization

---

- In 2003, Sri Lanka ended its international exclusivity by issuing authorizations for External Gateway Operators
  - Implemented in March 2003
  - Announced prior to the Initial Public Offering of incumbent (62% owned by government) in December 2002
    - IPO succeeded (previous two attempts failed)



# BPO boomlet started



- ❑ Sri Lanka similar to South India, but missed the BPO wave
- ❑ By 2006, 13.2 million USD invested in BPOs
- ❑ 3,700 persons employed now with 30% growth projected for 2006\*

\* <http://www.lirneasia.net/2006/08/baseline-sector-analysis-of-sri-lankas-bpo-industry/>

# Telecom requirements of BPO industry

- Telecom is a necessary condition (but once industry in place, not the most significant)
  - Redundancy of suppliers of domestic and international leased lines
  - Redundancy of media
    - Cable is essential
    - Two cables better than one
    - Satellite backup for cable
  - Reasonably priced domestic and international leased lines
  - Quality is very important



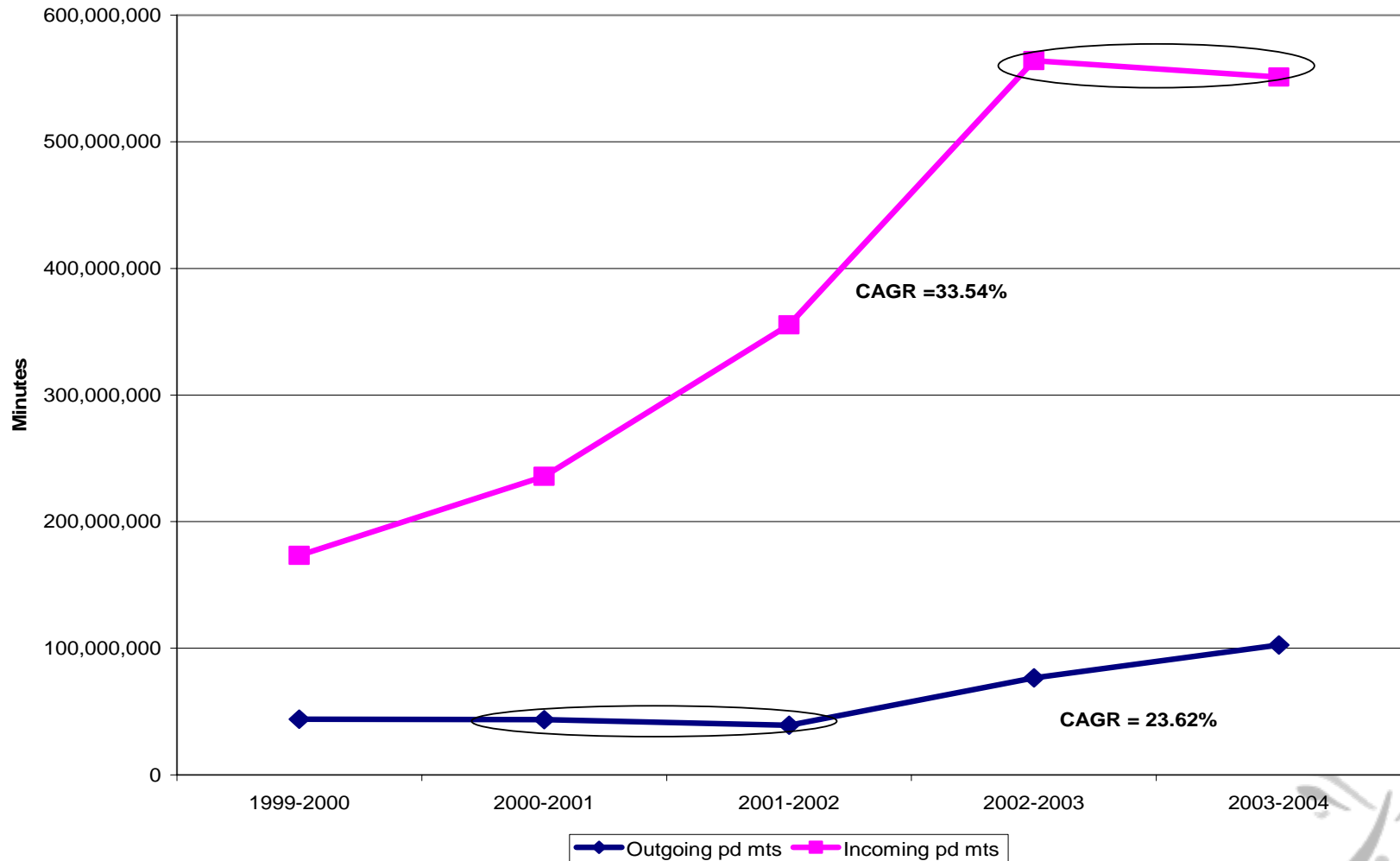
# How does the incumbent fare after liberalization?

---

- Not really a serious problem because monopoly has already been broken by the bypassers
- Incumbent's pricing behavior is unlikely to be that of a true monopolist
  - BTTB example
    - Outgoing mts declined until 2001-02
    - Turned around by changes in outgoing prices



# Example: BTTB incoming and outgoing paid mts, 1999-2004



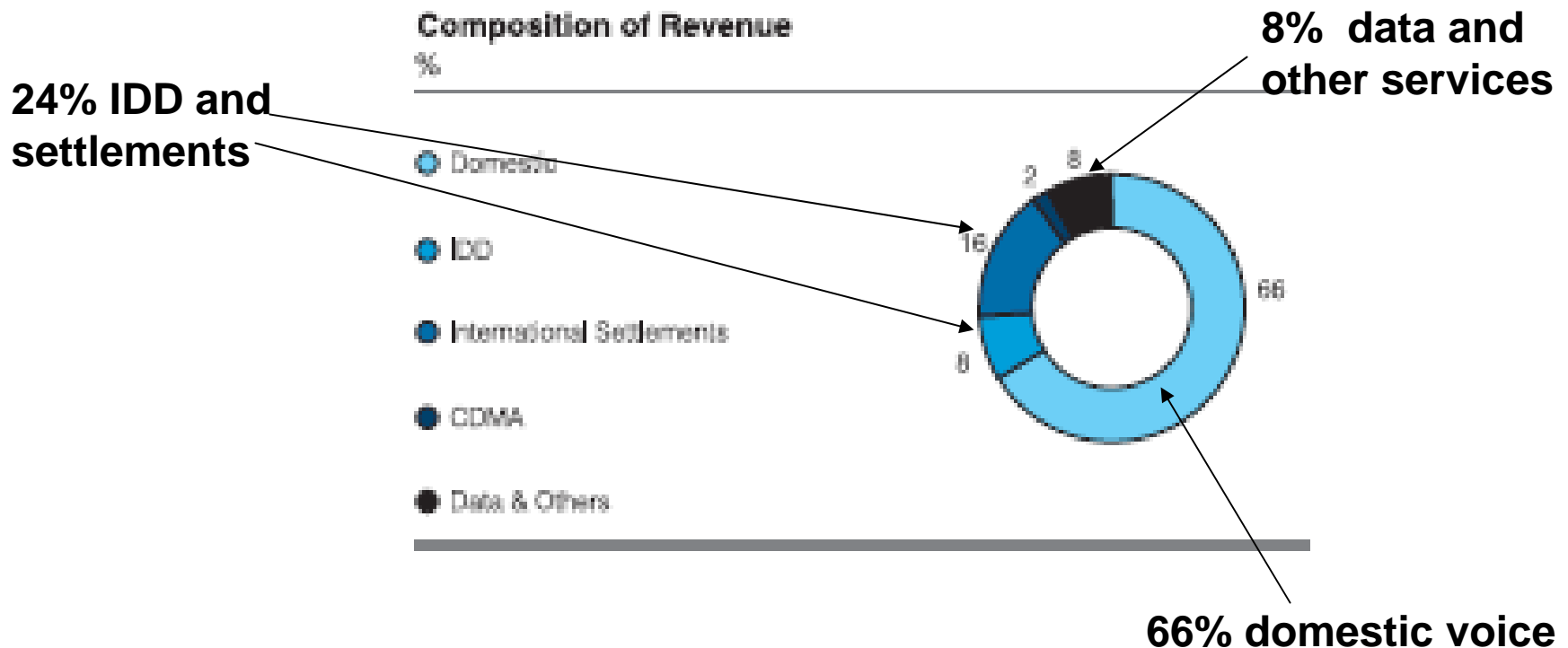
# LK incumbent fared quite well after the end of its quasi-monopoly

---

- But this was a relatively nimble, modernized company, privatized in 1997
- Care must be exercised in extrapolating from such a company to an unreformed incumbent which does not have those advantages



From 60%+ dependence on international in 1998, incumbent achieved a more normal mix of revenues

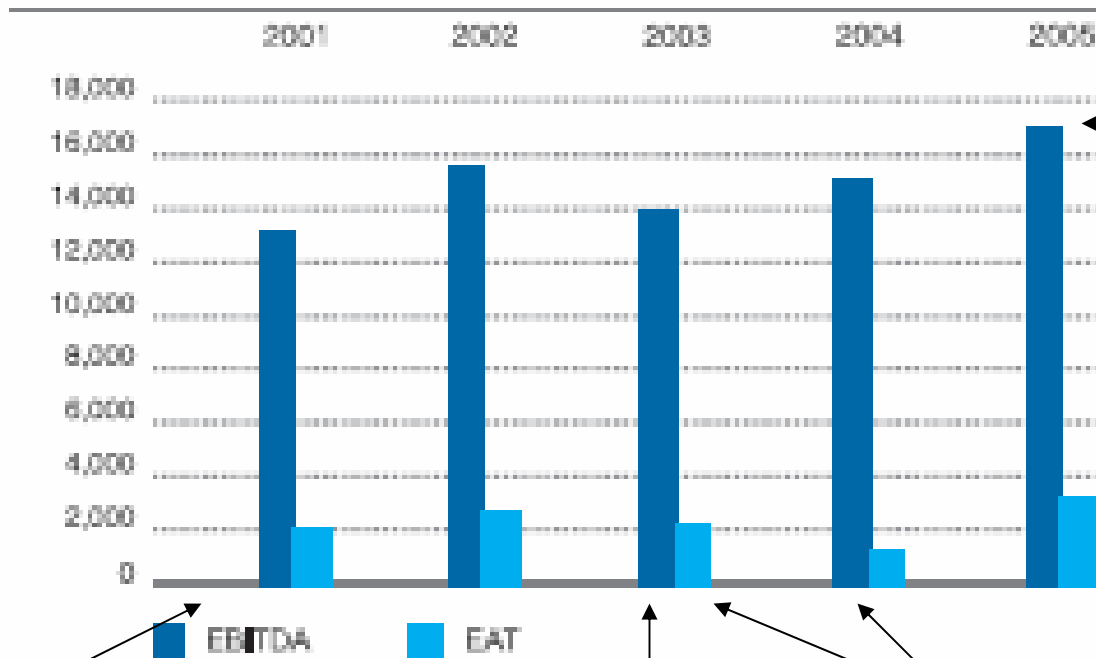


Source: SLTL Annual Report 2005



# But what about profits?

EBITDA/EAT  
Rs. Mn



EBITDA highest in 2005

Earnings after Tax highest in 2005

Peak of litigation over bypass

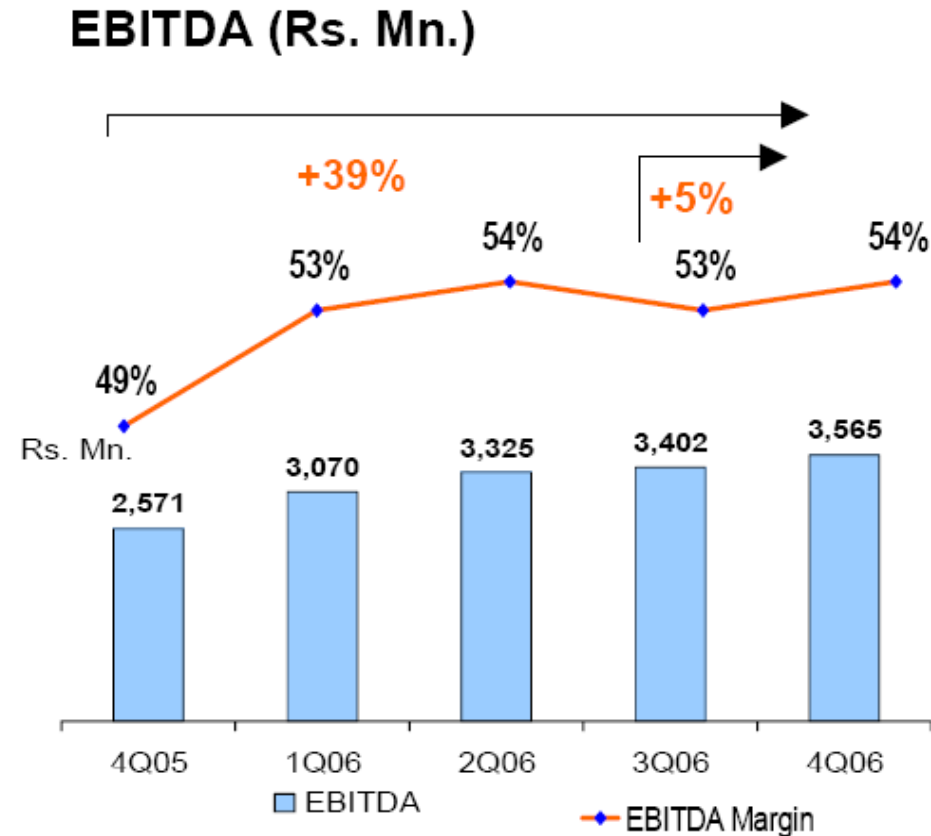
Exclusivity ended

Losses from mobile Subsidiary acquired in 2002

Source: SLTL Annual Report 2005

# And what of the competition?

- Largest mobile operator is largest company in LK by market capitalization
- EBITDA margins around 50%



Source:

**Dialog**  
TELEKOM



# Profits improving after liberalization

- EBITDA margin rises from 43% in 2002 to 52% in 2005
- Mostly reinvested

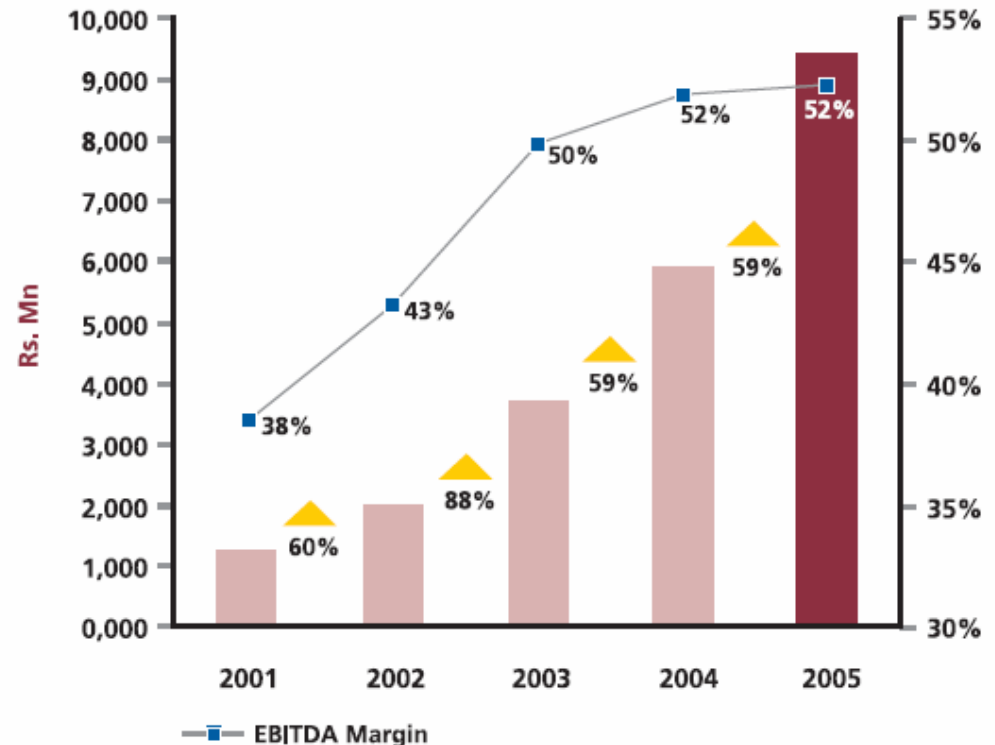


Figure 14 : EBITDA

Source: Dialog Telekom Annual Report 2005

# The political calculus

---

- Winners
  - Government
    - More tax revenue
    - Less black money
    - Greater respect for law and order
    - Security concerns better addressed
  - Incumbent
    - Reduction of bypass
    - More revenues from backbone network
  - Other licensees
    - More revenues
    - Easier to obtain investment capital
  - Current customers
    - Higher-quality incoming international calls (if bypass is controlled)
    - Lower-price outgoing international calls



# Political calculus

- Winners
  - The currently unconnected, especially in rural areas
    - Getting connected and ability to receive international calls
    - Lower international outgoing charges
  - Expatriates
    - More phones to call to
    - Improved call completion/quality (if bypass is controlled)
  - Industry
    - Better international connectivity (if bypass is controlled)
    - BPO/ITES opportunities
    - Lower leased-line costs
  - Trade balance
    - ITES balance will improve even if telecom balance worsens
- (Temporary) losers: current illegal bypass operators
  - They too can become legal once interconnection regime is developed and implemented
    - Will have to pay taxes, though possibly less bribes
  - No point in giving them licenses, without being able to give them effective interconnection



# Additional payoffs

---

- Usually dangerous to try to achieve too many policy objectives with one policy action
- However, we will look at how the gateway liberalization contributes to rural rollout too



# What are the key actions that will ensure rural access to ICTs

- Greater investment in backbone and access networks, combined with
  - The removal of regulatory distortions favoring urban rollout
  - Intense competition among operators that would mop up the most obvious demand in urban areas
- Not necessarily universal service funds
- For Internet access, key is availability and price of international and domestic leased lines, not
  - Telecenters
  - Number of ISPs



# Causal chain

---

**Improved regulatory environment**



**Greater investment**

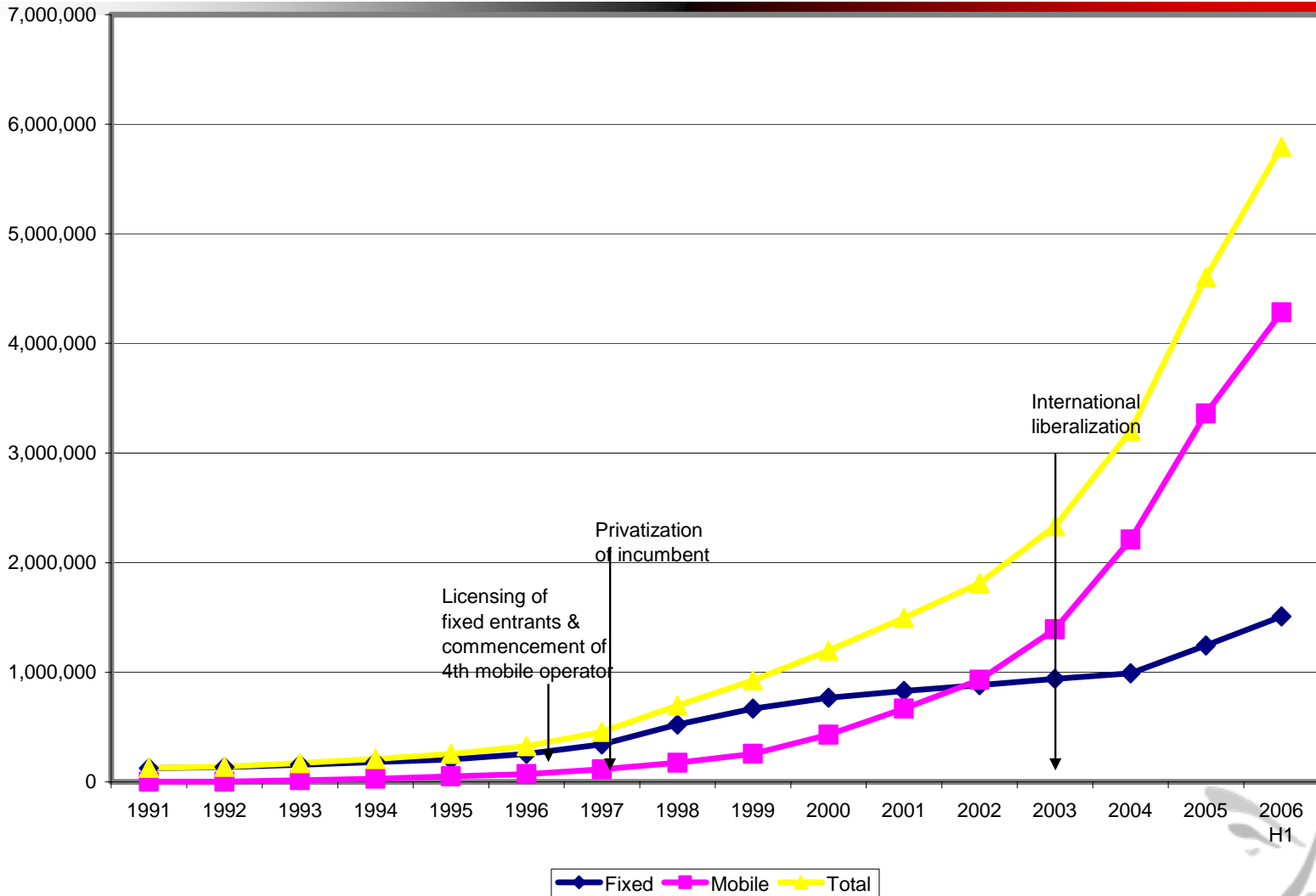


**When competition makes urban supply less rewarding, and regulatory biases are removed, rural rollout will occur**

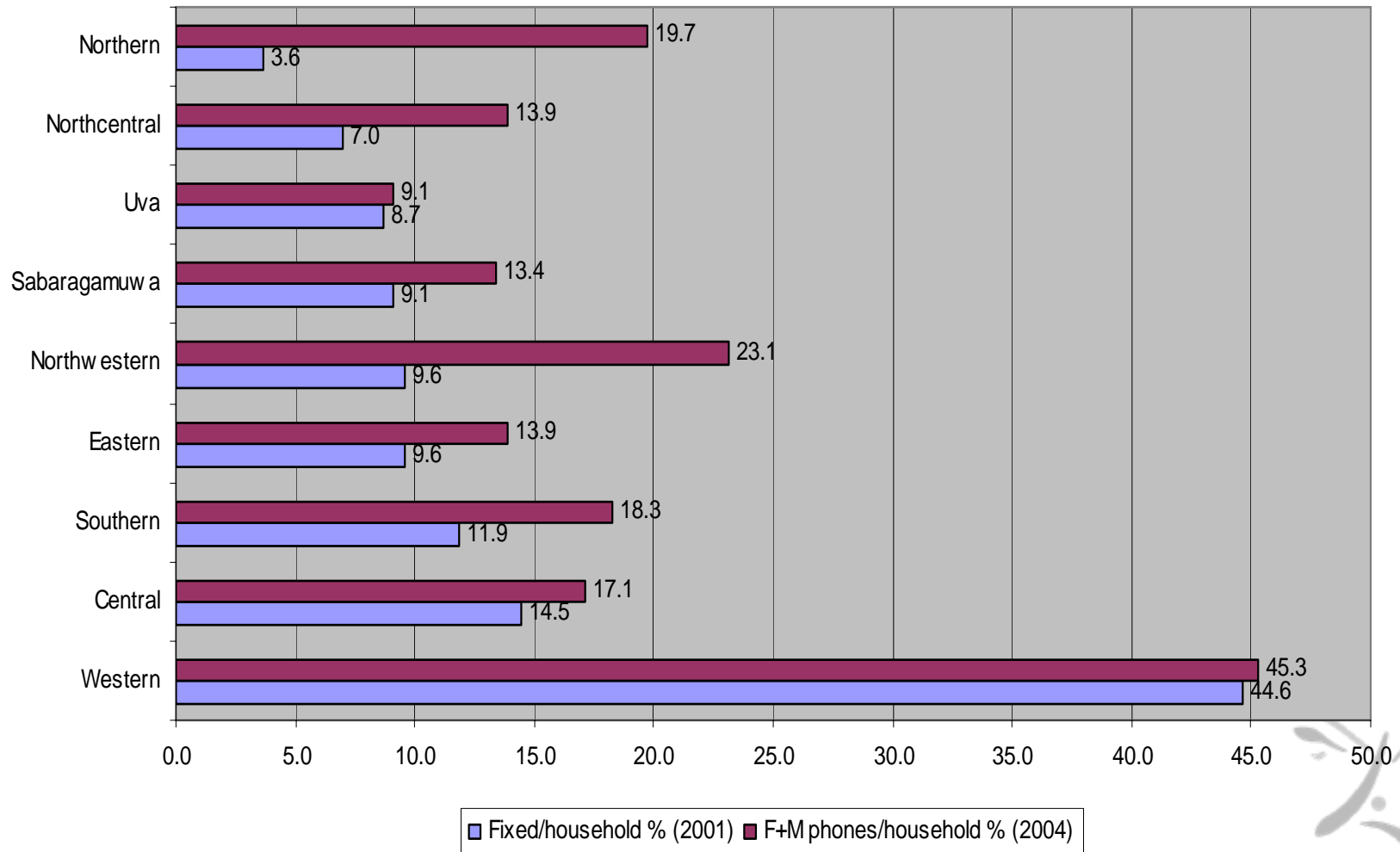
**Have we seen the results? Yes!**



# Raw growth accelerates after each round of reform . . . .



# Into rural provinces, after 2003 . . .



# Key points

- No data collected by Central Bank/TRC on rural/urban, but Western Province (29% of population; 48% of GDP) is a good proxy for urban
  - In 2001, 44.6% of WP households had fixed phones; in 2004, 45.3% had fixed/mobile phones (almost static)
  - In 2001, 9.6% of NWP households had fixed phones: in 2004, 23.1% (move from 5<sup>th</sup> place to 2<sup>nd</sup> place)
  - Even more astounding, Jaffna & Vavuniya districts of NP moved from last place (3.6%) to 3<sup>rd</sup> place (19.7%)
  - Even the last-place province (Uva) grew from 8.7% to 9.1%
- 2006 survey research showed that 41% of SEC D&E households outside N and E provinces have a fixed/mobile phone → reasonable to assume that 45% of all LK households had some phone in 2006
- The real push into rural Sri Lanka began in ~2002

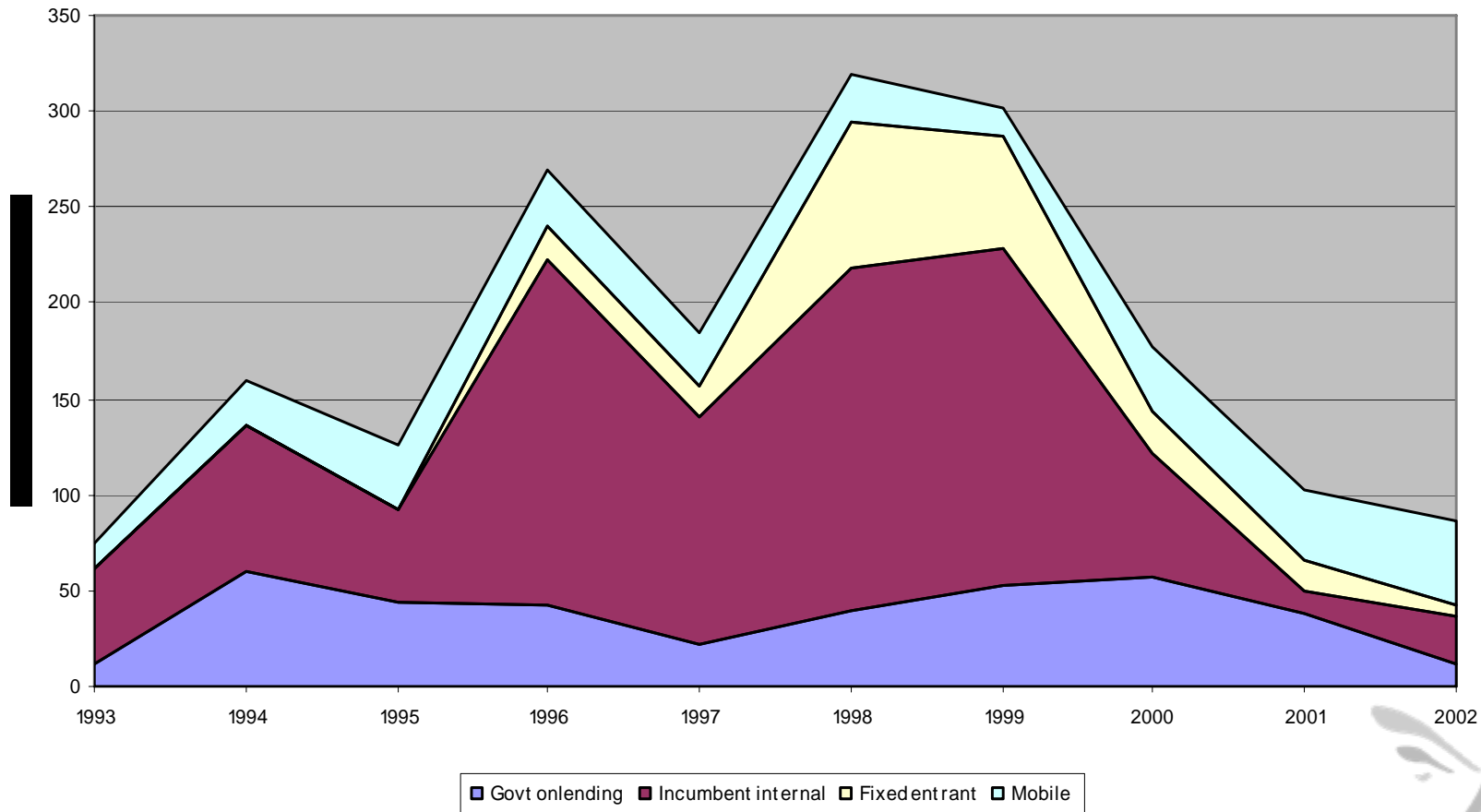


# What about USO funds?

- LK started reimbursing for rural rollout only in 2007 (if at all), after much of the rural rollout had happened
  - Universal service levies on incoming and outgoing international calls collected from 2003, but not disbursed
- But yes, levies on terminating minutes are a good way to generate USFs (better than levies on all customers)
- CAUTION
  - Higher the levy; greater the incentive to bypass
  - Calibrate the levy to the perceived ability to enforce proper accounting
- In LK, internal policy debate on USD 0.11 v USD 0.06
  - ➔ USD 0.11 stepped down to 0 in 5 years was decision
  - Not implemented; stuck at USD 0.11
  - Significant bypass continues



# Investment is the necessary condition . . . .



# Uncertainty=investment killer

---

- 2002 was the year for ending SLTL's 5-year exclusivity; everyone was waiting for the decision
- Decision announced in August 2002; SLTL IPO succeeded in December 2002 (after two failures); massive investment plans announced by all operators in 2003



# Other conditions

---

- Ensure healthy levels of competition
  - No magic number
    - Sri Lanka (population 19 million) is at 4 mobile + 3 fixed → 5 mobiles + 3 fixed by year-end
    - India has lowest levels of industry concentration in the region → lowest prices and 6 million + /month growth
    - Pakistan has high HHIs: Mobilink has 60% of customers and 70% of revenues; still the fastest growing in the region



# Other conditions

---

- Cost-oriented and non-discriminatory access to the backbone network(s)
  - BD has two: BTTB and Grameen
  - India's decision to respect the "property rights" of BSNL led to many distortions and a slowdown of rural rollout
    - Parallel private backbones built



# If you want more than telecom: rural access to the Internet

---

## □ Focus on leased-line prices

- In OECD countries, national and international leased-line costs < 25% of ISPs input costs
- Pakistan regulator estimates that international leased-line costs >60% of ISP's input costs
- Until recently, 80% of ISP input costs in Indonesia were for leased lines



# How?

---

- ❑ Create stable conditions for investment
- ❑ Ensure adequate competition (real, not in the book) exists
- ❑ If essential facilities exist, ensure cost-oriented, non-discriminatory access
- ❑ Publish benchmarks



# What form should liberalization giving primacy to rural rollout take?

---

- Primary goal is improved investment climate → regulatory environment
- Secondary goal is generation and effective disbursement of universal service funds
  - Important to ensure that actions to achieve the two goals do not work at cross purposes

