ICT contribution to Sri Lanka's and the region's logistics sector

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(drawing from Abu Saeed Khan; After Access Team & Shazna Zuhyle of LIRNEasia & ITU-ESCAP)

Chartered Institute of Logistics and Transport Sri Lanka, 19 September 2018

LIRNEasia
Pro-poor. Pro-market.

IDRC CRDI
Canada

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UKaid
from the British people

Economic common sense in the 21st Century

- We have to participate in the global economy
- We have to export goods and services
  - We have to import in order to export
  - We have to participate in Global Production Networks

- China was once the exemplar of self-reliance and a model for many in Sri Lanka
  - But this was President Xi Jinping at Davos, in January 2017 ➔

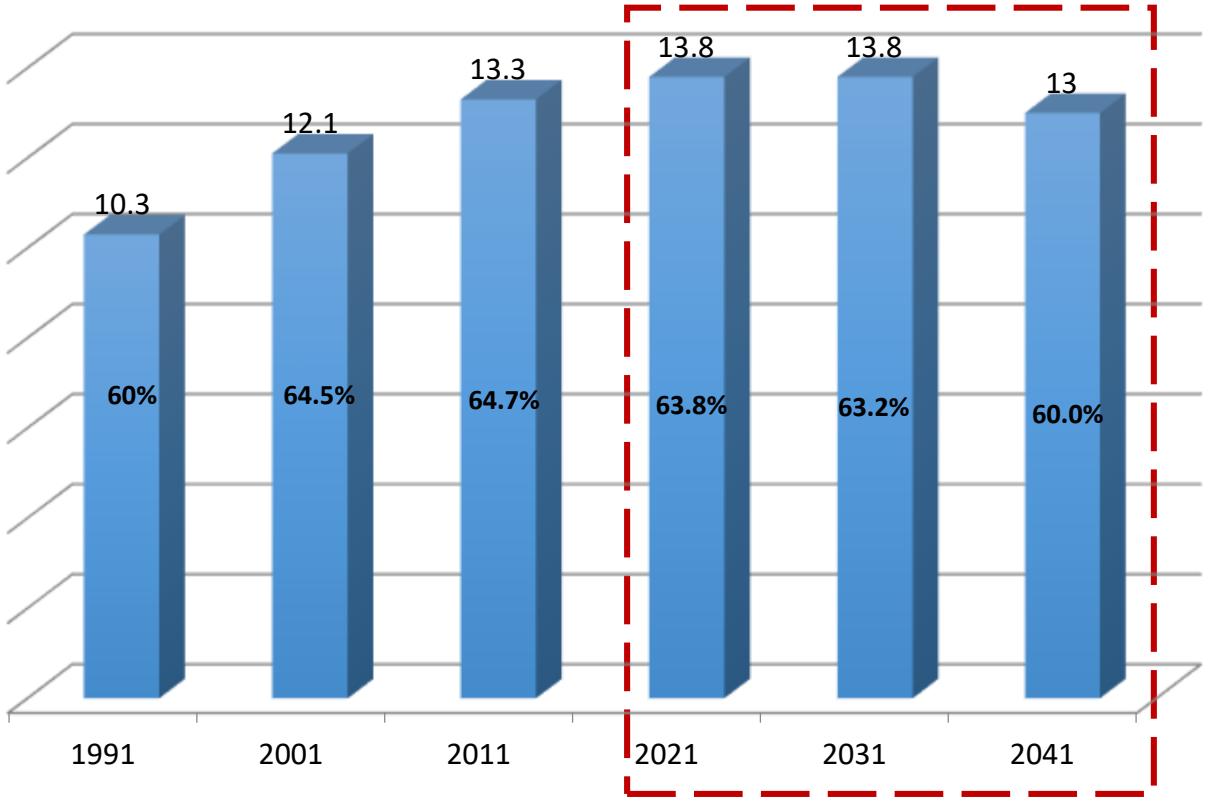
- *There was a time when China also had doubts about economic globalization, and was not sure whether it should join the World Trade Organization. But we came to the conclusion that integration into the global economy is a historical trend. To grow its economy, China must have the courage to swim in the vast ocean of the global market. If one is always afraid of bracing the storm and exploring the new world, he will sooner or later get drowned in the ocean. Therefore, China took a brave step to embrace the global market. We have had our fair share of choking in the water and encountered whirlpools and choppy waves, but we have learned how to swim in this process. It has proved to be a right strategic choice.*
- *Whether you like it or not, the global economy is the big ocean that you cannot escape from. Any attempt to cut off the flow of capital, technologies, products, industries and people between economies, and channel the waters in the ocean back into isolated lakes and creeks is simply not possible. Indeed, it runs counter to the historical trend.*

Source: https://america.cgtn.com/2017/01/17/full-text-of-xi-jinping-keynote-at-the-world-economic-forum

What are Sri Lanka's comparative advantages?

- High labor and energy costs make it difficult to compete in manufacturing
- Even if costs were low, labor availability would be a problem
  - Demographic trends
  - Low participation of women in labor force (35.9 percent; almost half that of Viet Nam)
  - Preference of young people for service-sector employment over agriculture and manufacturing

Productive population Age (15-59; in millions) will be flat and then declining, 2021-41



Source: Professor Indralal de Silva

Sri Lanka's female labor force participation is unusual compared to peers

Country	2013		2014		2015		2016		2017	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Ghana	79.32	49.64	79.17	49.62	79.03	49.60	78.96	49.59	79.13	49.52
Indonesia	84.08	50.57	83.72	50.45	82.71	48.88	81.95	50.76	81.80	50.73
Sri Lanka	75.94	35.69	76.29	34.76	75.40	34.91	74.37	35.19	74.12	35.05
Thailand	80.02	63.01	79.32	62.45	77.76	60.95	77.26	60.65	77.25	60.46
Vietnam	82.94	73.59	83.47	73.90	83.90	73.37	83.48	73.20	83.47	73.24

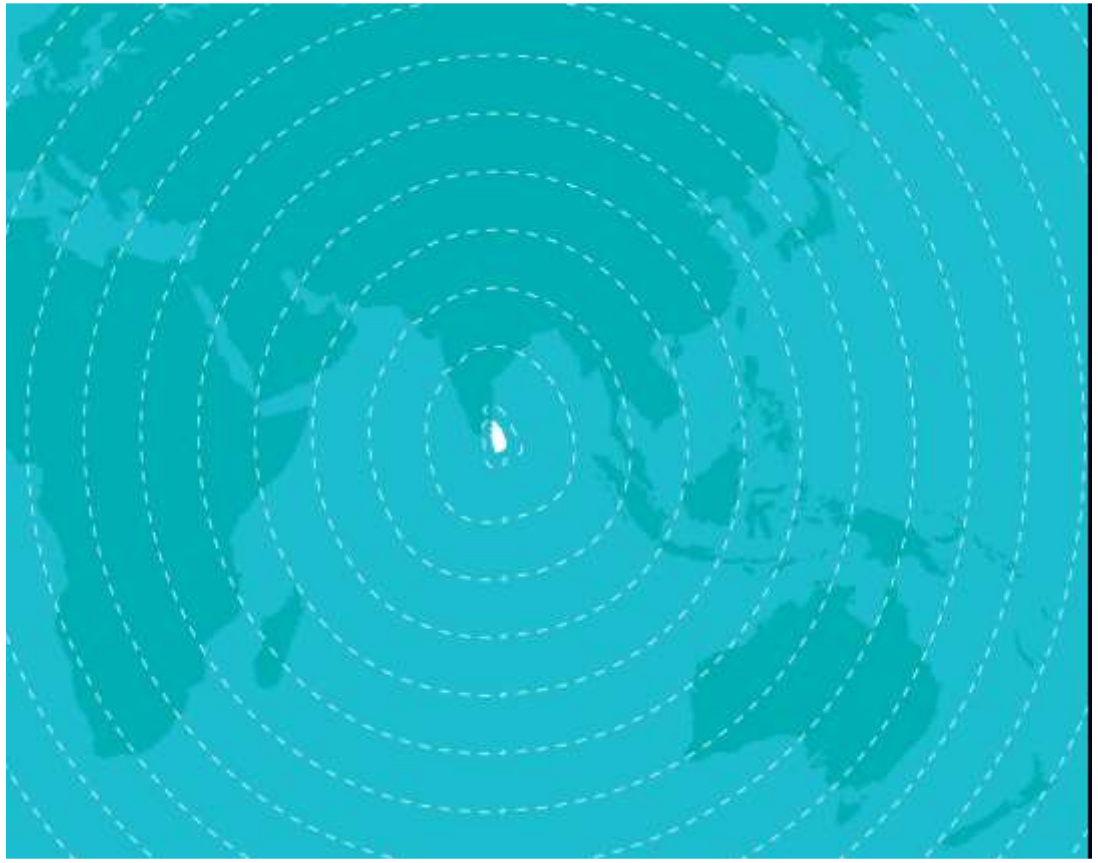
Source: World Bank, (% of female & male population ages 15+)
https://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS?locations=GH

Focus on services (high value manufacturing & agriculture)

Logistics is key to all

Hub as central metaphor

- ***"Our vision is to make Sri Lanka a rich country by 2025. We will do so by transforming Sri Lanka into the hub of the Indian Ocean, with a knowledge-based, highly competitive, social-market economy."***



Source: Vision 2025
http://www.pmoffice.gov.lk/download/press/D00000000061_EN.pdf

Used since 2010: Does this constitute consensus?

Vision 2025

- Our vision is to make Sri Lanka a rich country by 2025. We will do so by transforming Sri Lanka into the hub of the Indian Ocean, with a knowledge-based, highly competitive, social-market economy. . . . We will position Sri Lanka as an export-oriented economic hub at the centre of the Indian Ocean. We recognise the fundamental reality that Sri Lanka has a domestic market of only 20 million consumers with a modest per capita income, and must rely on external demand for sustained, high, and long-term growth. We will strategically position Sri Lanka as the hub of the Indian Ocean, securing opportunities for local businesses in global production networks (GPNs). This outward-looking approach will increase the efficiency of the domestic economy . . .

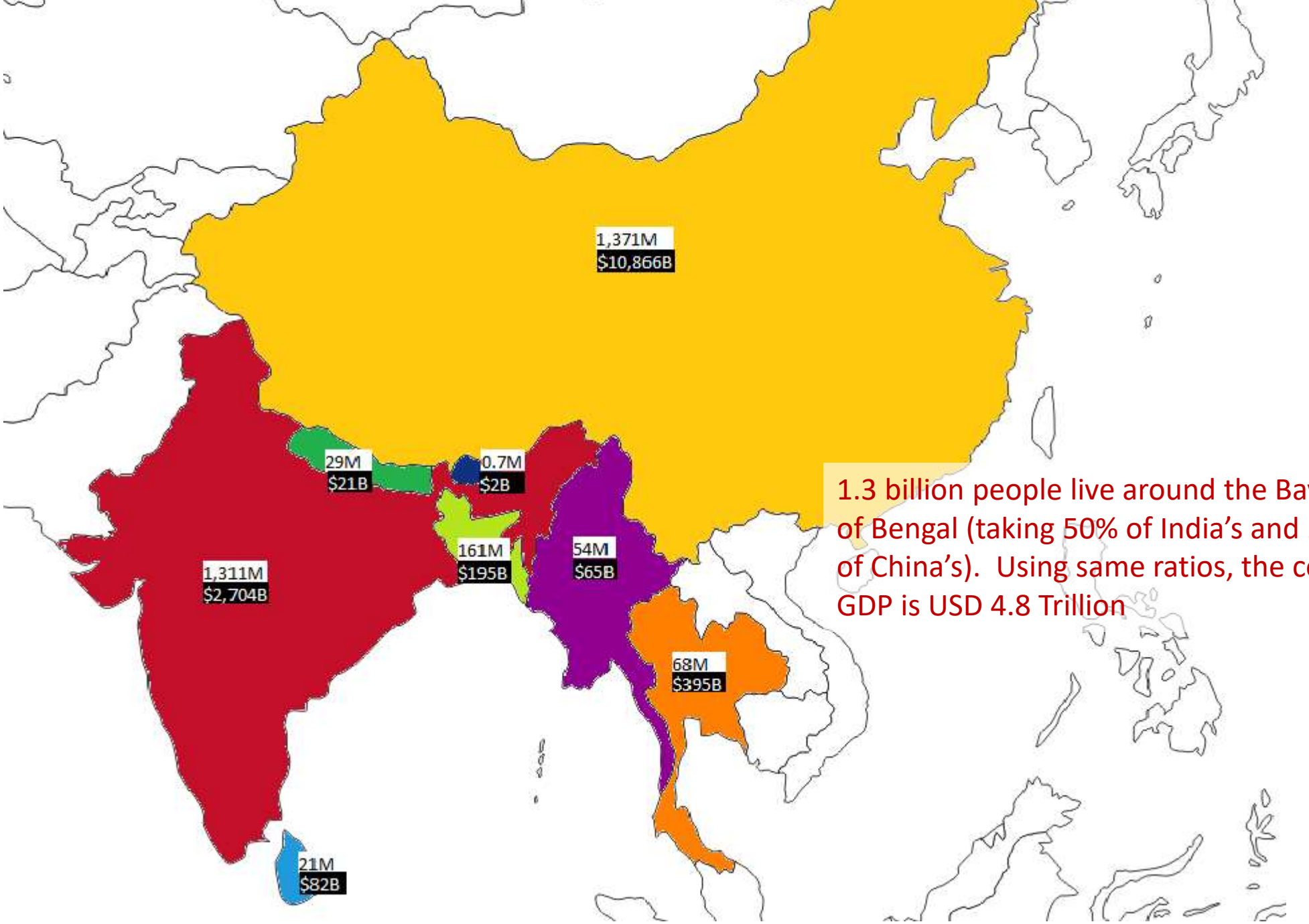
Mahinda Chinthana

- The objective of our next massive leap forward is to transform Sri Lanka into a strategically important economic centre of the world. My determination therefore, is to transform Sri Lanka to be the Pearl of the Asian Silk Route once again, in modern terms using our strategic geographical location effectively. I will develop our Motherland as a Naval, Aviation, Commercial, Energy and Knowledge hub, serving as a key link between the East and West.

Mercantilist, insular thinking has led to facile understanding of hub concept as evidenced by myopic opposition to trade agreements

- "A hub is the central part of a wheel, rotating on or with the axle, and from which the spokes radiate. Its significance lies in its relationship to the rest of the wheel. The wheel, not the hub, is the unit of analysis.
- In the same way, the metaphorical hubs of the government's economic strategy cannot be implemented without taking the "rest of the wheel" into account. As long as our thinking does not transcend this little island of 20 million people, the chances of success are limited. As long as we do not understand that hub strategy necessarily involves two-way flows that benefit all parts of the system, success can only be partial and will depend on happenstance."

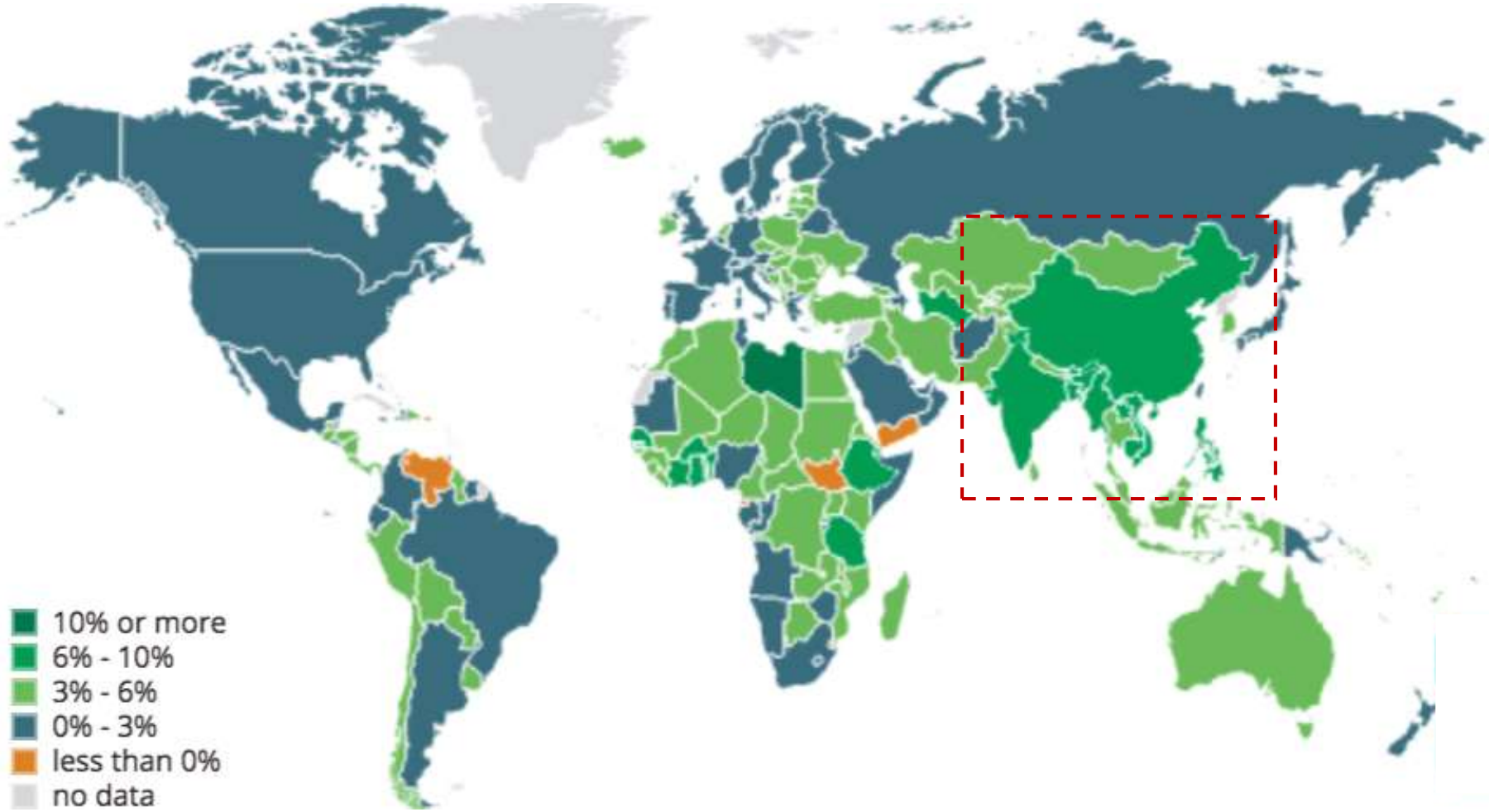
Source: Sri Lanka's hub strategies reassessed, Daily FT, 24/09/14; also in Ravaya
http://www.mfa.gov.lk/index.php/en/news-from-other-media/5278-sri-lankas-hub-strategies-reassessed



1.3 billion people live around the Bay of Bengal (taking 50% of India's and 25% of China's). Using same ratios, the combined GDP is USD 4.8 Trillion

Half of the fastest growing economies in the world are around Bay of Bengal)

Economy	Projected growth rate
Libya	16.4
Ethiopia	8.5
Côte d'Ivoire	7.4
India	7.4
Rwanda	7.2
Bhutan	7.1
Senegal	7
Bangladesh	7
Macao SAR	7
Cambodia	6.9
Myanmar	6.9



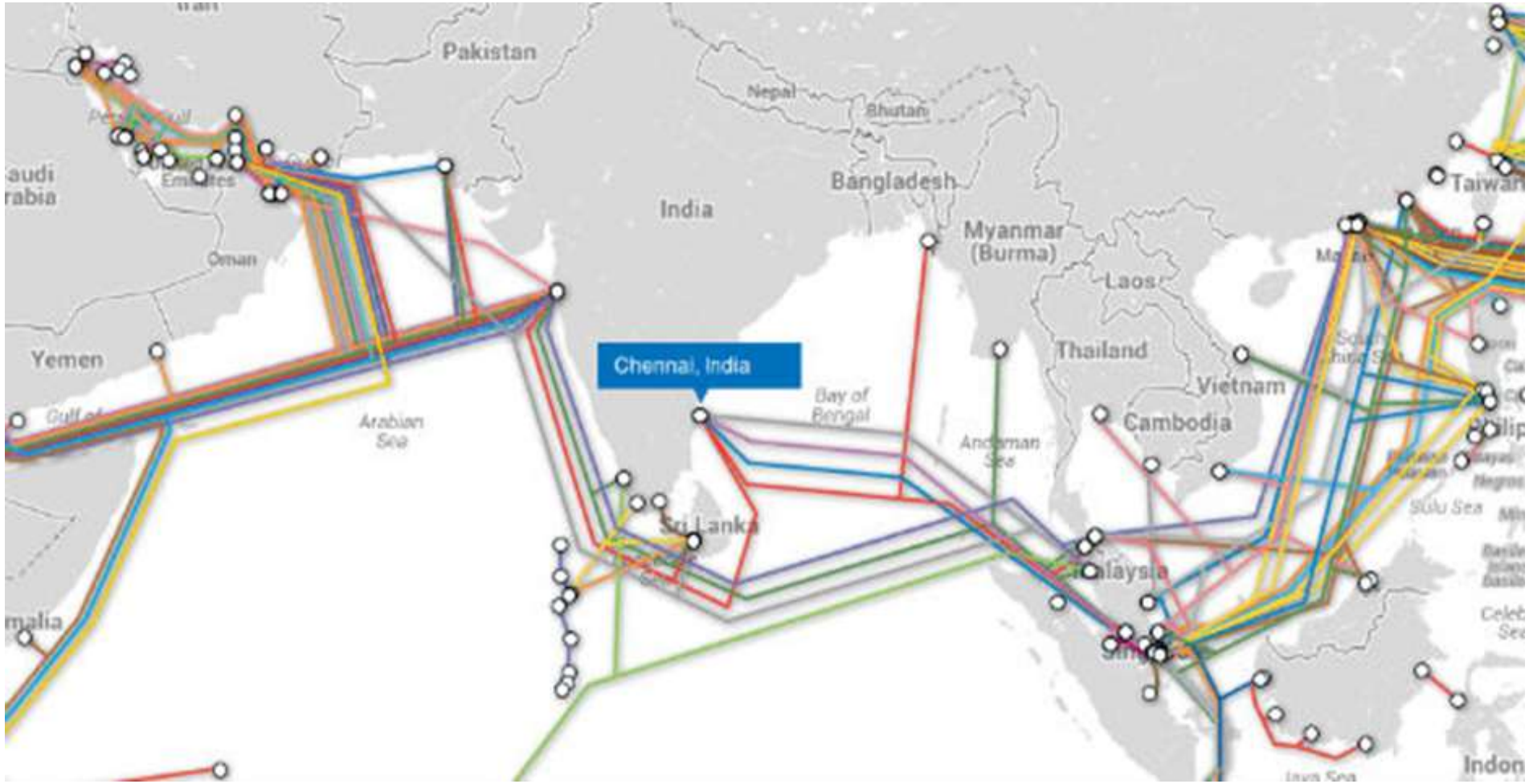
Source: IMF DataMapper, 2018
https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD

What do ICTs have to do with being a hub?

- Coordination and control across time and space
  - Can they be achieved without ICTs?
  - Do I add value by talking about automation of Customs procedures, etc.?
- You know the logistics success story centered on the Port of Colombo (26th largest container port as of 2016; perhaps third largest Indian port . . . .)
  - Could this be achieved/sustained without seamless connectivity and advanced IT systems?
- Colombo is a sub-regional air passenger hub
  - It too depends on ICTs

How is our neighborhood?

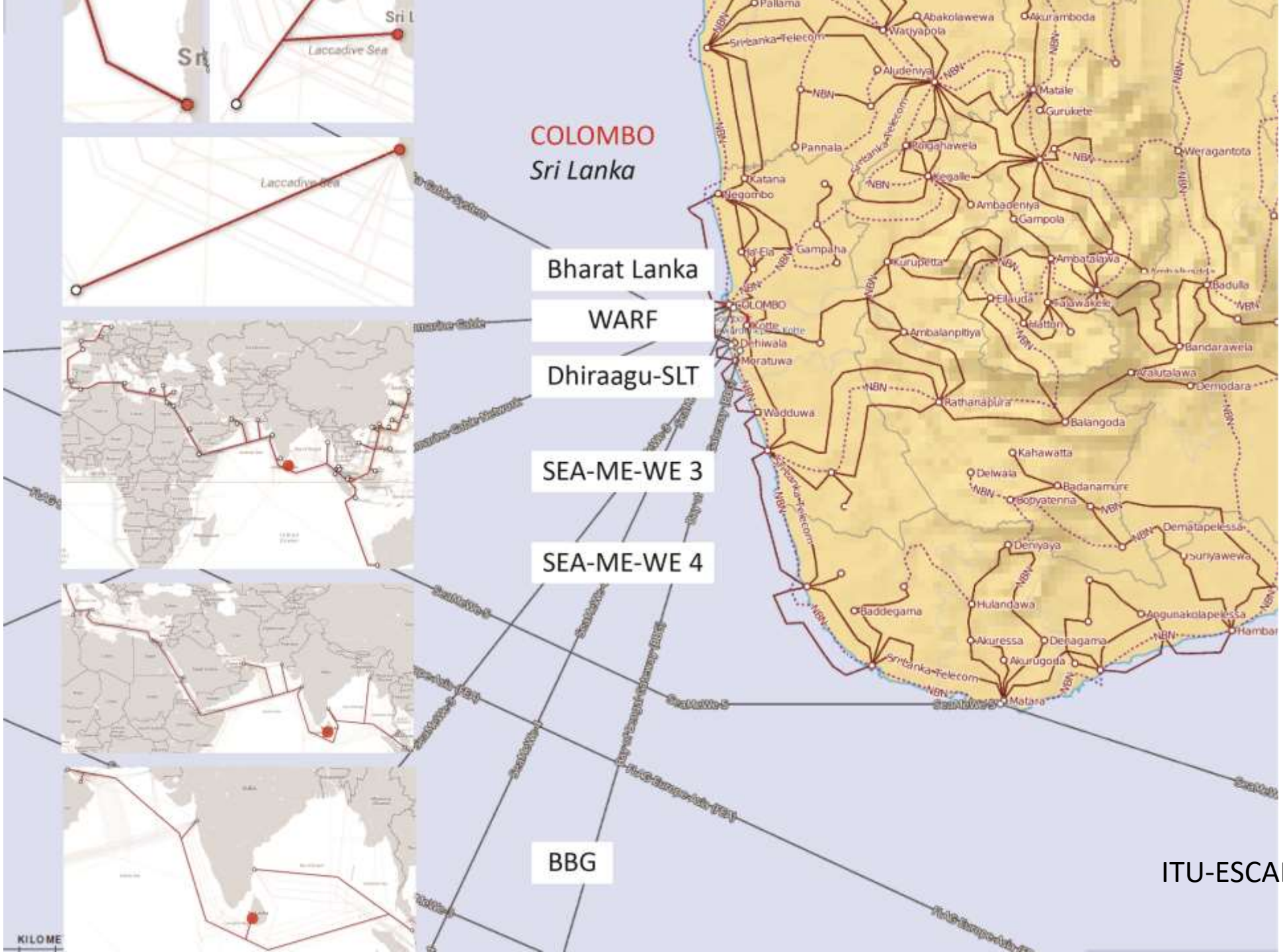
Until 2017, one cable each to Bangladesh & Myanmar; Chennai is still the only connected place on India's coast on the Bay



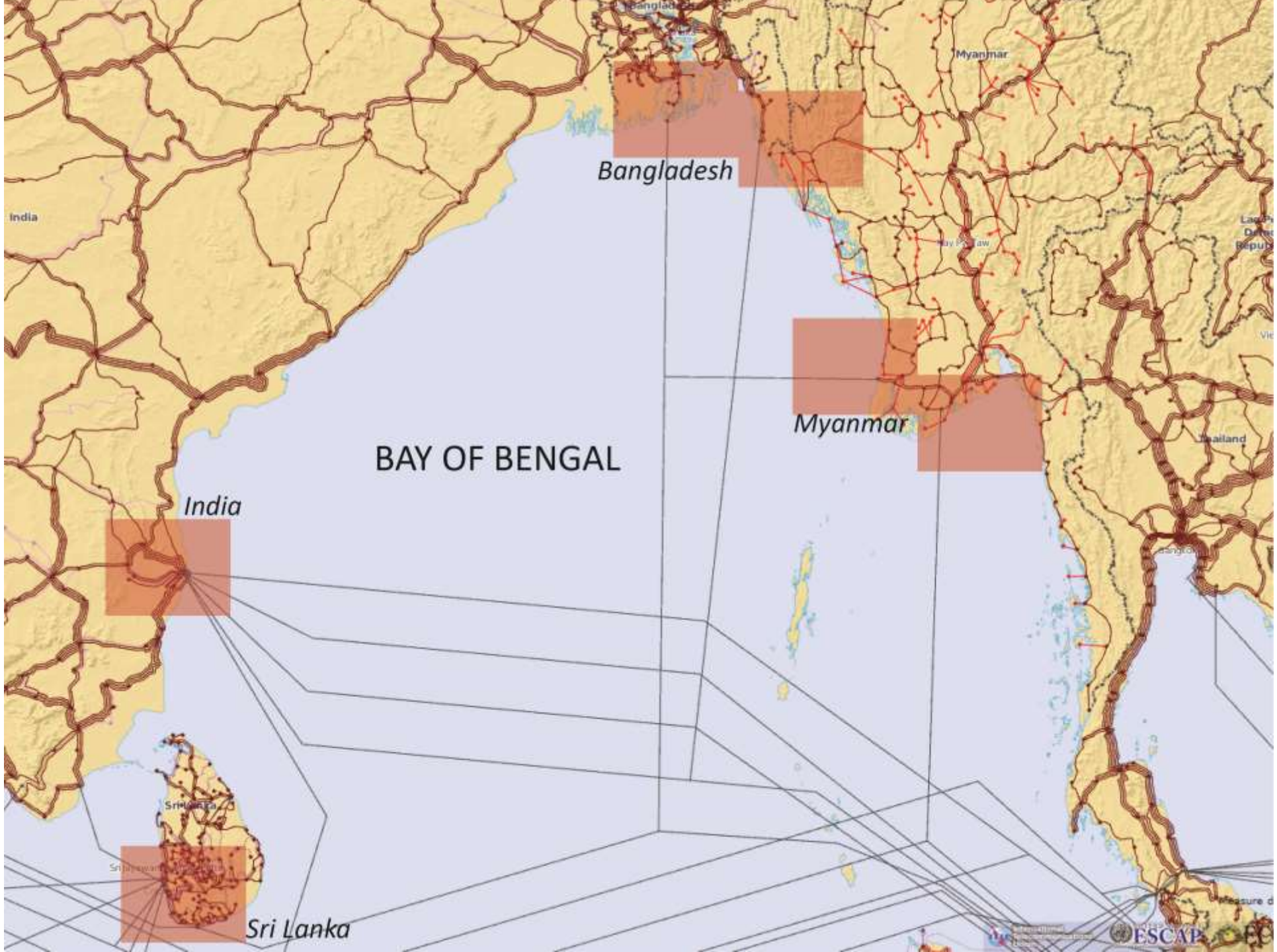
Source: Telegeography

Do the necessary conditions exist?

Availability / Redundancy	
Multiple cables	Yes
Multiple operators	Yes
Multiple cable stations	Yes
Multiple Tier 3 data centers	Yes, 2
Conditions for disaster recovery	Yes


COLOMBO
Sri Lanka
Bharat Lanka
WARF
Dhiraagu-SLT
SEA-ME-WE 3
SEA-ME-WE 4
BBG
Laccadive Sea
Sri Lanka-Telecom
NBN
COLOMBO
Matara
Galle
Kandy
Negombo
Gampaha
Kurunegala
Ratnapura
Badulla
Hambantota
Batticaloa
Trincomalee
Jaffna
Mannar
Vavuniya
Anuradhapura
Polonnaruwa
Ampara
Kalmunai
Nuwara Eliya
Kegalle
Matale
Puttalam
Kilinochchi
Mullaitivu
Kalutara
Moratuwa
Dehiwala
Wadduwa
Ambalangoda
Hikkaduwa
Tangalle
Hambantota
Weligama
Matara
KILOME

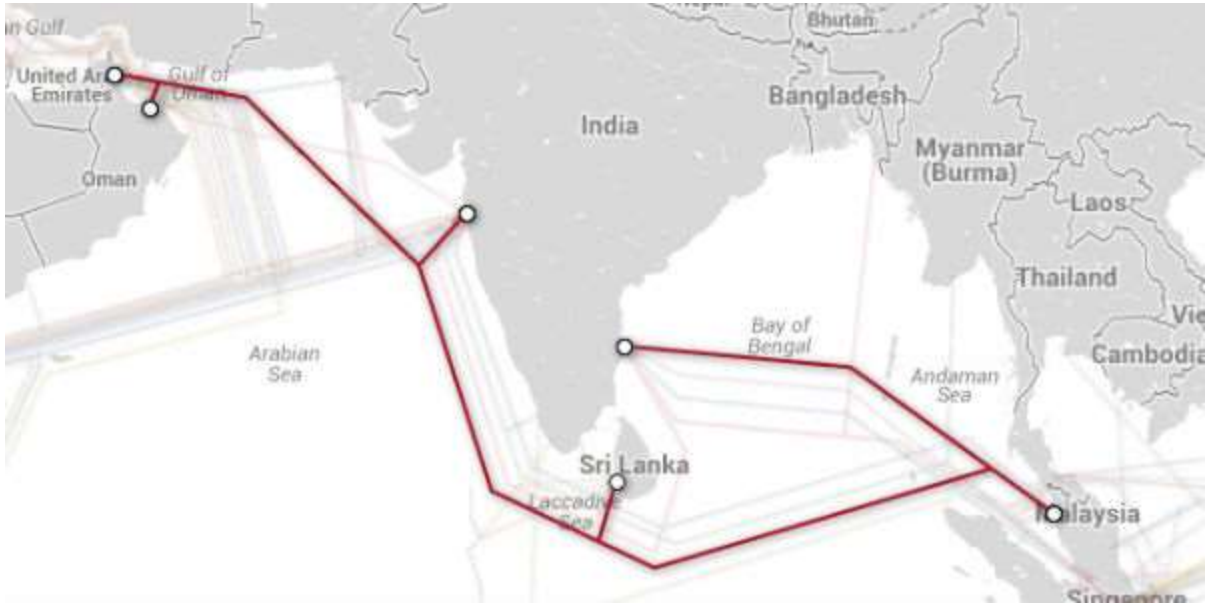
ITU-ESCAP


Bangladesh
Myanmar
India
BAY OF BENGAL
Sri Lanka
ESCAP

SEA-ME-WE 5

- New landing station in Matara, close to southernmost point of Sri Lanka
  - Reduces latency because for first time, Sri Lanka will be directly connected to a consortium cable (previous connections through branch cables)
  - Reduce vulnerability by increasing number of cable stations
- Hambantota Ports host the submarine cable depot, which will improve speed of recovery from cable breaks in region

Bay of Bengal Gateway, with Dialog Axiata as local partner



Partners: Alcatel-Lucent, Vodafone Group, Omantel, Etisalat, Reliance Infocom, Dialog Axiata, Telecom Malaysia
Landing stations: Barka (Oman); Fujairah (UAE); Mumbai & Chennai (India); Ratmalana (Sri Lanka); Penang (Malaysia); Singapore

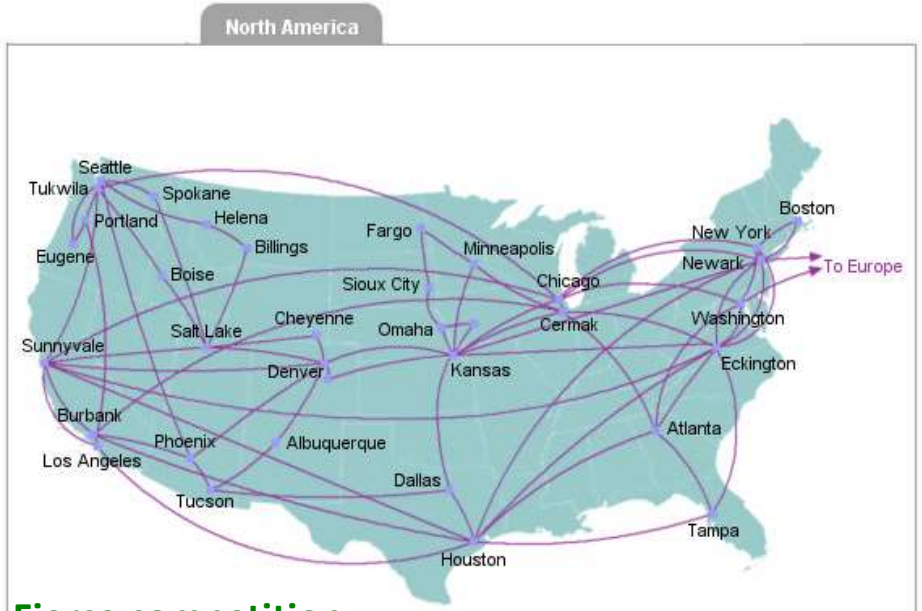
Bay of Bengal Gateway

- Hybrid terrestrial and submarine cable that bypasses Malacca, Suez and Hormuz choke points
- Will be commissioned by end 2014
- USD 30 million commitment from Dialog Axiata

Do the sufficient conditions exist?

Competition, leading to good quality and price	
Adequate competition	No co-location offered in cable stations; not mandated by regulator
Choice in last mile connectivity	Multiple fibers exist; But murky in law; incumbent has challenged in court
Transparency in pricing	No
Benchmarking with competitive locations	Much higher than Singapore or even Mumbai
Adequate swap and interconnection arrangements between data centers and other critical facilities	???

Why does Asia's bandwidth cost more?



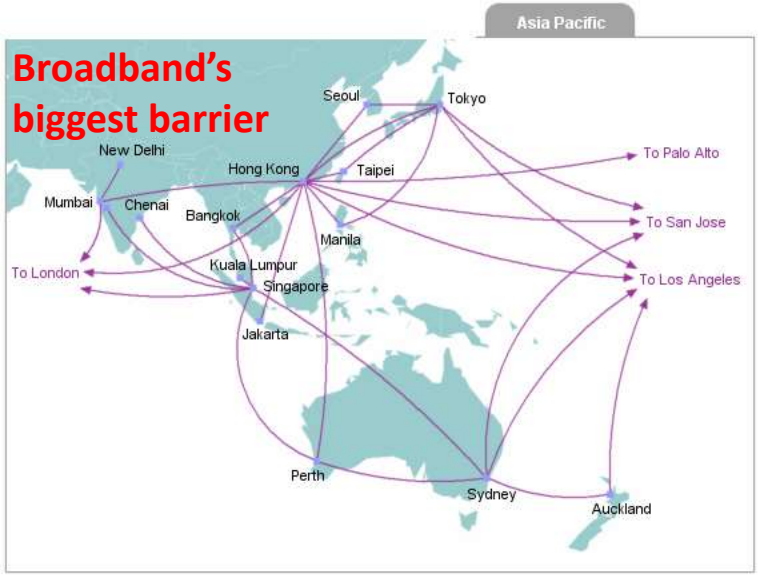
Fierce competition

- **Coast-coast terrestrial TX**

Very good competition

- **Terrestrial & submarine TX**

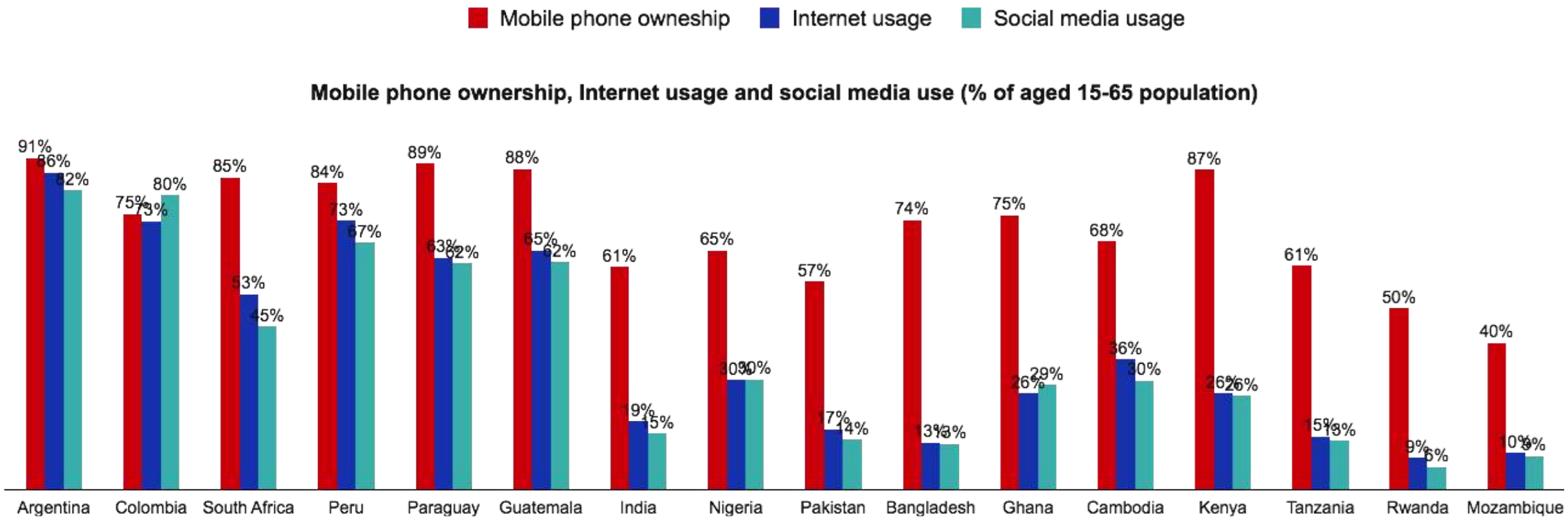
Poor competition



All submarine TX

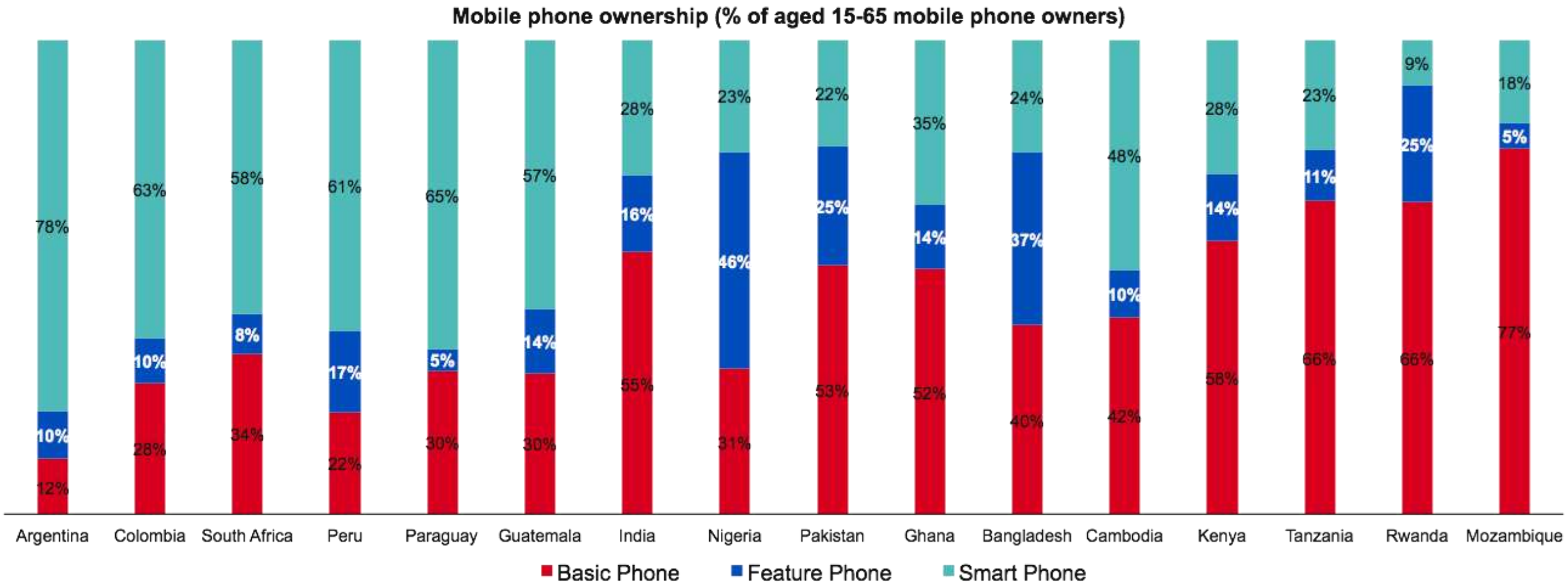
What about domestic networks?

Under 20% online in Asia; Internet use ≈ Social media (Nationally representative After Access surveys in Bangladesh, Cambodia, India, Pakistan, 2017. Nepal & Sri Lanka out in a few months)



Source: LIRNEasia, AfterAccess 2018
https://lirneasia.net/after-access

Even though mobile ownership is high, most users still with basic phones (our guess is that this will be ~40% for LK)



Source: LIRNEasia, AfterAccess 2018
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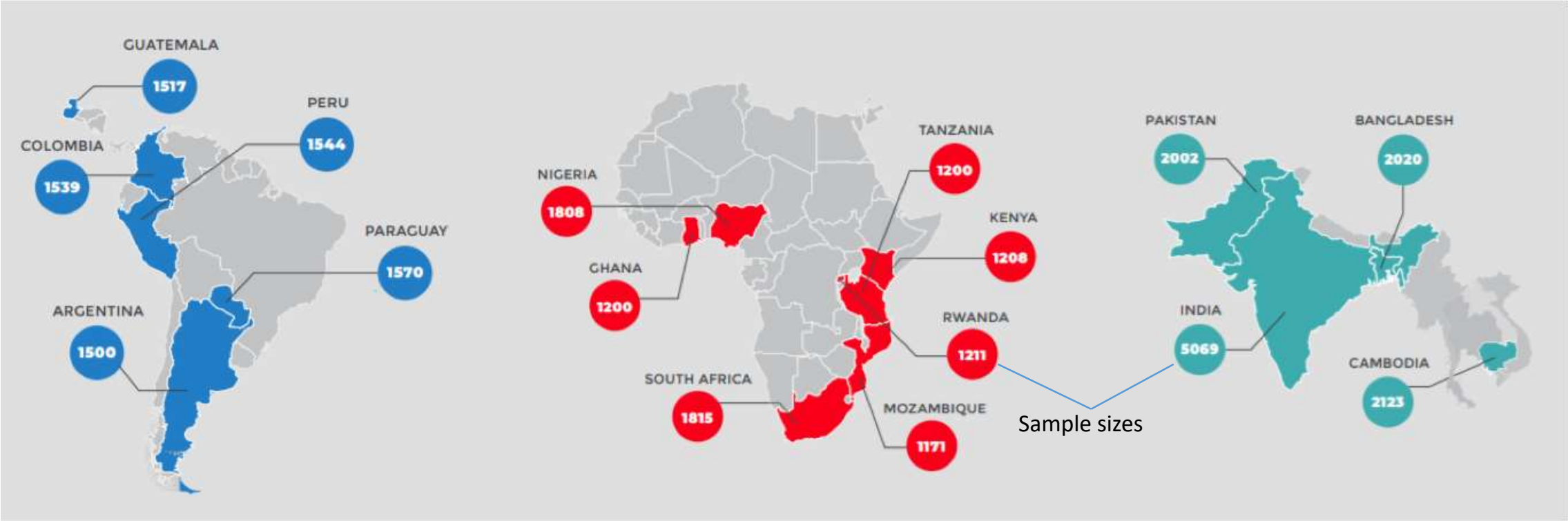
Affordability and lack of skill are barriers to access for those not online; Quality of service is an issue once they get online



Cyber Security | Affordability | Quality

Source: LIRNEasia, AfterAccess 2018
https://lirneasia.net/after-access

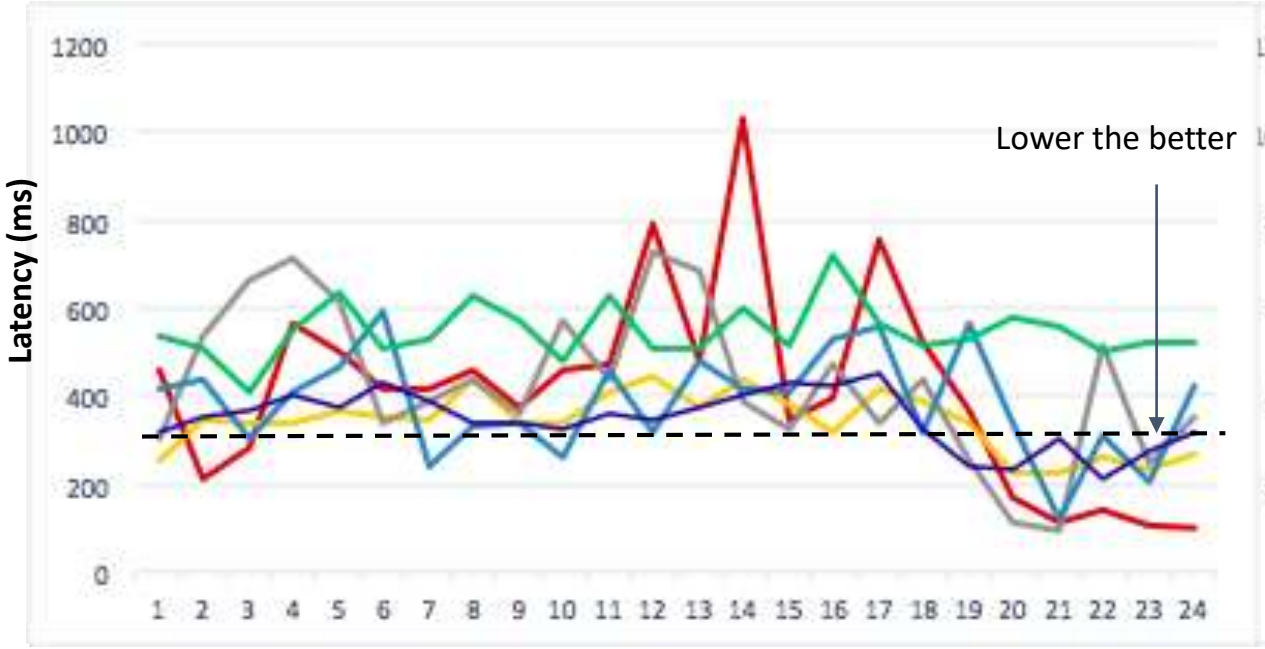
Sri Lanka offers some of the lowest prices for voice and data in the world

Country	Mobile Cellular (USD)	Fixed BB (USD)	Mobile BB - 500 MB data cap, prepaid via mobile handset (USD)	Mobile BB - 1GB data cap, postpaid via USB dongle (USD)
Afghanistan	4.8	14.73	5.16	5.16
Bangladesh	1.75	4.4	2.3	5.2
Bhutan	2.55	7.8	1.59	4.71
Cambodia	6.85	12	1	2
India	2.4	6.42	2.53	4.28
Indonesia	9.5	30.43	3.94	5.64
Maldives	6.08	20	6.83	13.73
Myanmar	1.85	18	2.38	5.53
Nepal	2.31	6.25	5.78	5.78
Pakistan	2.45	5.97	1.34	7.16
Philippines	9.57	21.04	6.3	6.3
Sri Lanka	0.99	4.51	1.77	1.8

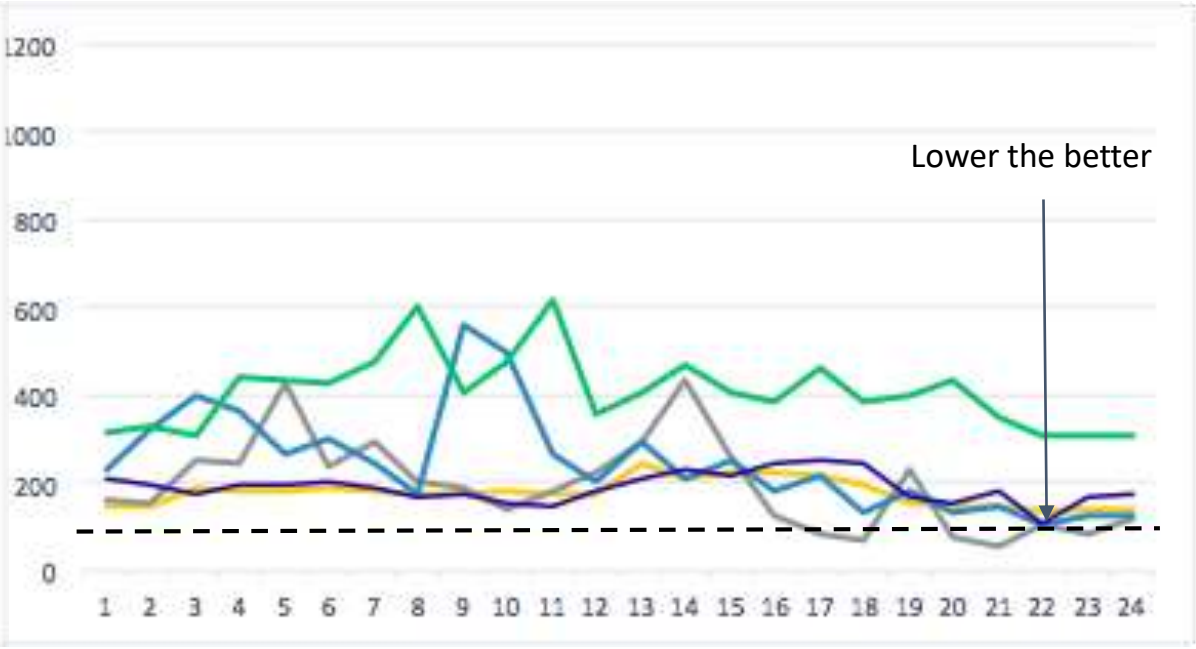
Source: MISR, ITU 2017

But poor quality. Speed is just one parameter…

Latency on 3G



Latency on 4G / LTE

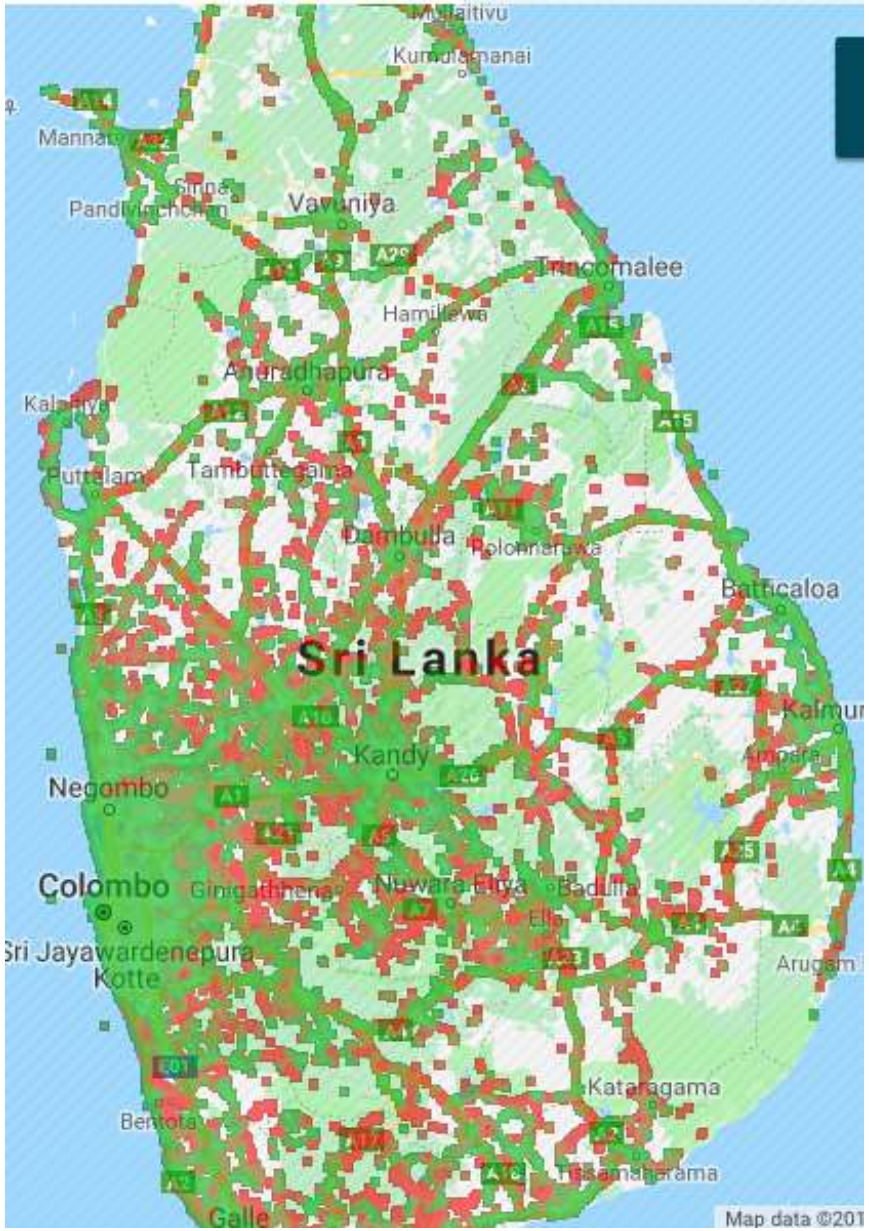


Time (Hour)

BD IN KH NP PK LK

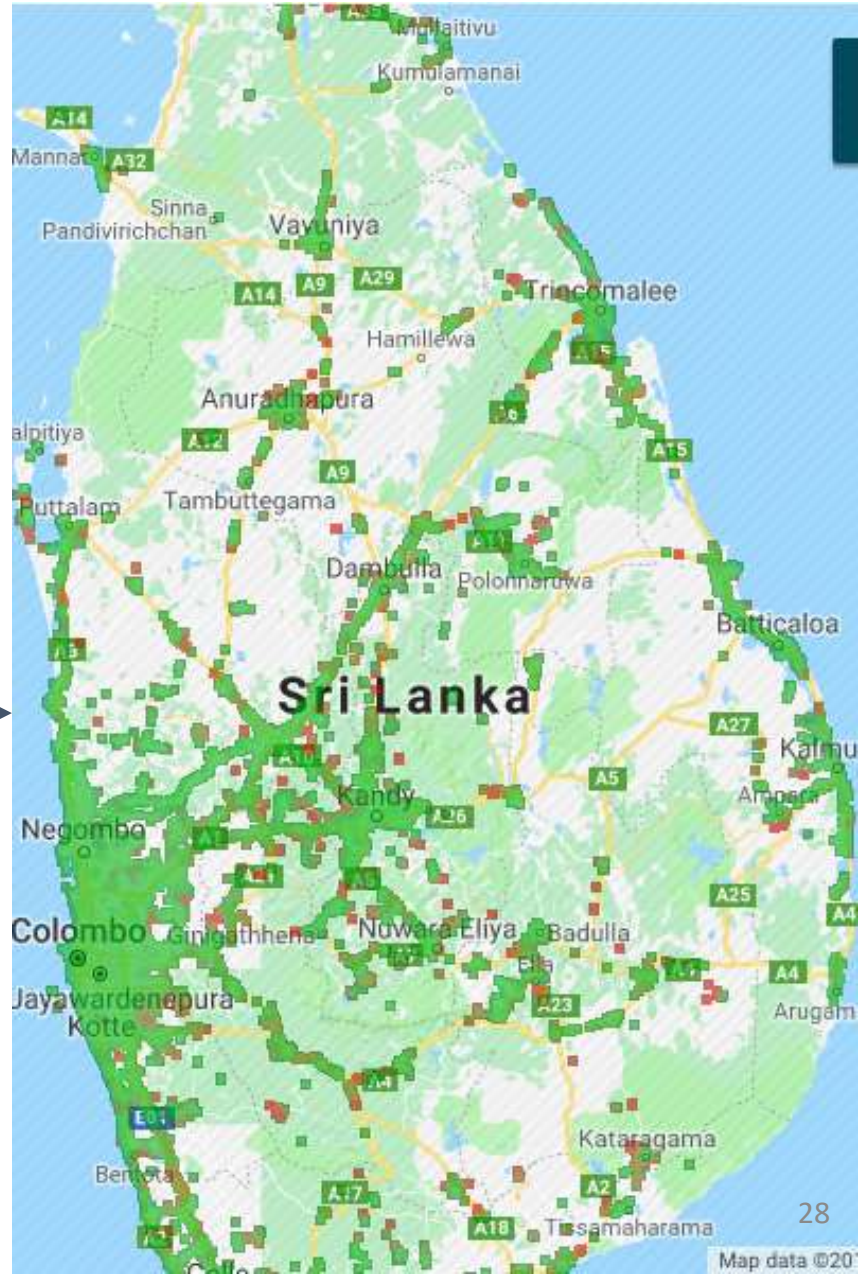
Source: LIRNEasia, Broadband Quality of Service Experience 2018
https://wp.me/p9mjf9-fcf

LTE coverage needs improvement; still a lot of ‘red’ even for 3G / 2G



2G / 3G coverage (All Operators)

LTE coverage (All Operators)



Source: Open Signal 2018

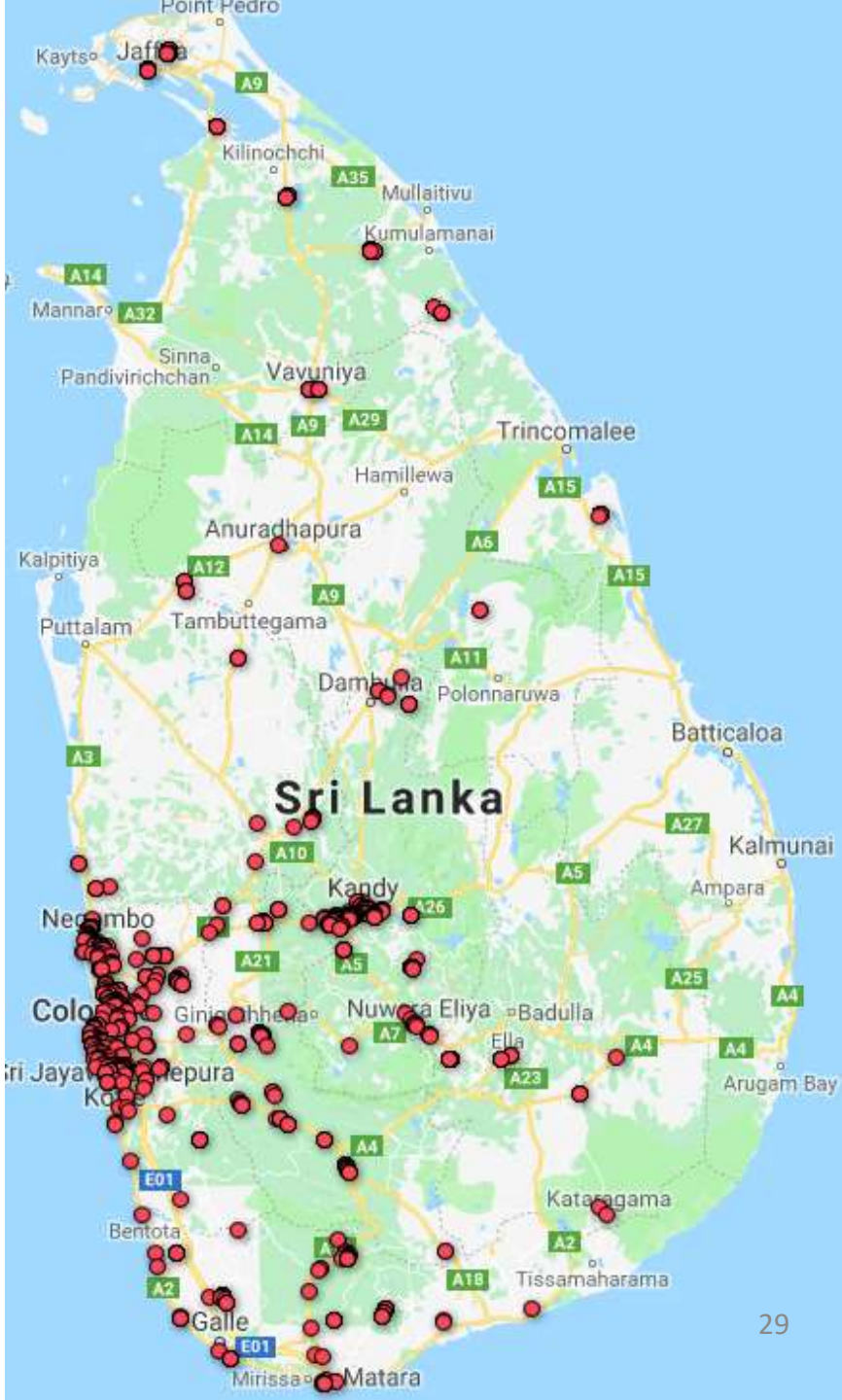
Preliminary study of broadband quality; final results out by year end

- Sessions ~ 45,000
- Sessions limited by network ~ 15,700
- Limited sessions ~ 35%
- Base stations covered ~ 1,190
- Average daily usage speed

(not limited by network) 3.5 Mbps down, 1.0 Mbps up

- Average Latency: 260 ms

[374 ms on 3G, 200 ms on LTE]



LIRNEasia
Pro-poor. Pro-market.

Source: LIRNEasia with NetRadar 2018

What are the intentions of government in the ICT-in-logistics space?

Soon to be announced Digital Economic Strategies will have the answer

- Major focus on facilitation of logistics chains