

Results of reform & the rationale for regulation

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Why reform?

- Telecom is a major driver of economic growth in countries where reforms have occurred
 - Also a major contributor of tax revenues
- People need to keep in touch: communication is a basic need
 - Everywhere telecom has been reformed, pent-up demand has exceeded expectations
- Telecom is an increasingly important element in all value chains
 - Tourism, banking, apparel, etc. depend on availability of high-quality and low-cost telecom
 - Exports, jobs, wealth will increasingly depend on performance of telecom sector
- Ability to assume electronic connectivity makes many innovations possible

Gates Foundation 2011 Innovation Awardee: Bangladesh's Dr Asm Amjad Hossain

- Raised immunization rates in 2 districts from 67% and 60% in 2009 to 85% and 79% in 2010
- How did he do it?
 - Registered pregnant women (date of delivery, location, and phone number) so vaccinators knew when children were born, where they were, and could contact their mothers
 - Established annual schedules for vaccinations
 - Had vaccinators put phone numbers on immunization cards, so parents with young children could get in touch with a health worker

SMEs that use ICTs outperform those that do not

- A survey-based study of 951 SMEs in various industrial and geographical clusters across India , released in July 2013, found that
 - Of SMEs that use the Internet, 64 percent have seen an increase in sales, 65 percent an increase in profits, 69 percent an increase in customers, and 63 percent an increase in geographic reach.
 - Controlling for factors such as investment in plant and machinery, the age, sex and education of personnel, and ownership type, using the Internet in business operations increased revenue by 51 percent and profits by 49 percent.
 - On average, an SME that uses the Internet is able to expand its customer base by 7 percent.
 - An SME that adopts the Internet sees employment grow by 4 percent.
 - SMEs that use the Internet intensively enjoy more financial growth than those who use it less. An SME that uses on average 10 GB of Internet data per month has 7 to 32 percent higher revenue and 8 to 43 percent higher profit, 13 percent higher employment, 22 percent higher employment growth, and 18 percent more customers than an SME using only 5 GB.

We know what the Myanmar Government values

Telenor

- 83% voice coverage & 78% data coverage by five years
- 70,000 SIM sales points
- 95,000 sales points for prepaid top-ups
- Peak prepaid voice < 25 MMK/mt
- SIM < 1500 MMK
- 200 community centers with Internet
- Free central government SMS channel

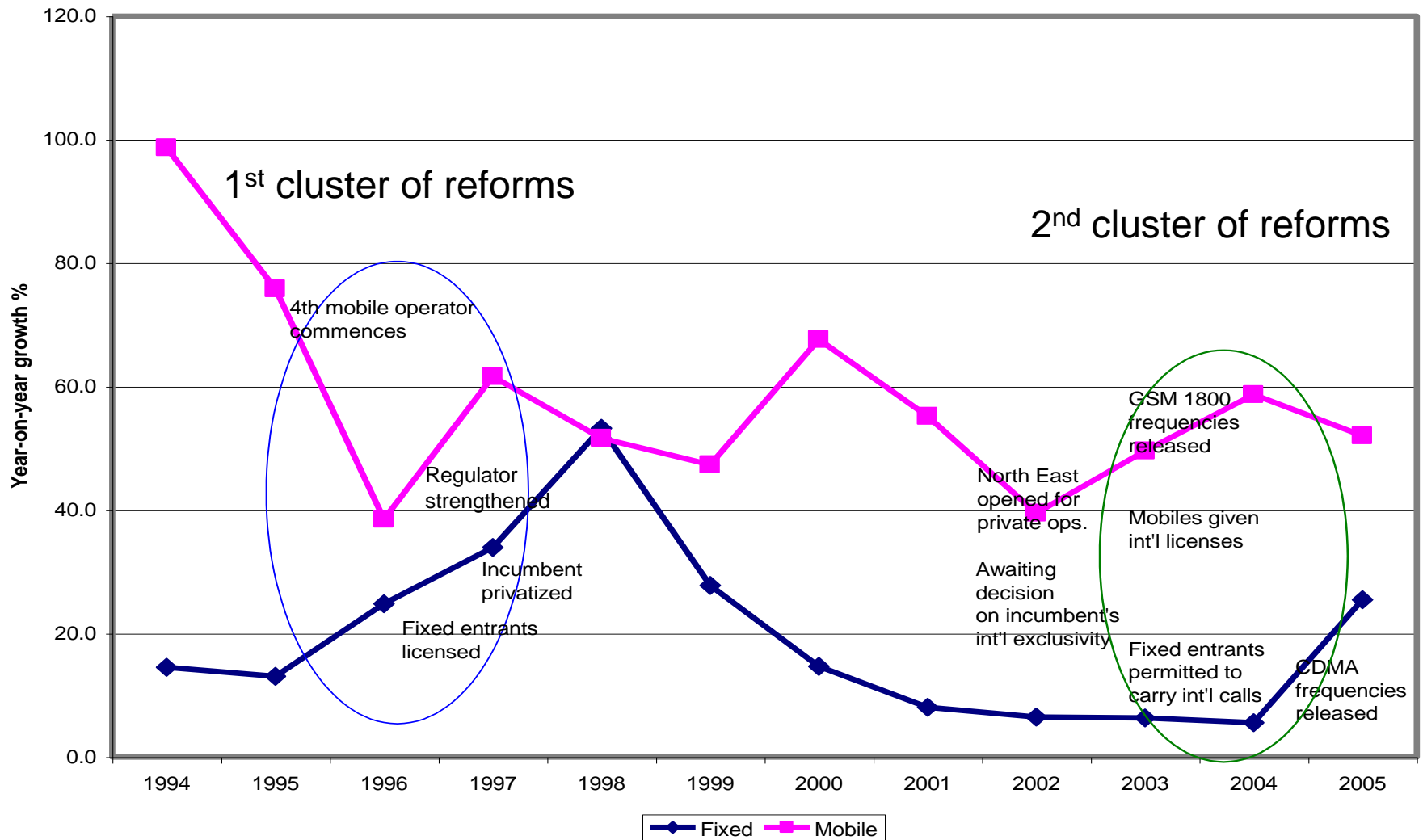
Ooredoo

- 84% voice & data coverage by five year
- 240,000 SIM sales points
- 720,000 sales points for prepaid top-ups
- Peak prepaid voice < 35 MMK/mt (on-net) & 45 MMK (off-net)
- SIM < 1500 MMK
- 10,000 telecenters + schools & hospitals
- 99.9% employees Myanmarese by five years

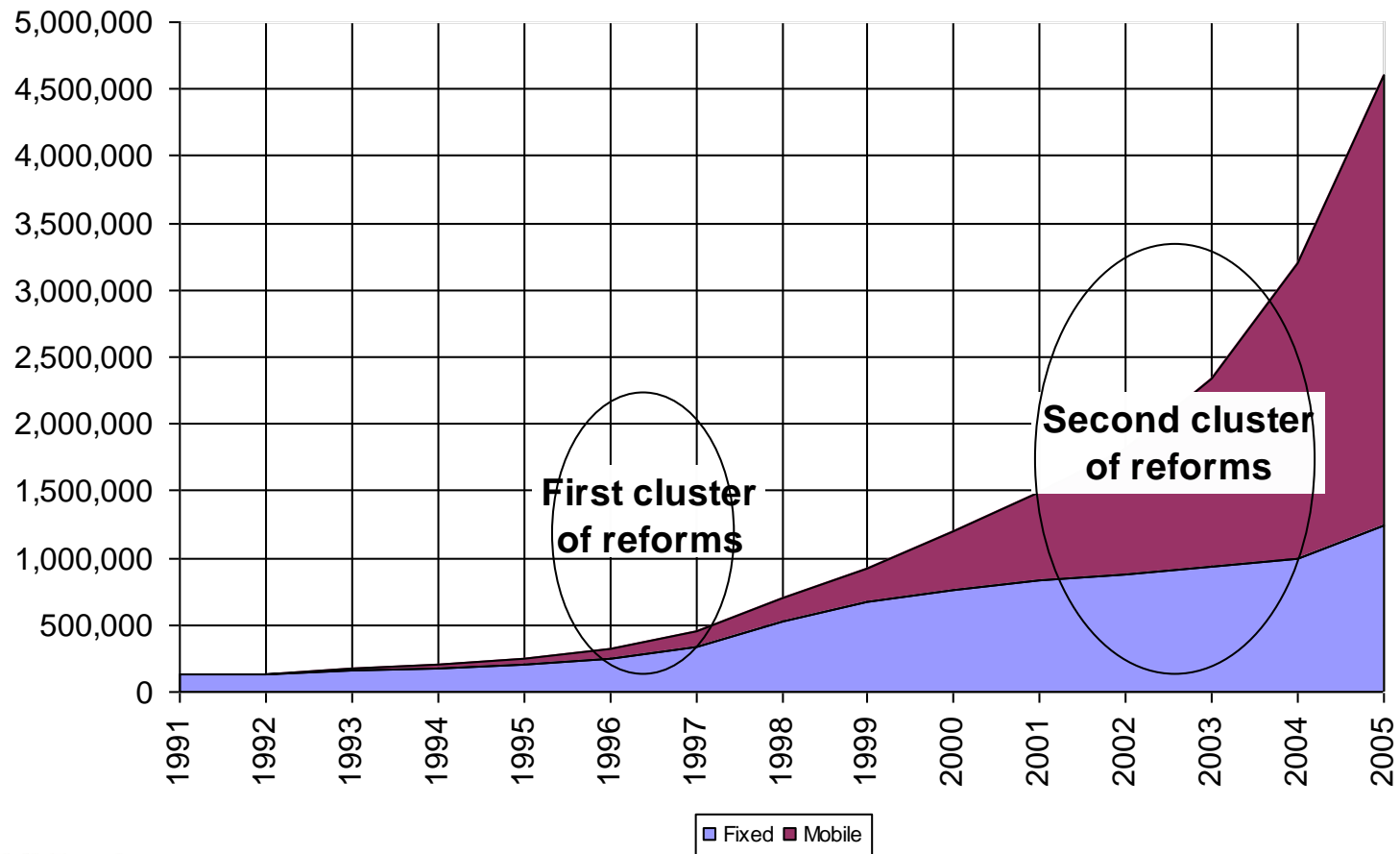
What can regulation contribute to achieving these objectives?

- An environment that minimizes regulatory risk
- Fair procedures to ensure commitments given at time of licensing are kept
- Effective mechanisms to safeguard consumers in an imperfectly competitive market
- Facilitation of productive harnessing of dynamism of global technological and market forces

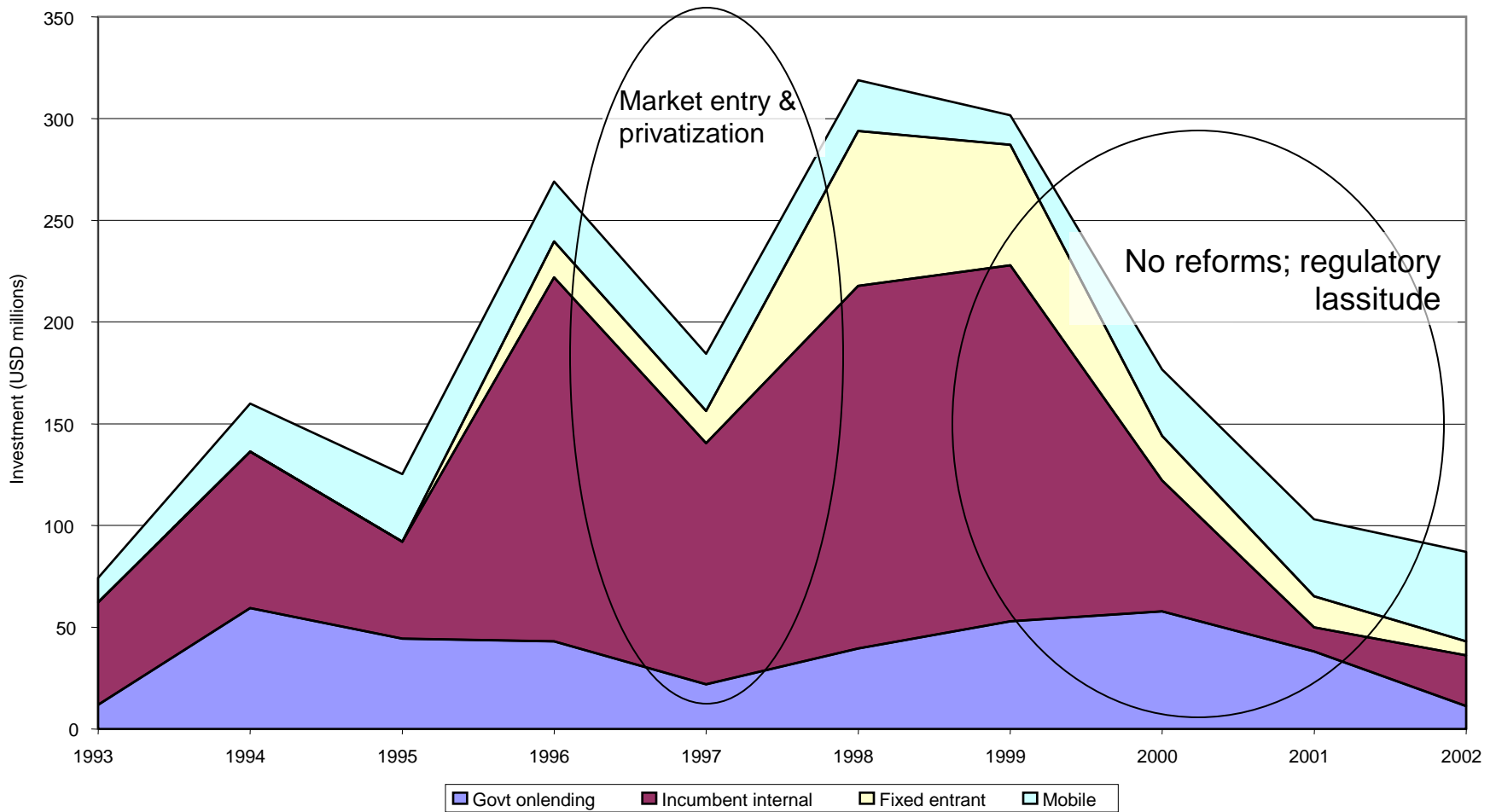
Year-on-year growth & reform actions, Sri Lanka 1994-2005



Growth in connectivity, 1991-2005



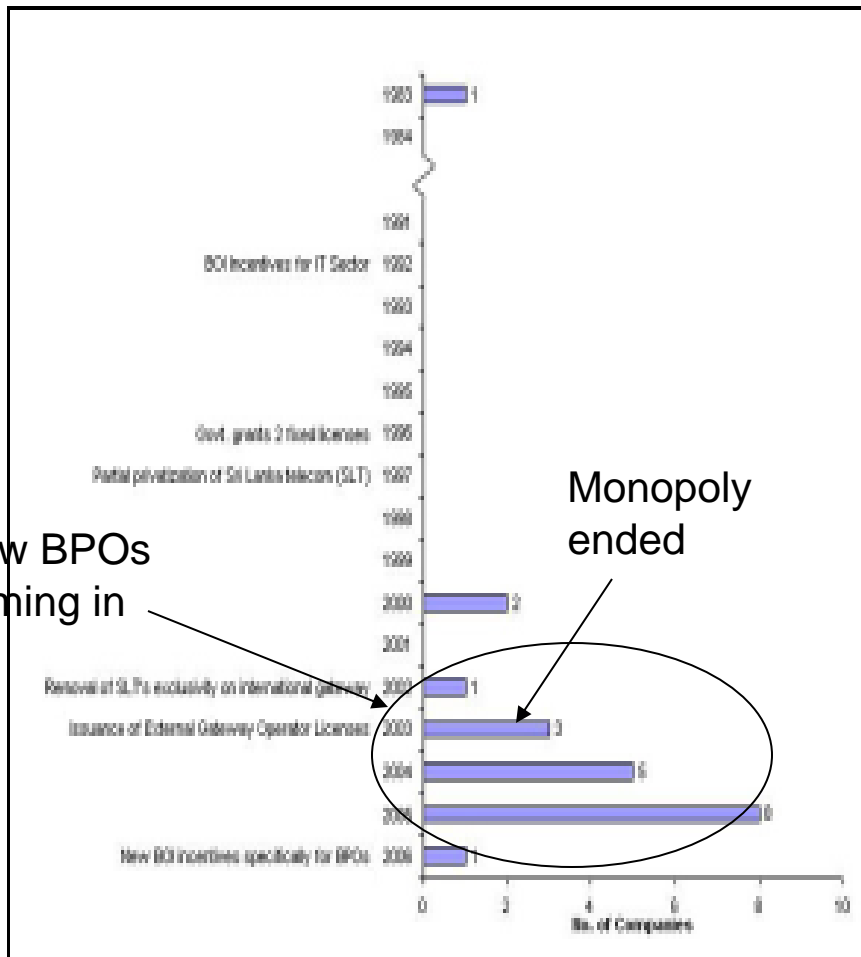
What drives expansion in connectivity: Investment, 1993-2002



Other benefits of market reforms

- 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)

Business Process Outsourcing (BPO) industry started



- Sri Lanka similar to South India, but missed the BPO wave
- By 2006, 13.2 million USD invested in BPOs*
- 13,000 persons generated USD 98 million in export earnings in 2010**

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

** <http://www.lankabusinessonline.com/news/sri-lanka-it-and-ites:--cheap-is-not-enough/1434665223>

Government actions affecting investment, and thereby sector performance

- Government cannot eliminate market risk
 - Duopolies, monopolies, exclusivities are examples
 - Cause long-term bad effects
- Government must reduce regulatory risk
 - Term of art that is not limited to actions by regulatory agency
 - Actions to make market-entry rules rational and transparent (policy-regulation)
 - Actions to improve regulatory environment (regulator)
 - Also, actions to make taxation and other general rules more coherent and transparent (government)

What is regulatory risk?

- Likelihood of administrative expropriation
- What is administrative expropriation?
 - Expropriation other than nationalization
 - May take forms such as
 - Setting prices $<$ long-run average costs
 - Mandates re investment/equipment purchases
 - Conditions in labor contracts

Why are regulatory risks high in infrastructure industries?

- High proportion of costs are sunk costs
 - Willing to operate as long as operating costs covered, even if investment not recovered
- Broad distribution of consumers makes pricing/access inherently political
- Small number of suppliers → monopoly/oligopoly; leading to vulnerability to public pressure
 - Exacerbated by foreign investment

Black-letter law is necessary condition

- Experience during licensing showed the importance of having a legal framework

But implementation is what matters

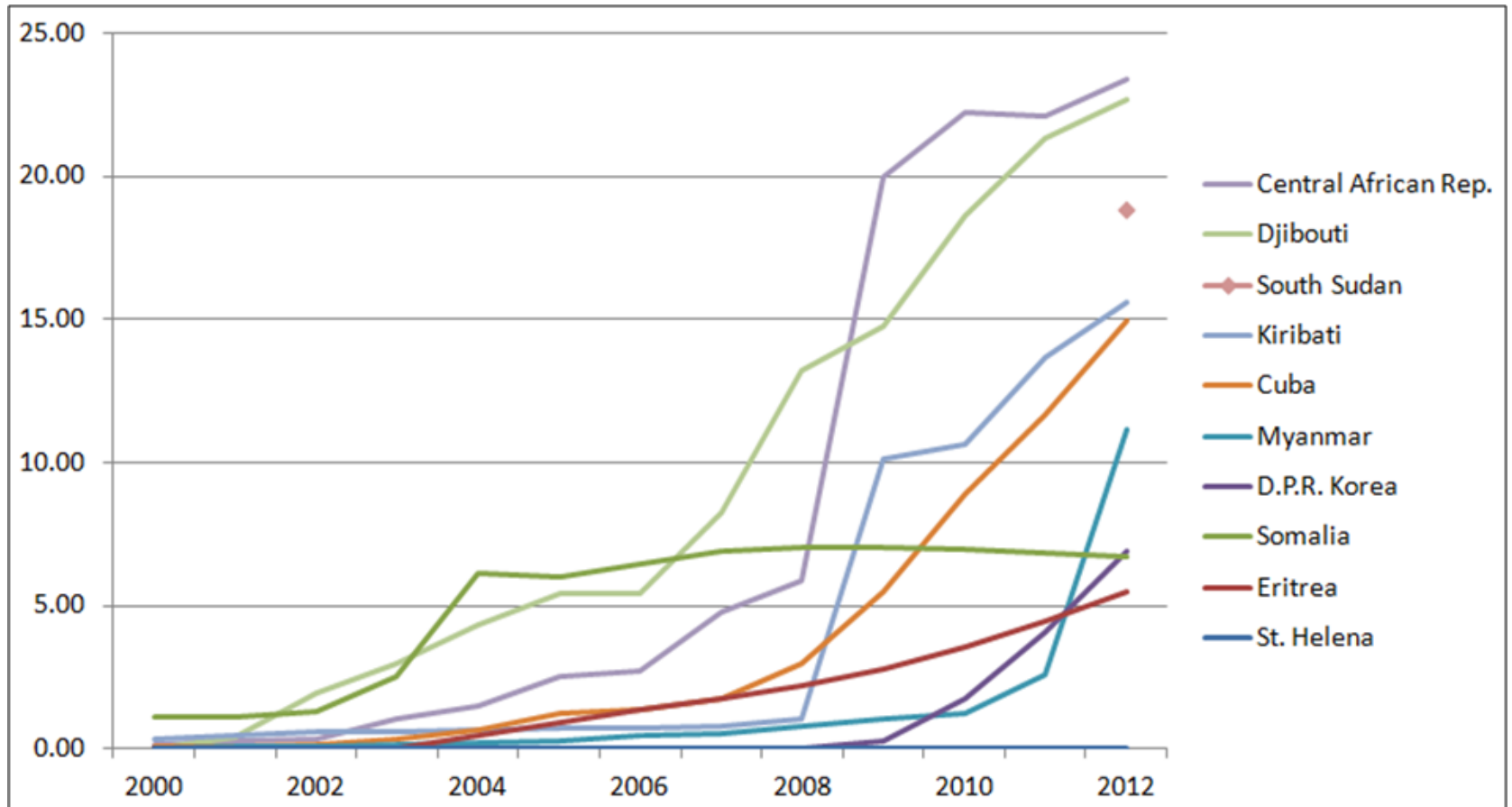
- All the laws and regulations will mean little unless regulator performs
- Transparent, efficient, consultative action
- Communication of those actions to all stakeholders so that legitimacy is built up

ITU INDICATORS: WHAT TO THINK ABOUT

Value & weaknesses of ITU data

- Operators generate data; report to “national administrations”; who then report to ITU
 - Definitions are not always consistently applied
 - Sometimes estimates are used
 - Some lags due to multiple links in reporting chain
- But given easy availability & stature of ITU, very heavily used by international & national actors in decision making
 - Also feed into composite indices such as ICT Development Index (IDI); Network Readiness Index (NRI); and E Readiness Index (ERI)
- Data (should) guide national-level actions; international perceptions affect investment and other actions that influence domestic outcomes
 - Therefore, important to pay attention to compilation of data, especially quality and timeliness
- Focus here is on mobile SIMs/100; other indicators will become important for Myanmar over time

List that Myanmar will graduate from: Ten countries with lowest SIMs/100, 2000-12



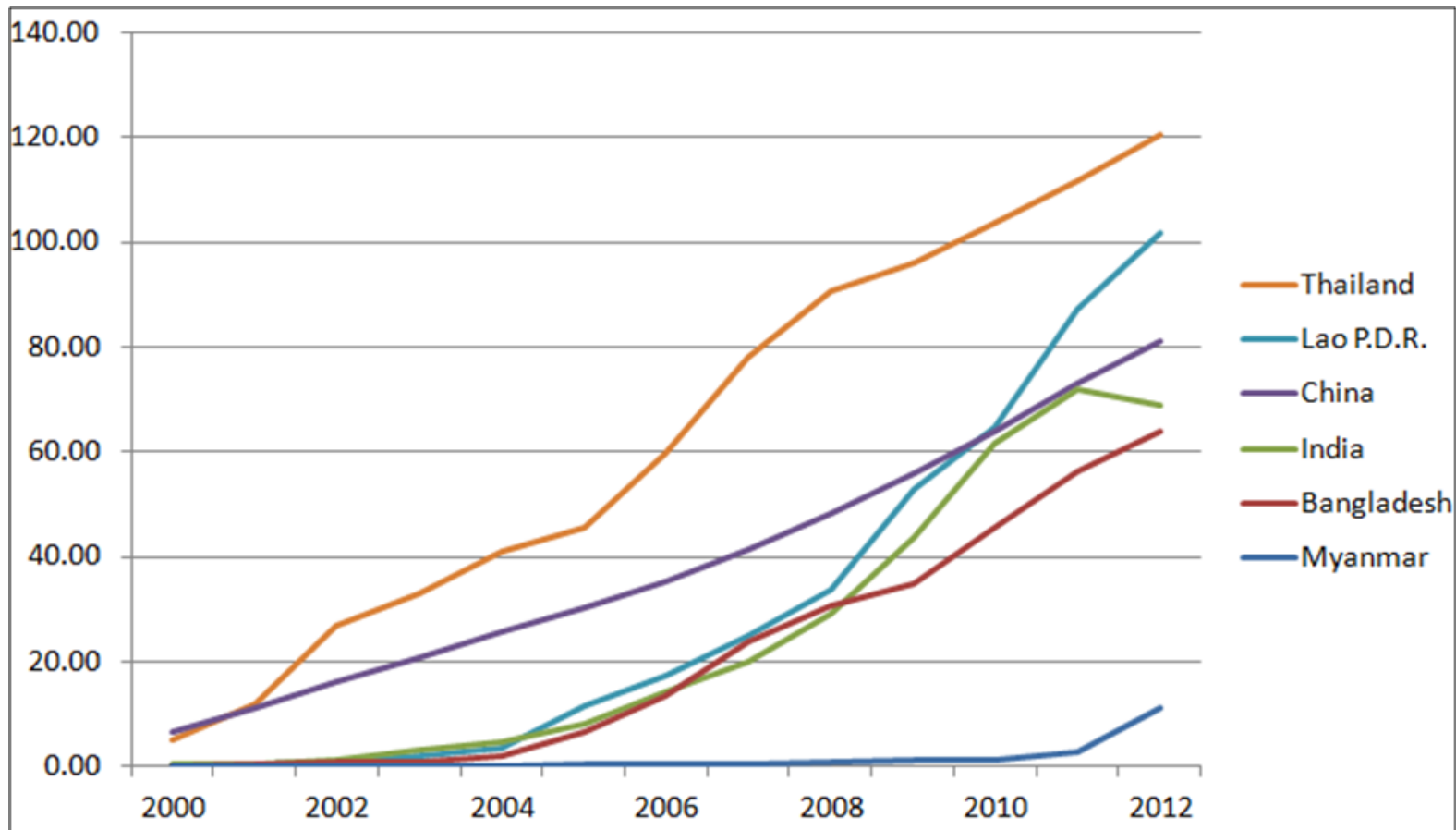
SIM numbers in tabular form, 2008-12, including growth rates

	2008	2009	2010	2011	2012	5 yr CAGR	Growth 2011-2012
St. Helena	-	-	-	-	-	NA*	NA
Eritrea	108,631	141,130	185,275	241,939	305,283	29%	26%
Somalia	627,000	641,000	648,200	655,000	658,000	1%	0%
D.P.R. Korea	0	69,261	431,919	1,000,000	1,700,000	NA*	70%
Myanmar	367,388	502,005	594,000	1,243,619	5,440,000	96%	337%
Cuba	331,736	621,156	1,003,015	1,315,141	1,681,645	50%	28%
Kiribati	1,000	9,907	10,595	13,788	16,000	100%	16%
South Sudan			1,500,000	1,800,000	2,000,000	NA*	11%
Djibouti	112,848	128,776	165,613	193,049	209,000	17%	8%
Central African Rep.	250,000	863,641	979,232	992,444	1,070,220	44%	8%

Discussion

- St Helena is an isolated island in S Atlantic without any mobile service
- Most in this set, except CAR (4 operators), had not introduced competition by 2012
- Easy to get spectacular growth in low-penetration, small-population countries
 - At low penetration levels, positions are volatile: every line, except St Helena's, cuts another
- Several countries, including Myanmar report numbers ending in 000, indicating ITU estimates
 - Population numbers matter in arriving at SIMs/100 estimate
- Myanmar has highest year-on-year (2011-12) & 2nd highest five-year CAGR
 - Good, but all rests on accuracy of estimated 337% growth in 2011-12

Mobile SIMs/100 in Myanmar & its neighbors, 2000-12



Discussion

- High volatility even though neighbors, except Laos are not small in population
- SIMs/100 above ~80 may not be meaningful
- Jipp's Law (1963) establishing correlation between telecom development (measured by connections/100) and economic development (GNI per capita), explains relative positions, except for Thailand & Laos
 - Jipp showed correlation, not causation. Current research suggests ICT growth can drive economic development → Myanmar have ICT rankings > than GNI per capita rankings
 - Thailand went from 5 to 80 in 7 years; No reason Myanmar cannot in 5 years

Myanmar's neighbors, ranked by GNI per capita, 2012 (MN not reported by World Bank)

	GNI per capita (Atlas Method), USD
China	5,740
Thailand	5,210
India	1,530
Laos	1,260
Bangladesh	840