

Reducing inequalities to universal & affordable access to ICTs

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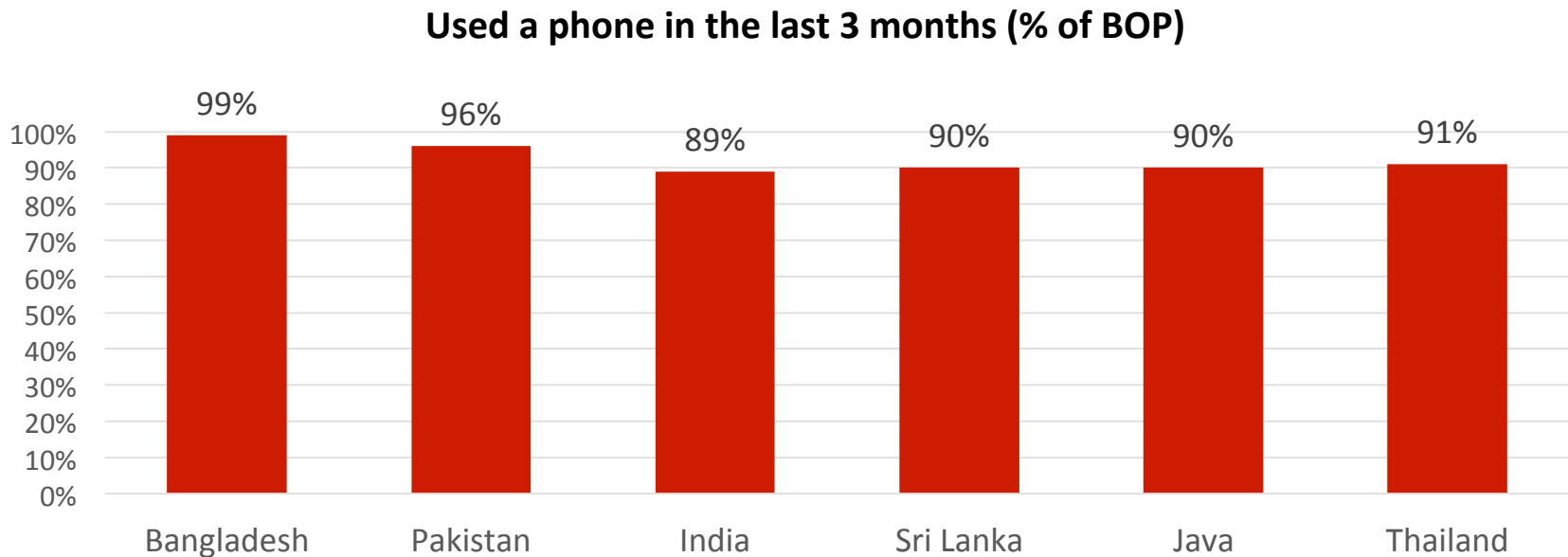
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Questions

- What can be done to make access to ICTs, and use of ICTs, more affordable?
- What policy interventions are required to ensure that digital divides in technology and human capacity do not widen, between and within countries, as technology and markets evolve?
- Can improvements be made in multi stakeholder collaboration and governance to address current barriers to bridging digital divides?

Use of mobile phones has been high in emerging Asia, even among the poorest (i.e. those at the bottom of the pyramid, BOP)...



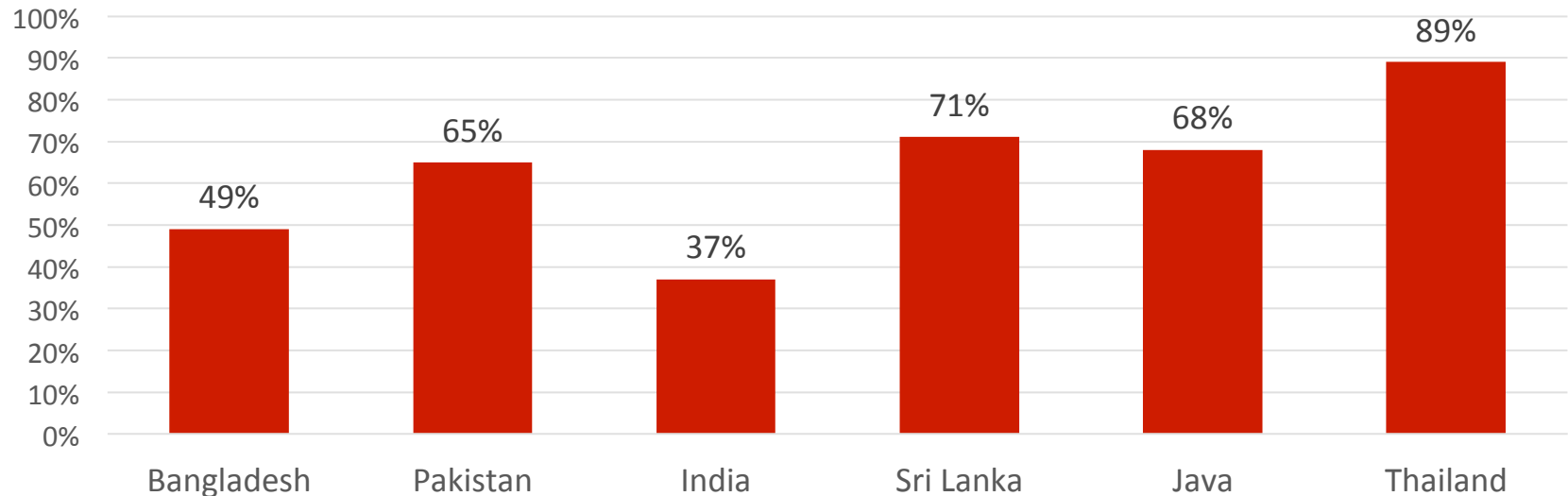
Q: Did you use a mobile in the past three months?

Base: All BOP Respondents 10,154 (6 Countries)
BOP = Bottom of the Pyramid = Socio Economic Classifications D and E

Source: LIRNEasia 2011 survey representative of Bottom of the Pyramid population in each country and of Java Island in Indonesia (that has ~ 70% of the population of Indonesia). Bottom of the Pyramid = BOP = those belonging to socio economic classification (SEC) D and E.

...even when the BoP didn't own a phone individually (shared use)

Mobile phone ownership 2011 - individual (% of BOP teleusers)



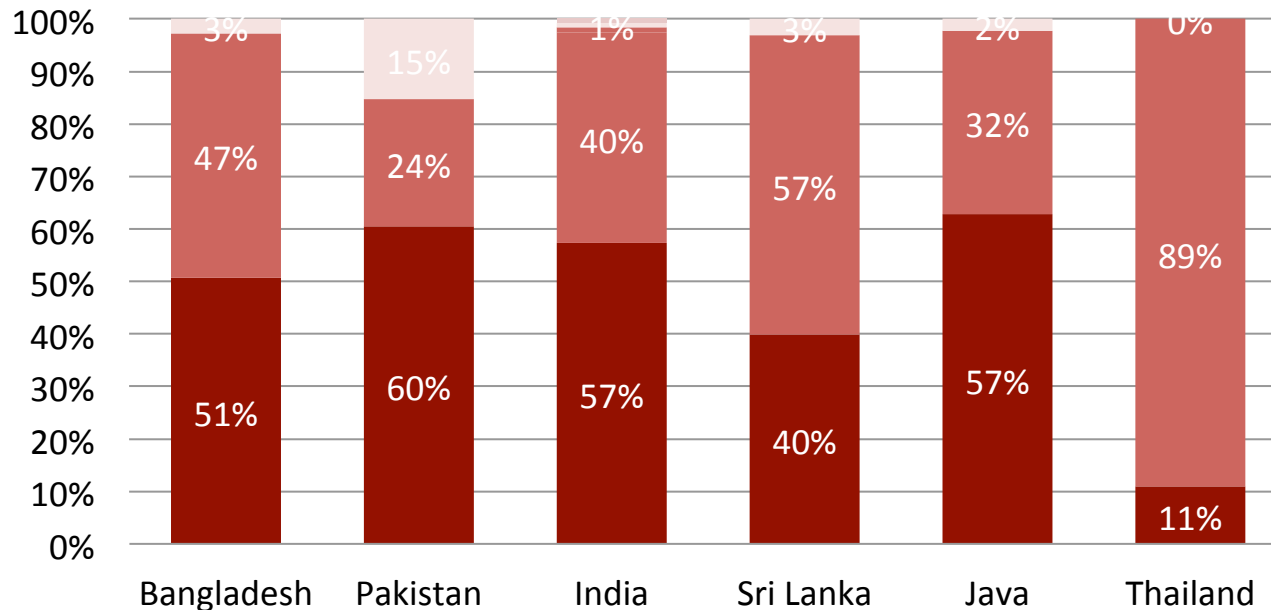
Q: Do you own a mobile phone?

Base: All BOP Respondents 10,154 (6 Countries)

BOP = Bottom of the Pyramid = Socio Economic Classifications D and E

Why don't BoP in emerging Asia not own a phone? in 2011, ~60% cited low affordability; ~40% didn't see the need

Main reason for not owning a phone (% BOP who do not own phone)



Don't know to operator

I am restricted from purchasing a phone by a particular pers

It is too expensive for me to afford

Can't get a connection where I live (service not available)

I don't see a need to have my own phone

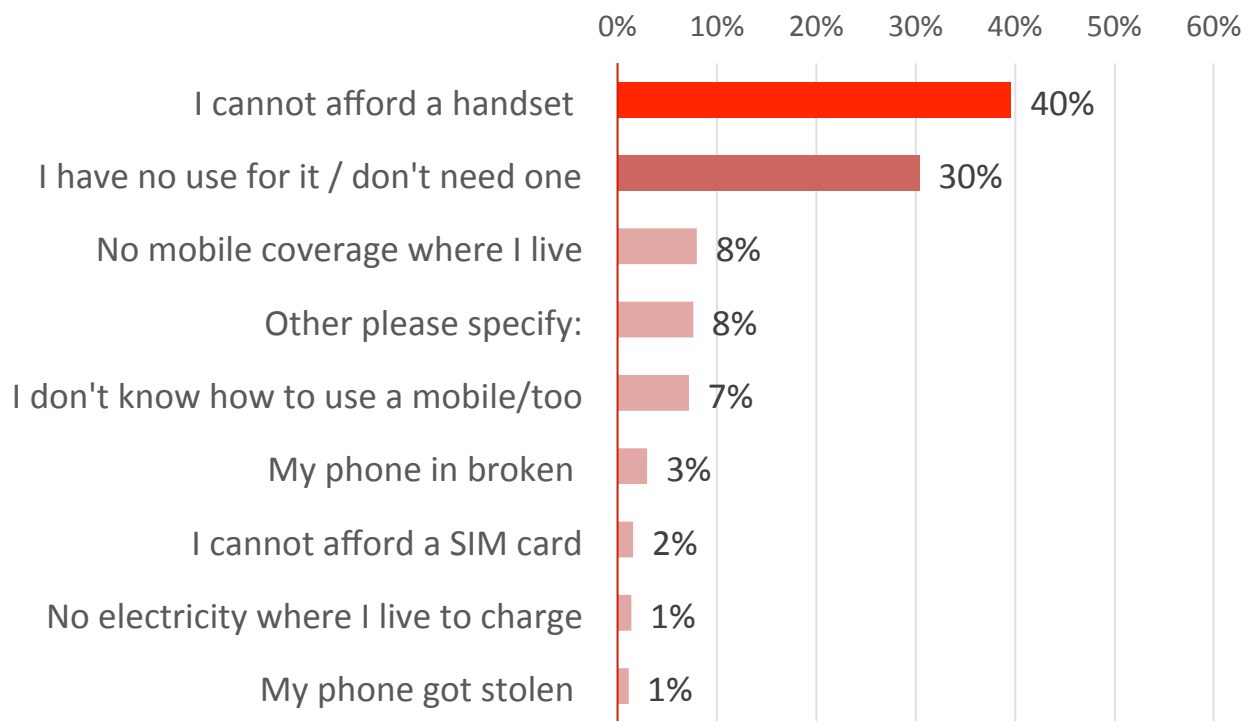
Q: Can you tell us main reason why you do not own a phone?

Base : Among BOP who don't own a phone

Source: LIRNEasia 2011 survey representative of Bottom of the Pyramid population in each country and of Java Island in Indonesia (that has ~ 70% of the population of Indonesia). Bottom of the Pyramid = BOP = those belonging to socio economic classification (SEC) D and E.

Affordability and perceived lack of usefulness still problems: e.g. Myanmar, telecoms latest frontier in 2015

Reasons for not owning a phone



Q: Why don't you have a mobile phone connection? ?

Base : Respondents who don't own a phone

Source: LIRNEasia 2015 survey. Representative of 97% of households and of 96.5% population of Myanmar.

Phone affordability was a problem in Africa too. But so was electricity & signal availability

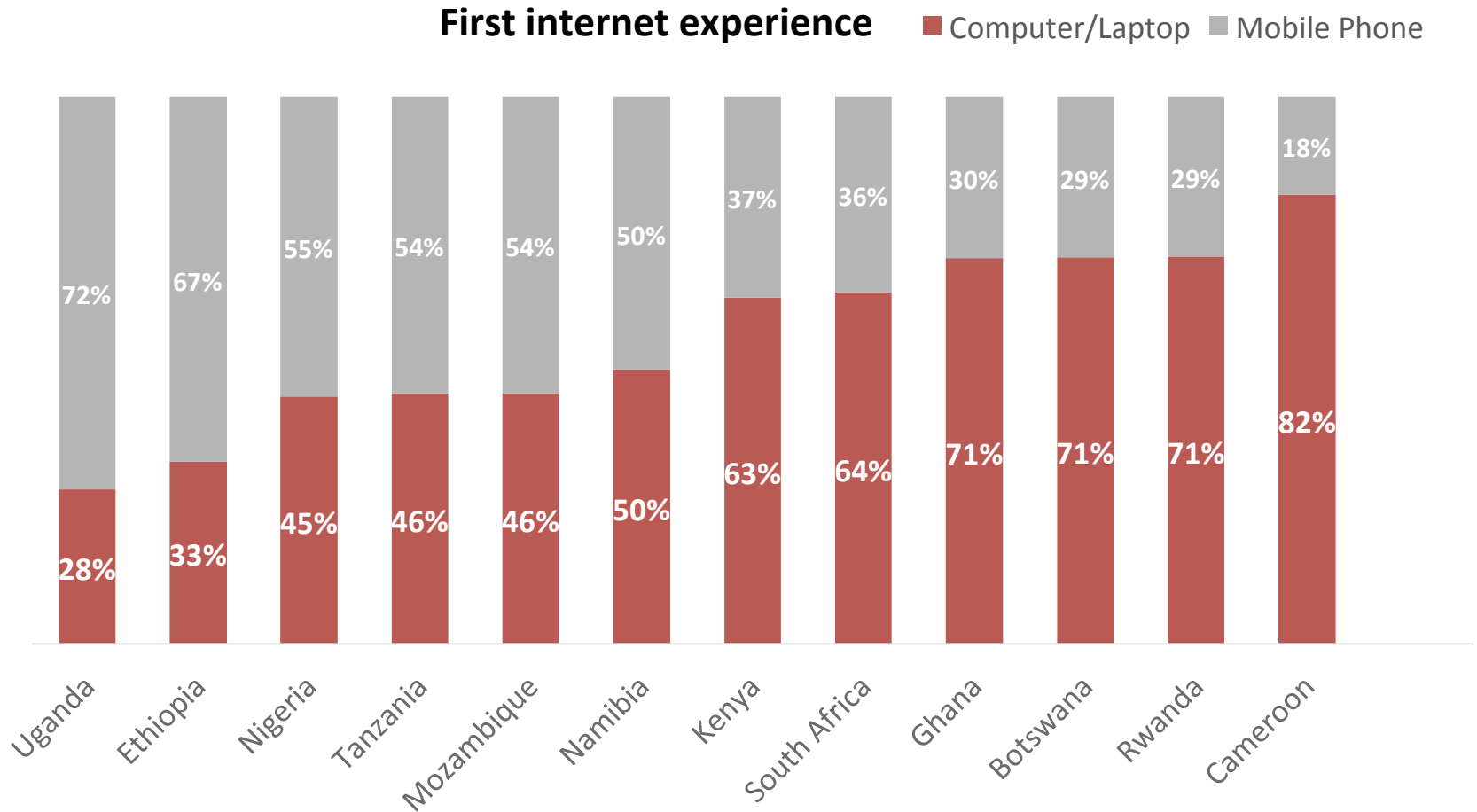
Reasons for not owning a phone

Reasons	Uganda	Kenya	Tanzania	Rwanda	Ethiopia	Ghana	Cameroon	Nigeria	Namibia	South Africa	Mozambique	Botswana
I cannot afford it	77%	82%	87%	82%	88%	71%	70%	77%	72%	63%	73%	81%
No electricity at home to charge	80%	39%	88%	65%	50%	40%	51%	57%	73%	9%	63%	49%
No mobile coverage where I live	31%	4%	9%	13%	23%	21%	43%	15%	15%	2%	44%	6%
I don't have anyone to call	21%	5%	23%	18%	24%	13%	16%	17%	18%	6%	24%	7%
My phone in broken	10%	13%	13%	5%	0%	18%	6%	7%	17%	29%	6%	20%
my phone got stolen	7%	21%	4%	4%	0%	10%	0%	14%	0%	0%	0%	0%

Q: Can you tell us the reasons for not owning a phone?

Base : Those who don't own a mobile phone

Why focus on mobile phones? That's how many people were getting online in Africa

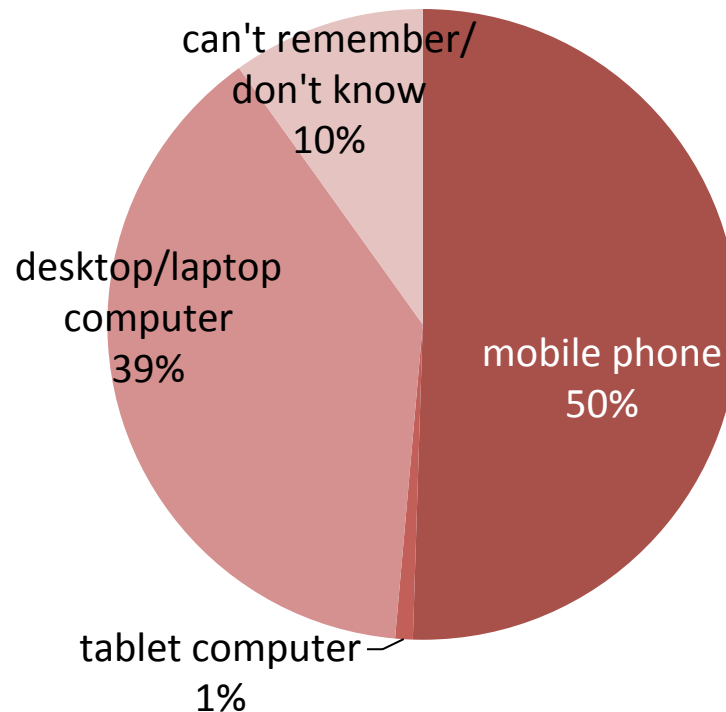


Q: Did you use the Internet first on a computer or on a mobile phone?

Base : Those who used Internet

And in Asia today: In Myanmar, 50% of browser-based Internet users first experienced Internet via mobile phone

Where respondent first used the Internet (% of browser-Internet users)



> Pros and cons accessing the internet via mobile vs. computers

Q: Did you use the Internet first on a computer or on a mobile phone?

Base : All Respondents - 8400

Phone ownership wasn't a sufficient condition for Internet access in 2011 for the poor in emerging Asia...

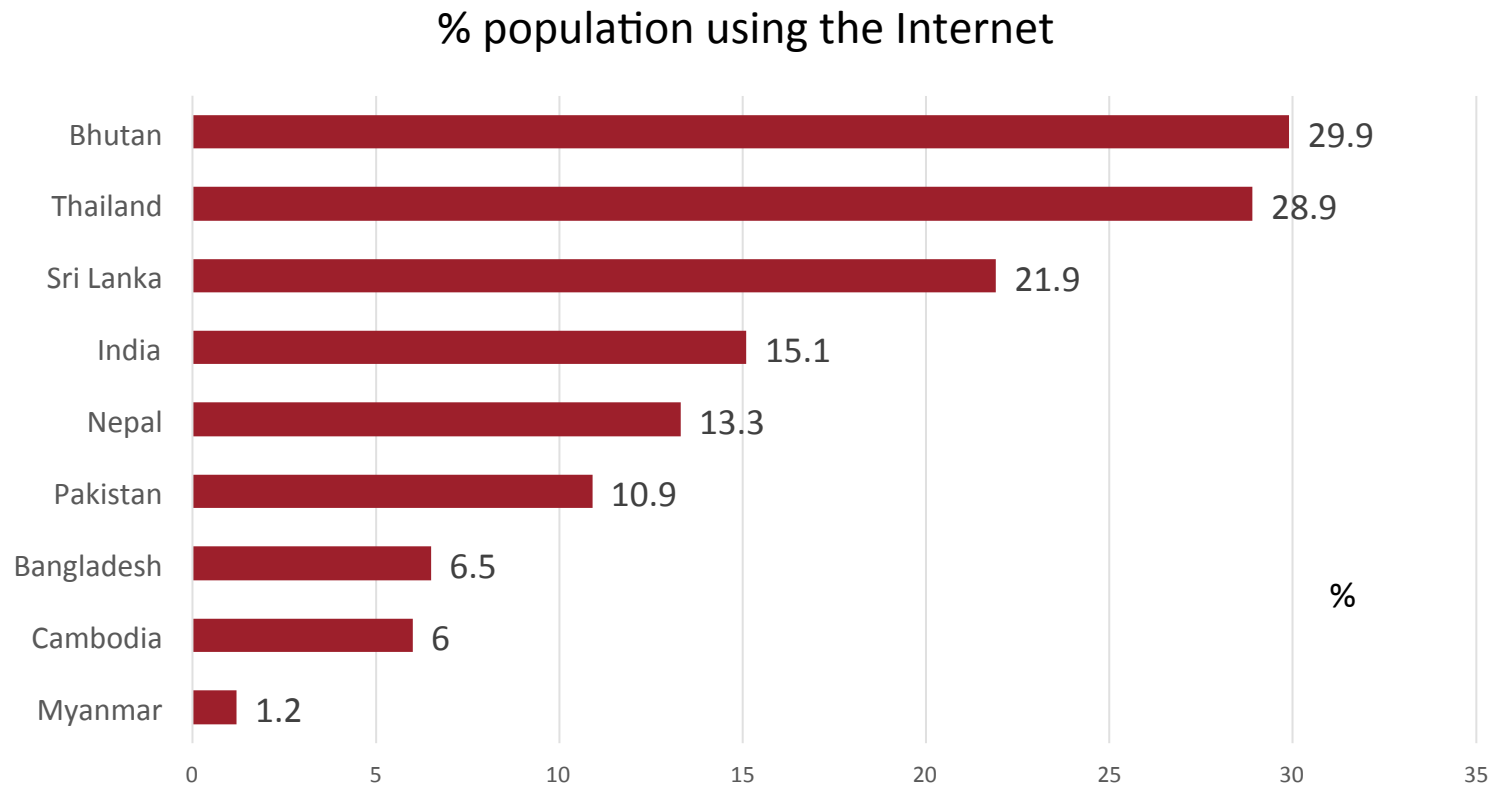
	% of BOP mobile owners					
	B'desh	Pakistan	India	S'Lanka	Java	Thailand
Make phone calls	100	99	100	99	96	100
Receive phone calls	100	95	99	100	94	99
Send/receive missed calls	86	71	78	65	54	24
Send/receive SMS	19	38	23	55	89	37
Send/receive MMS	1	2	3	5	14	8
Send/receive e-mail				1	3	2
Browse the Internet	3		1	1	10	5
Take photos/video	19	7	8	14	26	19
Play games	27	21	18	11	31	16
Listen to radio	13	15	12	17	26	18
Listen to music	25	5	15	8	26	30
Share that you have content created	1	1	3	2	8	3
Send/receive or download/upload other content	1	1	2	2	6	3
Use as an organizer	7	5	8	2	15	8
Check my bill/credit	13	20	11	18	16	3
Send/receive talk time/load	10	5	2	2	35	0
Access facebook	1			1	7	2
Access other social networking or blog					2	1

Q: Can you tell us what activities you do with your mobile phone

Base : Those who own a mobile phone

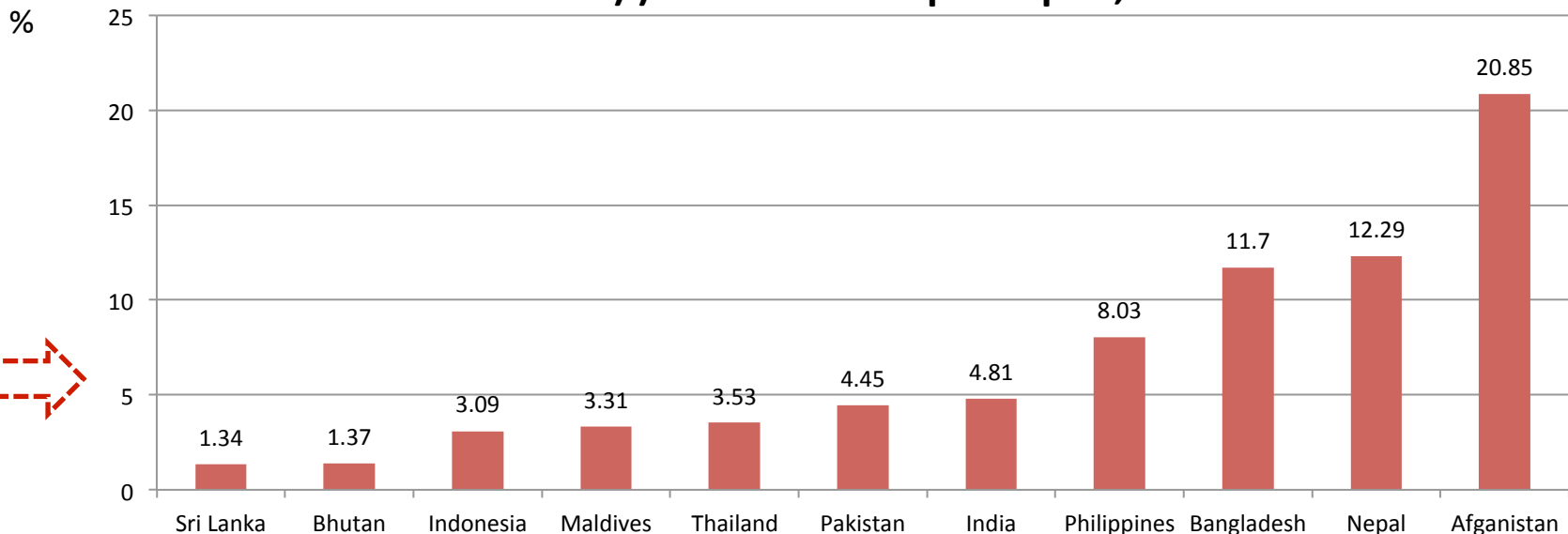
Source: LIRNEasia 2011 survey representative of Bottom of the Pyramid population in each country and of Java Island in Indonesia (that has ~ 70% of the population of Indonesia). Bottom of the Pyramid = BOP = those belonging to socio economic classification (SEC) D and E.

Nor is it sufficient today: most emerging Asia has sub-20% penetration



Sub-20% penetration despite entry-level packages in Sri Lanka, India (and others) meeting <5% BB Commission target

Price of (Mobile-cellular + Prepaid handset-based mobile-broadband (500 MB/month)) as a % of GNI per capita, 2013



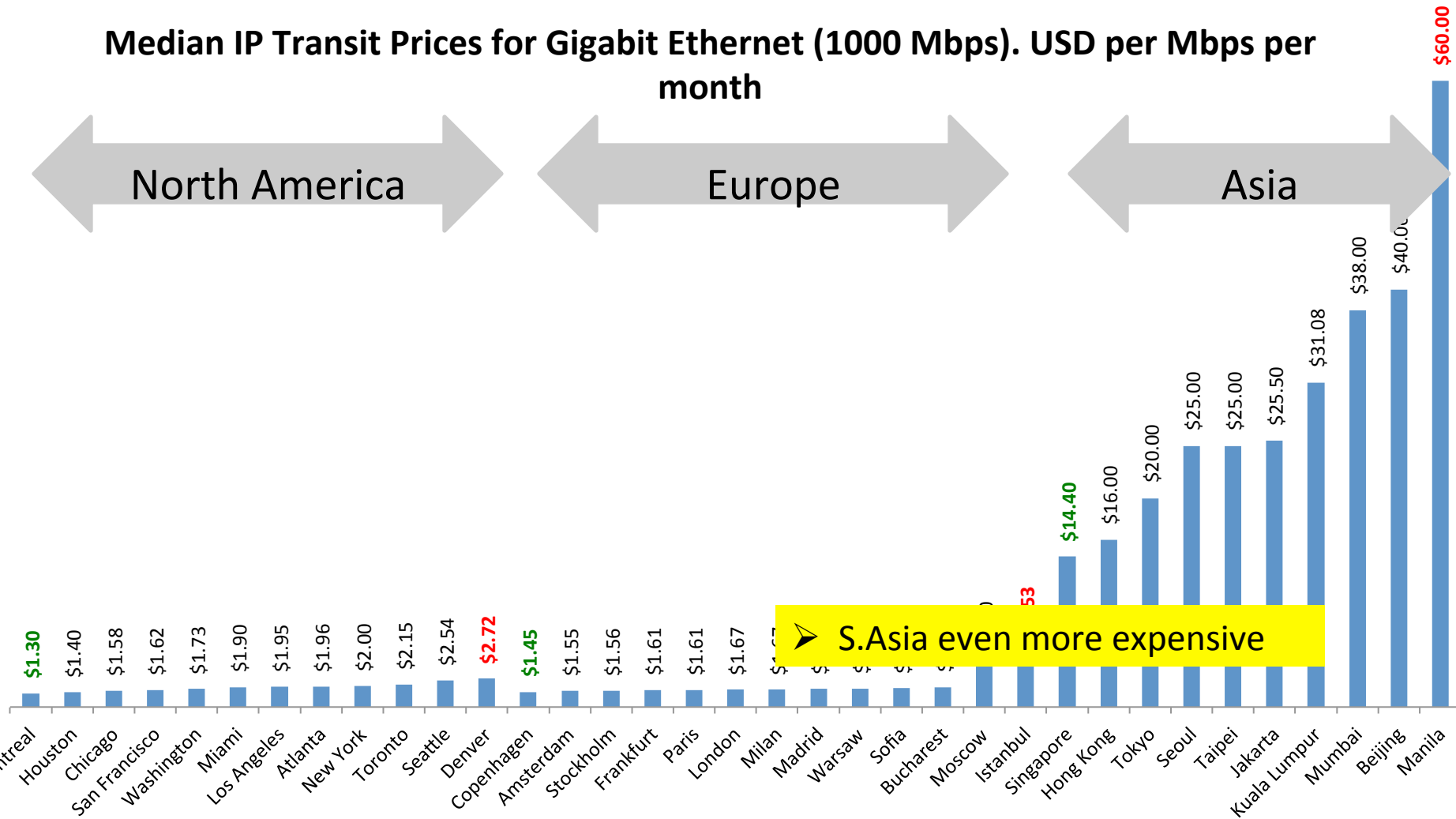
- Retail level affordability entry-level data/voice plans (+ falling phone) prices ALONE won't solve our problems
- How much data is sufficient (for video, for example?)

Notes: 1) GNI per capita (Atlas method) = price of standard basket of mobile monthly usage for 30 outgoing calls+ 100 SMS. It's based on prepaid prices. Largest operator's cheapest calling plan is used. Data volume allowance of a minimum of 500 MB for handset-based subscriptions is used. The selected plan is not the one with the cap closest to 500 MB, but include a minimum of 500 MB. This means, for example, if an operator offers a 300 MB and an 800 MB plan, the 800 MB plan or twice the 300 MB plan (if the package can be purchased twice for a monthly capacity of 600 MB) is selected for the 500 MB price basket. The cheapest option of these two is selected. The plans of a validity period of 30 days are chosen.

Source: ITU, 2013/ Telecom Regulatory Bodies

High international backhaul prices → ISPs under-provisioning int'l backhaul....

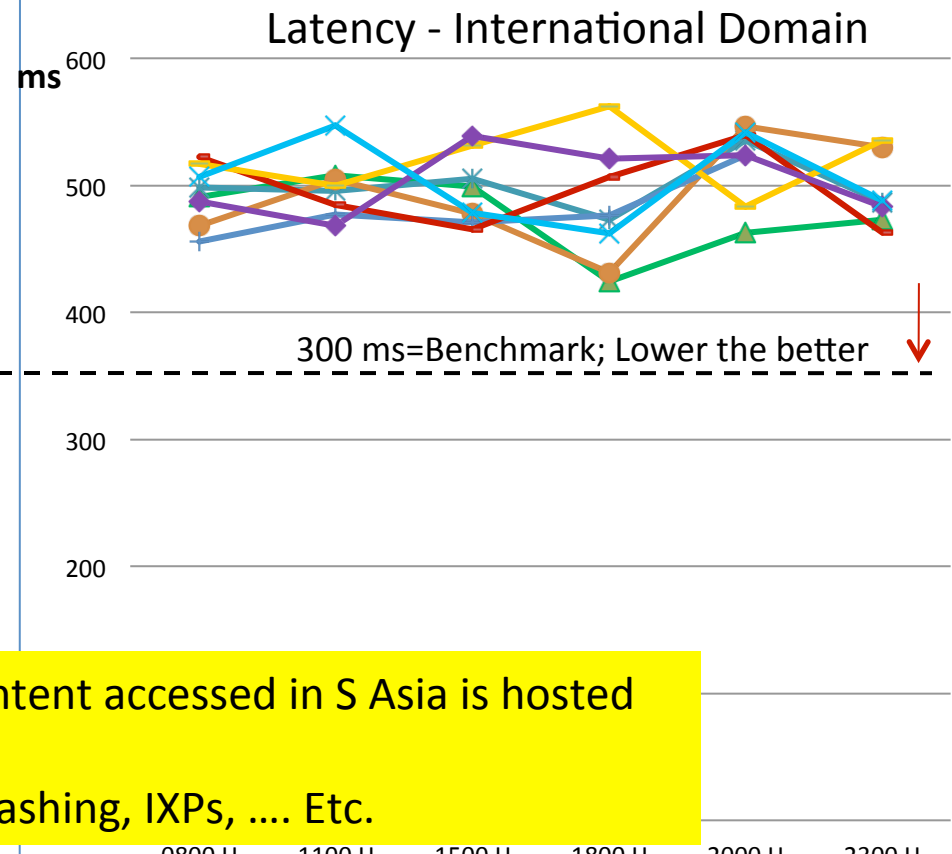
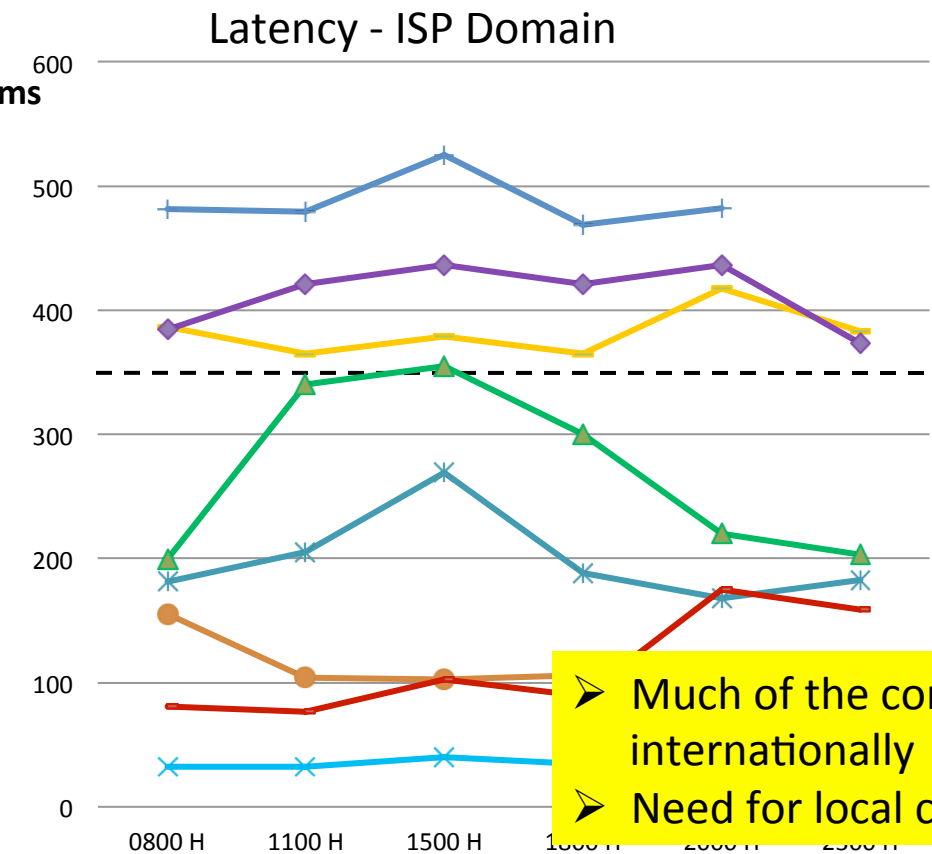
Median IP Transit Prices for Gigabit Ethernet (1000 Mbps). USD per Mbps per month



Source: TeleGeography.

Note: Cost for a full-port commit. Does not include local access and installation.

...leading to a poor quality of service experience for broadband users



➤ Much of the content accessed in S Asia is hosted internationally

➤ Need for local caching, IXPs, ... Etc.

Lack of competitively priced, in-country backhaul bigger problem. Countries respond with HUGE state investment

Malaysia	India	Indonesia	Australia
<ul style="list-style-type: none"> ➤ Total USD 3.5 billion. ➤ PPP with 30% govt. funds; 70% incumbent Telekom Malaysia (TM 27% govt owned) ➤ Seen as fastest way to implement (TM had most existing fibre) ➤ Quarterly disbursement of funds based on implementation milestones. ➤ V fast implementation. ➤ 43% take up. 	<ul style="list-style-type: none"> ➤ USD 4 billion project funded by USOF (5% of operator revenue) ➤ Special purpose vehicle called BBNL set up. BBNL fully govt owned. ➤ BBNL whole-sale only player ➤ BBNL consist of Bharat Sanchar Nigam Ltd (BSNL, incumbent 	<ul style="list-style-type: none"> ➤ USD 1 billion committed by government. ➤ Largest proportion from USOF fund calculated as 1.25% of operators' revenue ➤ PPP but has not been implemented yet. 	<ul style="list-style-type: none"> ➤ Total cost anticipated at A\$43 billion (USD 40 B) but this figure kept changing. ➤ Funding through taxpayer funds – to be sourced from government equity until NBN Co has sufficient cash flows to function without government support.
	<ul style="list-style-type: none"> ➤ 'Open access' claimed, but ill defined. ➤ Missed opportunities of the past: Regulators/policy makers didn't create the right incentives for private investment in backhaul ➤ Low implementation capacity in government → slow progress (e.g. in disbursing US Funds) ➤ (Mis)appropriation of US Funds 		

Leapfrogging is possible: Myanmar, just 4 months after competitive roll-out

- Falling smart phone prices → 59% of users own smart phone(1)
- High awareness + demand → 50% phone buyers also want data plan (2)
- Result: 40% daily active internet users (SIMs) among Telenor's 2.4 million SIMs
- Early days; driven by urban (& rich) adoption
- But move to data directly; not voice, then data
- Zero Rated data plans offered

Sources:

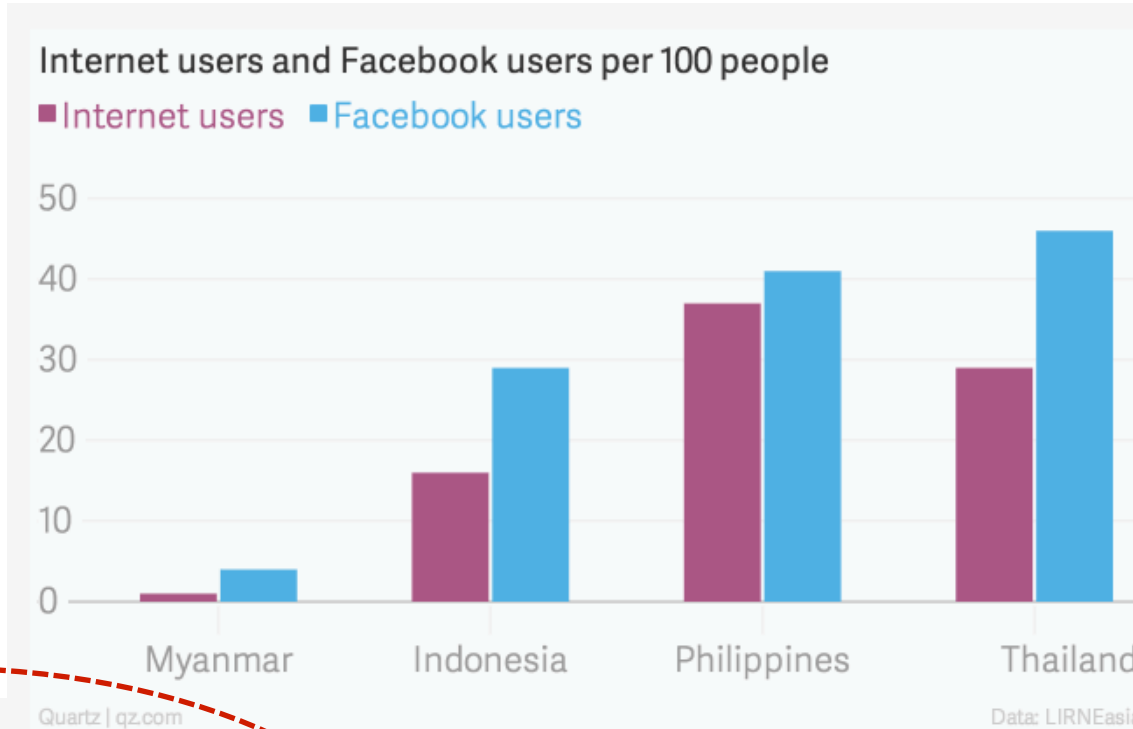
1) LIRNEasia 2015 survey Myanmar ICT use. Representative of 97% of households and of 96.5% population of Myanmar.

2) <http://www.telecompaper.com/news/myanmar-develops-new-spectrum-allocation-policy--1085720>

3) Telenor Dec 2014 Quarterly Results

Content: social media rules

- “65-85% of average users data is on YouTube, Facebook, WhatsApp” [2 separate Indian telcos]
- In LIRNEasia & RIA national surveys, more users claim they use Facebook than use the internet
 - Corroborated by quartz.com research
- Hinted at by supply-side data from LIRNEasia(1) and FB(2)



	Bangladesh	Cambodia	Thailand	Philippines	Nepal	Myanmar	Sri Lanka	India	Pakistan
Internet users per 100 (LIRNEasia, 2014)	6.50	6	28.9	22.82	13.3	13.59	34.75	15.1	10.9
Facebook users per 100 (2014)	6.89	14.03	46	41	15.10	5.45	11.70	9	8

Source: (1) Lucas Gunesratne, Roshanthi, Samarajiva Rohan(2013) "Estimating internet users: an evidence-based alternative in the absence of survey data", info, Vol. 15 Iss: 5, pp.20 – 33; (2) Facebook advertising platform

Where's the content to move beyond social media?

- Need for content/app eco systems
 - Techies, Hackers, entrepreneurs
 - Financing, business models
 - Removing policy barrier (e.g. electronic payments)
 - Revenue sharing models between app developer and telco
- But where's raw data?
 - Bus schedules? Electricity outage notices? Agri market prices
 - Governments role: digitization, datafication and opening up of troves of data it has/generates

It takes a whole ecosystem to provide the internet that consumers want to use

- Affordability of the data connection
- Affordability of the right terminal device
 - Type of device: smart vs. feature phone; computer vs. small screen
- Quality (high speed; low latency; no jitter)
 - ‘some internet’ (2G?) is better than ‘no internet’
 - But not for long.
- Content
 - ‘Why should I get online’?/‘I see no value’
 - Beyond social media (the current killer app.)
- Capability, awareness, ‘need’
 - Literacy (general and ICT)

Sources:

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Regulators and policy makers → enable private sector investment & action

Adoption/use determined by...	Drivers
Affordability of data connection	<ul style="list-style-type: none">- Primary: Competition- Spectrum: the right quantity, right time, right allocation mechanism
The right terminal device & affordable	<ul style="list-style-type: none">- Sector/device specific taxes
Quality of broadband (speed, latency, jitter..)	<ul style="list-style-type: none">- Technology choice at the right time (2G, 3G, 4G)- Access to critical infrastructure (ensured through open/transparent, non-discriminatory, cost-oriented access to network elements that have low levels of competition – e.g. int'l& domestic backhaul)
Attractive/useful content	<ul style="list-style-type: none">- Eco system of app developers+ funding+ revenue sharing models between app developer/content owner and telco- Removal of policy barriers (e.g. to receiving payments)- Data (from the physical world) that is digitized and open
Capabilities, awareness	<ul style="list-style-type: none">- Investment in literacy, publicity

FURTHER DETAILS & DATA

- www.lirneasia.net and helani[at]lirneasia.net

- www.researchictafrica.net (for Africa survey data)