

GSM-ASIA PACIFIC CONFERENCE

Evidence for Policy Making:

**Some Data: on International Calling, Roaming,
mobile prices, international calling @BOP**

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Look at some data for:

- ▶ International Calling (IDD)
- ▶ International Roaming
- ▶ Mobile Prices
- ▶ Performance of Pakistan's Mobile sector
- ▶ What we know about the BOP
- ▶ Broadband Prices

International Calling

- ▶ From the SAARC Region

The best rates not necessarily for calling the neighbors

Calling From	Calling to	SAARC						South East Asia												UK	US		
		Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka	Malaysia	Singapore	Thailand	China	Hong Kong	Japan	Australia	France	Germany	Italy	Sweden	Switzerland		
Afghanistan		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.54	0.54	0.54	0.54	0.54	0.54	0.54		
Bangladesh	Peak	0.38		0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.38	0.29	0.38	0.38	0.38	0.38	0.38	0.43	0.43	0.38	0.38
	Off-peak	0.29		0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.29	0.25	0.29	0.29	0.29	0.29	0.29	0.34	0.34	0.29	0.29
Bhutan	Peak	-	0.59		0.31	0.59	0.59	0.59	0.98	0.59	0.48	0.79	0.59	0.79	0.59	0.79	0.79	0.79	0.59	0.59	0.59	0.59	0.59
	Off-peak	-	0.59		0.31	0.59	0.59	0.59	0.59	0.98	0.59	0.48	0.79	0.59	0.79	0.59	0.79	0.79	0.59	0.59	0.59	0.59	0.59
India		0.22	0.22	0.22		0.22	0.22	0.22	0.22	0.15	0.15	0.15	0.22	0.15	0.22	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Maldives		0.70	0.30	0.55	0.30		0.46	0.30	0.30	0.27	0.23	0.27	0.23	0.27	0.30	0.30	0.38	0.38	0.38	0.38	0.38	0.38	0.70
Nepal	Peak	0.36	0.36	0.36	0.29	0.36		0.36	0.36	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
	Off-peak	0.36	0.36	0.36	0.22	0.36		0.36	0.36	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Pakistan		0.29	0.12	0.29	0.16	0.29	0.29		0.29	0.12	0.03	0.12	0.03	0.03	0.12	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Sri Lanka		0.74	0.32	0.56	0.14	0.23	0.32	0.32		0.10	0.10	0.32	0.10	0.10	0.14	0.14	0.23	0.14	0.23	0.23	0.23	0.14	0.10

Pakistan:

Cheapest rate = USD 0.03 (to US, China, France..etc)

But Cheapest rate to SAARC country = : USD 0.12 (to BD)
4x more expensive

International Roaming

Can be priced for different “activities” while roaming..

- ▶ Make a call to a local number (a number in the home country)
- ▶ Receiving a call
- ▶ Call home
- ▶ Receive SMS
- ▶ Send SMS
- ▶ Call another international number
- ▶ Use Data services (GPRS, HSPA etc)

Making a Local Call while roaming varies from USD 0.16 – 4.95

	Afghanistan	Australia	Bangladesh	Bhutan	Brunei	Cambodia	China	Cook Islands	Fiji	French Polynesia	Guam	Hong Kong	Indonesia	India	Japan	Korea	Laos	Macau	Malaysia	Maldives	Mongolia	Myanmar	Nepal	New Zealand	New Caledonia	Pakistan	Palau	PNG	Philippines	Reunion	Samoa	Singapore	Sri Lanka	Taiwan	Thailand	Tonga	Vanuatu	Vietnam									
Australia	0.71	0.49	1.87	0.34	1.62	0.82	1.51	1.16	2.11	0.83	0.77	1.12	1.94	0.68		0.32	0.43	1.12	0.28	0.83	1.01	1.94	0.58	0.64	0.58	1.12	0.54	0.54	0.41	0.77	0.43	0.37	1.12	2.71	0.54	0.41											
Bangladesh	0.44	0.60		1.44	0.28	1.19	0.70			0.29	0.45	1.12	0.54			0.36	0.51	0.16			0.42	1.05	0.42		0.28		0.25	0.30	0.29	0.62		0.37															
Bhutan		0.94	0.39							0.28		1.20	0.48									0.51		0.49			0.17		0.22	0.35	0.28	0.63															
Brunei		1.38	2.07	0.7		2.07	0.83			1.38	1.38	2.41	0.75	2.41		0.45	1.38	2.41			0.62		0.67			1.38		1.38	2.41	0.37	1.38					0.33											
Cook Islands	2.11	0.60	2.11	2.11	2.11	2.11	2.11	1.41	2.11	2.11	1.41	1.41	1.41	1.41	1.41	1.41	2.11	2.11	2.11	2.11	2.11	-	2.11	-	2.11	2.11	-	2.11	-	1.41	2.11	2.11	1.41	-	-	2.11											
Fiji		1.03				0.53				0.45	0.53	2.61	0.74	0.44			0.28					0.63	0.29					0.34		0.45																	
Fr. Polynesia		0.80				0.84	1.32	1.12		0.34		1.51	0.69	0.64			0.34					1.32	0.55				0.34		0.55	0.43	0.36	0.80	1.06	0.55													
Honk Kong	0.72	1.34	0.48	1.78	0.35	0.53	0.39	1.34	1.05	1.04	0.85	0.56	1.58	0.78	0.58	0.54	0.53	0.32	0.19	0.82	1.08	0.67	1.40	0.62	1.04	0.33	0.97		0.42	0.42	0.36	0.84		0.65	0.40												
India	0.71	0.66	0.50	1.58		0.53	0.53			0.53	0.66		0.66	0.53	0.58	0.39	0.21	0.53	0.74		0.50	0.66	-			0.32	0.66		0.26	0.37	0.39	0.66		0.39													
Japan	0.73	0.73	0.73		0.73	0.69	0.69	0.73		0.73	0.73	0.73	0.69	0.69	0.73		0.46	0.73	0.69	0.69	0.73	0.73	0.73	0.73	0.73	4.40	1.19	0.69	0.73	0.69	0.69	0.69	0.73	0.73	0.69	0.69	0.69	0.69									
Korea	0.88		1.21	1.21	0.73	0.73	0.72			0.48	0.46	0.58	1.21	0.35	0.73	0.73	0.63	1.21	0.73	0.91	1.21		1.21		0.63		0.46	1.21	0.58	0.63		0.91															
Macau	1.05	0.66		0.33	0.53	0.45				0.83	0.34	0.57	1.49	0.56	0.34	0.44		0.34	0.35			0.83	0.63	4.61	0.63	0.32		0.55	0.42	0.35	0.83		0.32														
Malaysia	2.37	1.19	1.48		1.04	3.26	1.19			1.48	1.04	1.04	2.96	1.63	1.48	1.93	1.63		1.93	2.82		1.93	1.48	1.78		1.04	1.93		0.74	1.48	1.04	1.19		1.48													
Maldives	1.27	0.62	1.92				0.85			0.37	0.63	1.63	0.65	0.38			0.37									0.35		0.58	0.43		0.86																
Mongolia	0.75	1.28	0.72			0.88				0.37	0.62	1.63	0.72	0.38		0.45	0.37	0.24					0.48			0.37		0.34	0.46	0.38	0.85		0.44														
Nepal	0.60		0.40	1.44	0.28	0.43				0.29	0.50	1.38	0.48	0.30			0.21					0.45		0.28		0.26	0.37	0.66																			
New Zealand	1.34	0.67		0.42	0.63	0.95	1.51	1.27	1.02		0.39	0.77	1.72	0.77	0.74		0.53	0.77			0.74	0.63	0.74		0.70	0.35		0.88	0.60	0.49	0.42	0.91	3.34	1.37	0.35												
Pakistan	0.90	1.49	0.90		1.49	0.90	0.90			0.90	1.49		0.90	0.90		0.90	0.90	0.90			0.90	0.90		4.95	0.90		0.90	0.90	1.49	1.49	0.90	0.90	0.90	0.90	0.90		0.90										
Philippines	2.62	1.31	1.31		1.31	1.31	1.75			1.31		2.62	1.31		1.31	1.31	1.31	1.31		1.75	1.31	1.31		1.31			1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31		1.31							
Sri Lanka	1.91	1.45	1.45	4.22	0.82	2.67	1.45			0.82	1.45	4.22	0.46	1.02	1.91	1.45	1.02	0.82	0.46		1.91	0.46	1.45		1.45	1.45		0.82		0.82	1.45		1.02														

Making a local call while roaming in S Asia is unpredictable. Cheap in SE & E Asia. Expensive from Pacific Islands/AU/NZ expensive.

Classification of Local Calling by roaming country	
Level of Discrimination in price offered (standard deviation)	Average Price Paid by Roaming Customer
High	<p>Maldives, Sri Lanka Brunei Korea, Macau</p> <p>Afghanistan, Bangladesh, Bhutan, India, Nepal Cambodia, Laos French Polynesia, Guam, Palau, Papua New Guinea, Reunion, Tonga Mongolia</p>
Low	<p>Pakistan Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam New Caledonia, Samoa, Vanuatu China, Hong Kong SAR, Japan, Taiwan</p> <p>Myanmar Australia, Cook Islands, Fiji, New Zealand</p>

Receiving a call while roaming: Distance Charge Only – USD 5.84

Afghanistan	Australia	Bangladesh	Bhutan	Brunei	Cambodia	China	Cook Islands	Fiji	French Polynesia	Guam	Hong Kong	Indonesia	India	Japan	Korea	Laos	Macau	Malaysia	Maldives	Mongolia	Nepal	New Zealand	New Caledonia	Pakistan	Palau	Papua New Guinea	Philippines	Reunion	Singapore	Sri Lanka	Taiwan	Thailand	Tonga	Vanuatu	Vietnam
Australia 0.58	0.49	1.87	0.34	0.33	0.82	0.34	1.03	0.34	0.88	0.86	0.95	1.12	-	0.32	0.43	0.95	0.19	-	0.84	1.12	-	0.36	-	0.95	-	0.86	0.43	0.37	0.95	-	-	-			
Bangladesh 0.88	0.65	-	1.64	0.63	0.62	1.08	-	-	-	0.59	0.51	2.01	0.38	-	0.74	0.78	0.49	-	0.72	0.41	-	0.53	-	0.57	-	0.54	0.60	0.67	0.91	-	0.29	-			
Bhutan Free	0.39	-	-	-	-	-	-	-	-	0.28	-	1.84	Free	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	0.35	0.28	0.63	-	-	-		
Brunei 1.72	2.41	-	-	-	2.41	2.21	-	-	-	1.72	1.72	2.76	1.79	2.76	-	2.65	1.38	2.76	-	2.83	-	2.61	-	1.72	-	1.38	2.76	2.16	1.72	-	1.79	-	-		
Cook Islands 0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	-	0.70	0.70	0.70	0.70	-	-	0.70					
Fiji 0.61	-	-	-	-	-	-	-	-	-	0.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
French Polynesia 1.46	-	-	-	-	-	-	-	-	-	3.47	1.46	2.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Honk Kong 2.63	1.99	2.31	3.36	1.34	2.45	1.00	1.58	2.22	1.58	2.11	-	2.02	3.95	1.01	1.01	1.94	0.80	1.77	1.77	1.79	1.69	1.97	-	1.95	-	1.54	1.34	2.02	1.18	1.73	1.35	1.85	-	1.54	1.01
India - AirTel 1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	-	-	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	-	-	-	1.14	1.14	1.14	1.14	1.14	1.14	1.14	-	1.14		
India - Reliance 0.58	1.31	0.42	1.58	-	-	1.31	1.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.31	
Japan 0.73	-	0.73	-	0.73	-	0.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macau 0.34	1.78	-	1.57	1.77	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.24
Malaysia 2.37	1.19	1.48	-	1.04	3.26	1.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.48	
Maldives 0.31	0.70	2.47	-	-	-	1.93	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mongolia 1.73	0.79	1.70	-	-	-	1.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.29
Nepal 0.50	-	0.40	2.16	0.28	0.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
New Zealand 0.70	0.70	-	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Philippines 2.62	1.31	1.31	-	1.31	1.31	1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.31	
Singapore 1.76	4.59	-	4.59	4.59	2.47	-	4.59	4.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.59		
Sri Lanka 1.80	1.28	1.28	4.12	0.72	2.58	1.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.93	

Receiving a call: S Asian operators charge different prices based on the customer's home country. They also charge higher prices.

Classification of Incoming Call by roaming country	
Level of Discrimination in price offered (standard deviation)	Average Price Paid by Roaming Customer
High	<p>Pakistan</p> <p>Brunei</p> <p>Korea</p> <p>Bangladesh, India, Maldives, Nepal</p> <p>Cambodia, Laos, Vietnam</p> <p>Fiji, French Polynesia, Macau, Palau, Papua New Reunion</p> <p>Macau, Mongolia</p>
Low	<p>Indonesia, Malaysia, Philippines, Singapore, Thailand</p> <p>Australia, Cook Island, Guam, New Zealand, New Caledonia, Vanuatu</p> <p>Hong Kong SAR, Taiwan</p> <p>Afghanistan</p> <p>China</p> <p>Tonga</p>

Calling Home can be expensive: USD 0.32 – 11.16. MV roaming in AU 11.16 but AU roaming in MV 2.71....reciprocity?

can	Afghanistan	American Samoa	Australia	Bangladesh	Bhutan	Brunei	Cambodia	China	Cook Islands	Fiji	French Polynesia	Guam	Hong Kong	Indonesia	India	Japan	Korea	Lao	Macau	Malaysia	Maldives	Marshall Islands	Mongolia	Myanmar	Nepal	New Zealand	New Caledonia	Pakistan	Palau	Papua New Guinea	Philippines	Reunion	Samoa	Singapore	Solomon Islands	Sri Lanka	Taiwan	Thailand	Timor Leste	Tonga	Vanuatu	Vietnam
Australia	2.58 2.69	0.95 3.09	1.29 3.60	3.38 2.91	2.92 2.51	1.51 1.89	1.94 1.94	3.53 2.17									0.81 1.62	1.94 2.71			4.37		2.53 3.53	1.92 0.42		1.17 1.94	2.83		1.89 1.94	3.66 1.05	1.94	3.88 1.06	1.22									
Bangladesh	1.61	2.43	2.16 3.10	1.77 1.46							1.77 1.94	2.26 3.01					1.42 3.07	1.56				0.42 3.44	0.67		3.34			2.10	2.01 1.54	1.67		0.73										
Bhutan	?	?									1.92		2.39 2.52									?	?	?	?																	
Brunei		2.07 3.10		3.10 2.60							2.41 3.10	3.10 2.42	3.10				1.75 2.07	3.10				1.10	0.67		3.10			2.07	3.10 1.57	2.41		0.76										
Cook Islands	5.27	-	0.60 5.27	5.27 5.27	5.27 3.16		3.16 5.27	5.27 3.16	3.16 3.16		3.16 5.27	5.27 5.27	5.27				-	5.27	-	5.27 5.27	-	5.27	-		-	3.16	-	5.27 5.27	3.16	-	-	3.16										
Fiji		3.38				1.80					3.13 4.24	2.61 4.57	1.77				2.89					1.88 1.97						2.40		0.79												
French Polynesia		5.25				3.43 3.00	1.99				2.58		3.02 2.08	2.00			3.53					1.87 1.87			4.01			2.32	4.14 2.99	2.29		1.49 6.67										
Honk Kong	2.39		2.60 0.83	2.94 1.14	1.79 0.85	4.48 1.86	4.32 1.47				3.70 3.19	1.94 1.73	2.51 0.94	1.62 1.98			4.96 1.52	2.34 3.60			1.06		2.08 2.01	4.04			1.43	3.57 1.11	1.76		3.76 1.20											
India - Reliance	1.87		2.76 0.39	2.37		2.76 2.76					2.76 2.76		2.76 2.76	3.42	1.74 2.71	2.76		3.79		1.00 2.76	-		3.76 2.76			1.45	2.08 1.58	1.79		1.58												
Japan	3.49		1.65 1.65		2.57 3.49	1.61					1.65 1.65	1.65 1.61	3.49 1.65		1.15 2.57	1.61 1.61	3.49		3.49		1.65 1.65	2.57 1.65	8.08 5.32	1.61 2.57			1.61	3.49 1.61	1.61 3.49		2.57											
Macau		1.62 1.09		3.24 1.79	0.81						1.67 0.70	2.47 4.49	3.06 1.15	1.15 1.15			2.68 3.51	0.52				3.38	1.12 8.06	2.53 2.30			2.34	3.60 1.07	2.01		1.08											
Malaysia	1.78		1.19	0.74 2.67	0.89						1.78 1.33	0.74 0.74	2.67 1.33	1.19 1.33	1.33		1.33					1.33 0.88	1.19		0.74 1.33			0.44	1.19 0.74	0.89 2.67		0.89										
Maldives		### 0.93	3.17			3.50					2.81 3.58	3.30 2.54	3.29			3.85							3.80			2.92	3.05		2.32													
Mongolia	3.14		9.31 1.34			3.64					1.98 2.69	3.30 3.84	1.63			1.78 4.01	3.47					0.37		4.81			2.50	4.91 3.02	2.29		1.31											
Nepal	2.20		0.29 2.16	2.21 2.47							1.51 0.50	2.80 2.04	2.60			3.22					0.32		3.22			2.04	2.43		1.79													
New Zealand		5.41 1.19		1.48 2.07	3.83 2.71	2.67 2.74					2.00 4.92	3.48 2.42	2.25		1.27 1.72					2.92	2.07 1.19		1.41 2.74		3.16 1.90		4.11 1.72	1.83		1.69 3.16	1.19											
Pakistan	2.25		2.99 1.49		2.99 2.25	2.25					2.25 3.20		2.25 3.49		1.49 3.49	2.25				2.25 2.25			4.95 3.49		3.49 2.3		2.99 1.49	2.3		1.49												
Singapore		1.76 4.59		4.59 4.59	2.47		4.59 4.59				1.76 3.53	3.53 2.47	4.59 4.59	4.59 1.41	4.59		4.59 2.47		4.59 2.47		4.59 2.47		4.59 2.47		1.76 1.76		4.59															
Vanuatu	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10								

Calling home:

Classification of Outgoing Call to Home Country, by roaming country

Level of Discrimination in price offered (standard deviation)	High	Low
High	Bangladesh, Nepal, Pakistan Brunei Guam, Marshall Islands, Tong Macau, Taiwan	Maldives, Nepal Indonesia, Laos, Philippines Australia, French Polynesia, Palau, Papua New Guinea, Reunion, Vanuatu Mongolia
	Myanmar, Singapore, Thailand, Vietnam American Samoa, New Zealand, New Caledonia, Solomon Islands China, Hong Kong, Japan, Korea	Afghanistan, Bhutan, India Cambodia, Malaysia Cook Islands, Fiji, Samoa, Timor Leste
Low	Average Price Paid by Roaming Customer	High

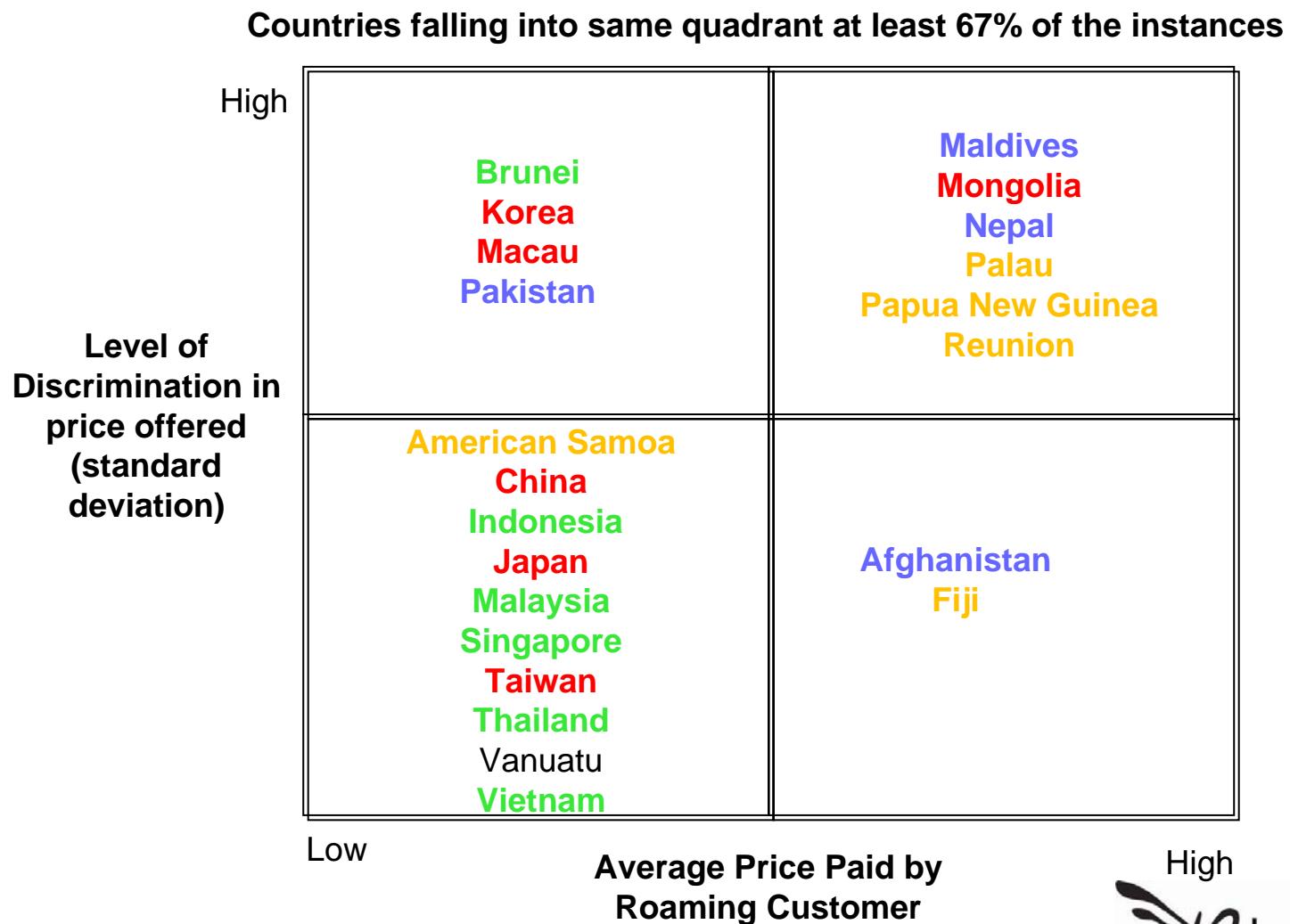
Sending an SMS: up to USD 1.58

	Afghanistan	Australia	Bangladesh	Bhutan	Brunei	Cambodia	China	Cook Islands	Fiji	French Polynesia	Guam	Hong Kong	Indonesia	India	Japan	Korea	Laos	Macau	Malaysia	Maldives	Mongolia	Nepal	New Zealand	New Caledonia	Palestine	Palau	Papua New Guinea	Philippines	Reunion	Singapore	Sri Lanka	Taiwan	Thailand	Tonga	Vanuatu	Vietnam
Australia	0.58	0.20	0.46	0.34	0.17	0.34	0.50	0.56	0.46	0.32	0.56	0.56	0.56	0.28		0.32	0.43	0.56	0.29	0.34	0.34	0.34	0.56	0.28	0.30		0.41	0.56	0.36	0.56	0.31	0.21	0.56	0.95	0.36	0.18
Bangladesh	0.37	0.34		0.33	0.28	0.12	0.29				0.38	0.15	0.48	0.23			0.13	0.34	0.25		0.21	0.35		0.20			0.17		0.25	0.22	0.18	0.35		0.15		
Bhutan		0.36	0.16								0.36		0.49	0.28																						
Brunei		0.52	0.52				0.52				0.52	0.52	0.66		0.66				0.52	0.66																
Cook Islands	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.28		0.56	0.56	0.56	0.56	0.56	0.56	-	0.56	0.56	-	0.56	0.56	0.56	0.56	-	-	0.56			
Fiji		0.33					0.38				0.59	0.14	0.69	0.43	0.44				0.49				0.39	0.29												
French Polynesia		0.44					0.34	0.43	0.61		0.44	0.61	0.28	0.36				0.43				0.43	0.28				0.27		0.32	0.31	0.18	0.44	0.37	0.38		
Guam	0.25	0.25	0.25			0.25				0.25	0.25	0.25	0.25	0.25			0.25	0.25					0.25		0.25		0.25	0.25	0.25	0.25						
India - AirTel	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	-		0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64			
India - Reliance	0.58	0.53	0.18	0.39		0.53	0.53				0.53	0.53	0.58	0.34	0.37	0.53	0.29	0.26	0.53							0.21	0.53	0.26	0.26	0.53	0.37	0.53				
Japan	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Macau	0.40	0.22		0.33	0.32	0.31				0.30	0.44	0.10	0.61	0.32	0.34	0.44		0.44	1.58				0.44	0.29	0.92	0.44	0.26		0.32	0.30	0.19	0.47		0.19		
Malaysia	0.59	0.59		0.59	0.59	0.59				0.59	0.59	0.59	0.59	0.59	0.59	0.59						0.59	0.59		0.59		0.30	0.59	0.59	0.59	0.59	0.59				
Maldives	0.39	0.17	0.38			0.28				0.39	0.17	0.53	0.30	0.30			0.38							0.23		0.27	0.32		0.39							
Mongolia	0.63	0.53	0.30			0.43				0.57	0.21	0.81	0.45	0.38		0.16	0.54					0.24		0.41		0.41	0.40	0.26	0.48		0.19					
Nepal	0.50		0.16	0.33	0.00	0.28				0.38	0.10	0.57	0.28	0.30			0.36				0.23		0.23		0.26	0.26		0.38								
New Zealand		0.56	0.56		0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56			0.56	0.56			0.56	0.56		0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56				
Philippines		0.66	0.55	0.55		0.55	0.55	0.55		0.55		0.66	0.55		0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55			0.55	0.55	0.55	0.55	0.55	0.55				
Singapore		1.06	1.06		1.06	1.06	1.06		1.06		1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06			
Sri Lanka		0.42	0.42	0.21	0.42	0.42	0.42	0.42	0.42			0.42	0.21	0.74	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.21			

Sending SMS: ASEAN countries offering lower rates on average

Classification of Outgoing SMS by roaming country			
Level of Discrimination in price offered (standard deviation)	High		Low
	Average Price Paid by Roaming Customer		
High	Bangladesh, Pakistan Cambodia Indonesia Philippines New Caledonia Macau, Taiwan	Maldives, Nepal Brunei Guam, Papua New Guinea, Reunion, Tonga Mongolia	Bhutan, Sri Lanka Malaysia, Singapore Australia, Cook Island, Vanuatu China, Japan
Low		Afghanistan, India Thailand Fiji, French Polynesia, New Zealand, Palau Hong Kong SAR	

Some consistency irrespective of type of call/SMS. E.g. Many SE Asian countries repeatedly in Lower Left Quadrant (cheap, don't discriminate). Many E Asian countries in left column (cheap)



The EU Directive on Roaming has eliminated the variability of prices paid by customers (when roaming in the EU)

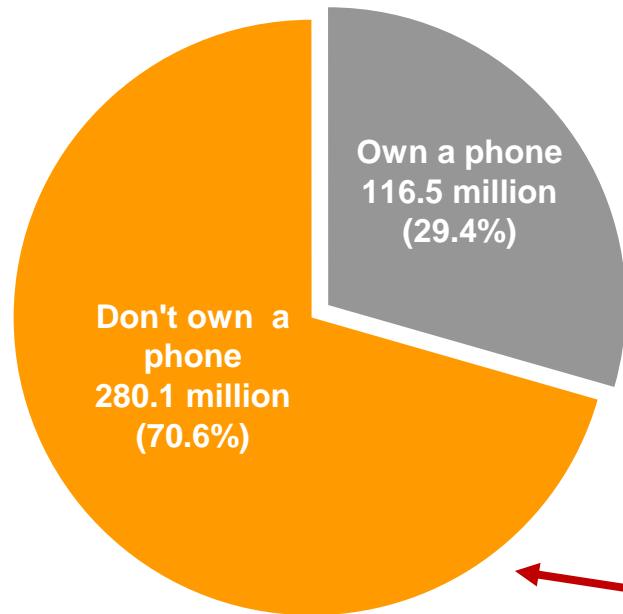
	Austria	Belgium	Bulgaria	Cyprus	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	The Netherlands	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	UK	USA	Asia-Pacific	Other countries	
Belgium	0.59		0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	1.10	1.20	2.00			
Bulgaria	0.73	0.73		0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	4.41	4.41	4.41			
Cyprus	0.35	0.35	0.35		0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.59-	1.18	1.18	1.18
Czech Republic	0.69	0.69	0.69	0.69		0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	4.00	2.25	2.25		
Estonia	0.58	0.58	0.58	0.58	0.58	0.58		0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	1.31	1.40	2.43		
Finland	0.60	0.60	0.60	0.60	0.60	0.60		0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	2.95	2.95	2.95		
Germany	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	1.49	2.99	2.99			
Greece	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.77	1.19	1.19			
Ireland	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	1.59	3.19	3.19			
Lithuania	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.88	1.33	1.41			
Luxembourg	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	3.31	4.09	4.09			
Malta	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	1.17	2.10	2.10			
Netherlands	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	1.75	2.25	2.25			
Romania	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.68	0.76	0.76			
Slovakia	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	2.71	3.89	3.89			
Spain	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	1.73	3.82	3.82			
Sweden	0.58	0.58	0.58	0.58	0.58	0.50	0.58	0.50	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	1.03-	1.90			
UK	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	1.37	0.85	1.99			

What do we know about the BOP & International calls?

- ▶ Some data for LIRNEasia Teleuse@BOP survey

Majority @ the BOP has access; but ownership of phones is low

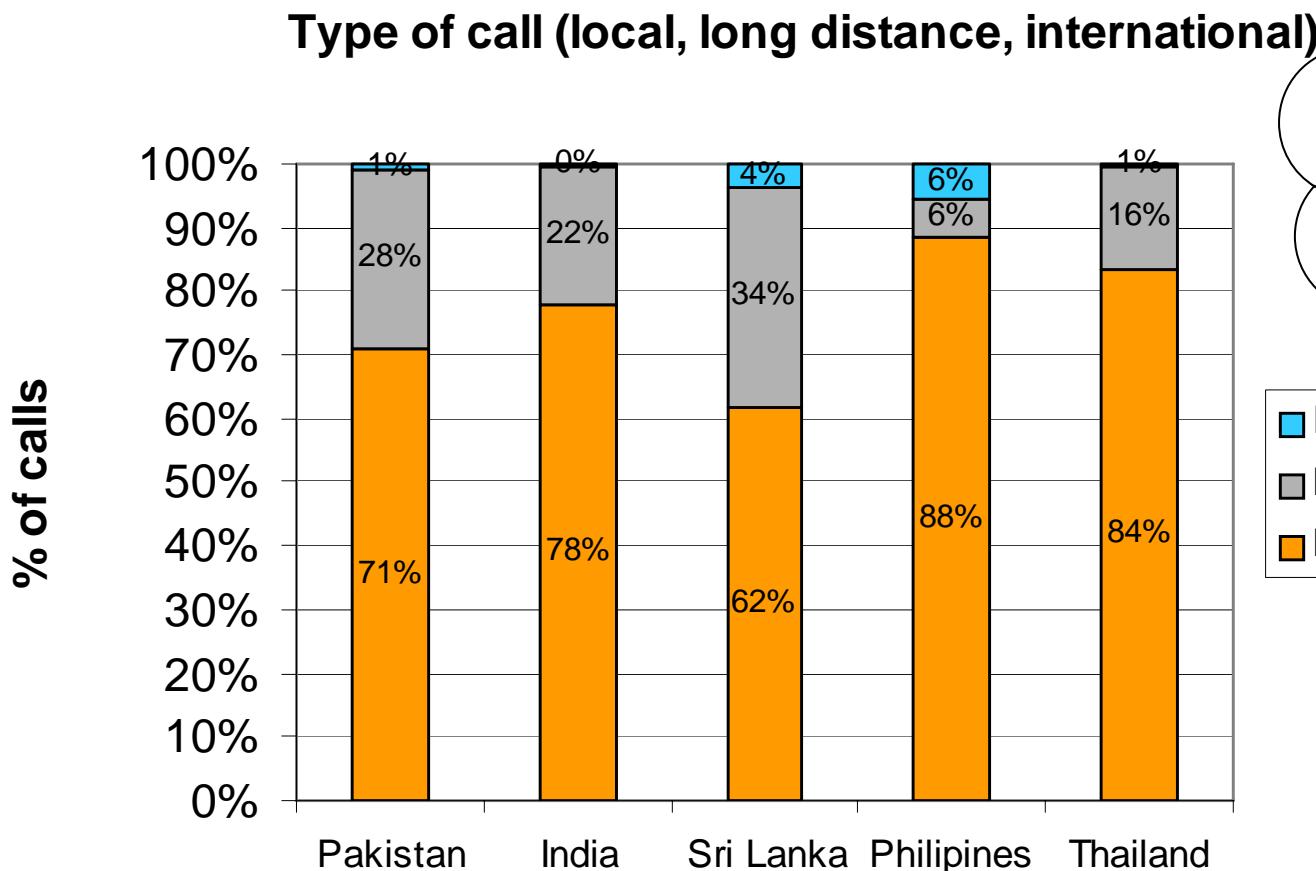
	South Asia			South East Asia	
	Pakistan	India	Sri Lanka	Philippines	Thailand
% who have Used phone in last 3 months	98%	94%	92%	93%	95%



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

Most users @ the BOP are non-owners

Mostly local calling @ the BOP. But some International from LK and PH. Migrant workers?



1.5 million expat workers
from Sri Lanka

Mostly in the Middle East

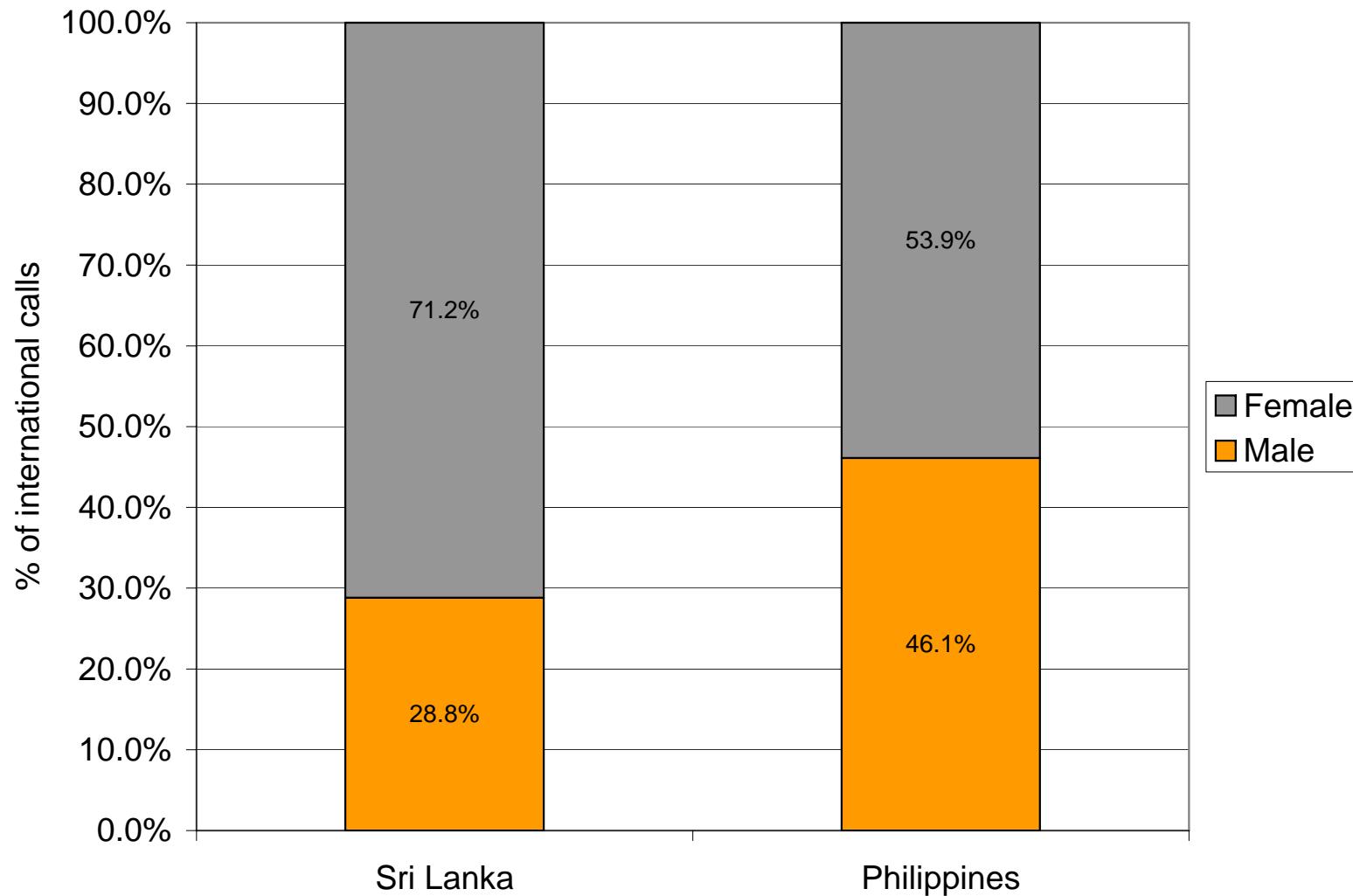
840,000 women and
660,000 men separated
from their
families...talking?

- International call
- Long distance call
- Local call

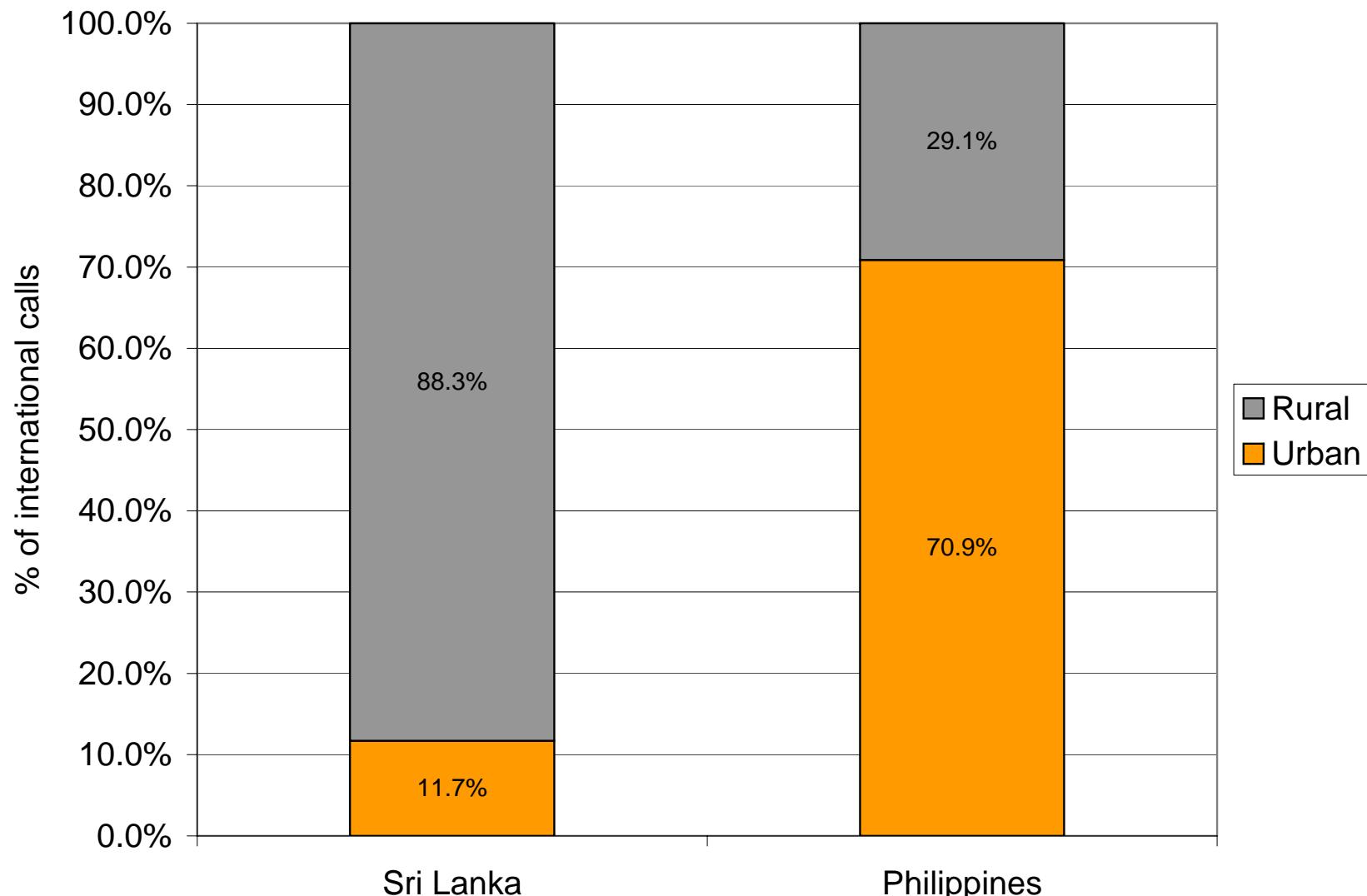
Profiling the BOP International Caller

- ▶ Sri Lanka: Primarily RURAL FEMALES
 - With primary & secondary education
 - Aged 25 – 54
- ▶ Philippines: Mostly URBAN MALES
 - With higher levels of education
 - Below 34
- ▶ Sri Lanka: trained & untrained laborers (25 %); Farmers / agricultural workers (16%); Housewives (13%)
- ▶ Philippines: mostly housewives (32%), those employed in services (18%) or unemployed (17%)

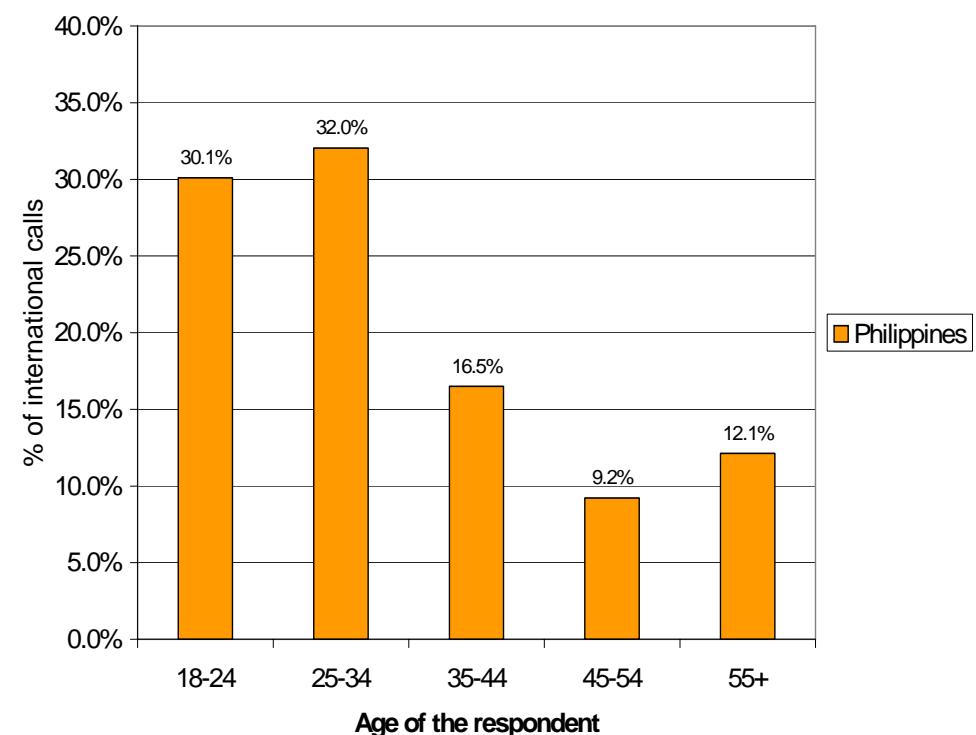
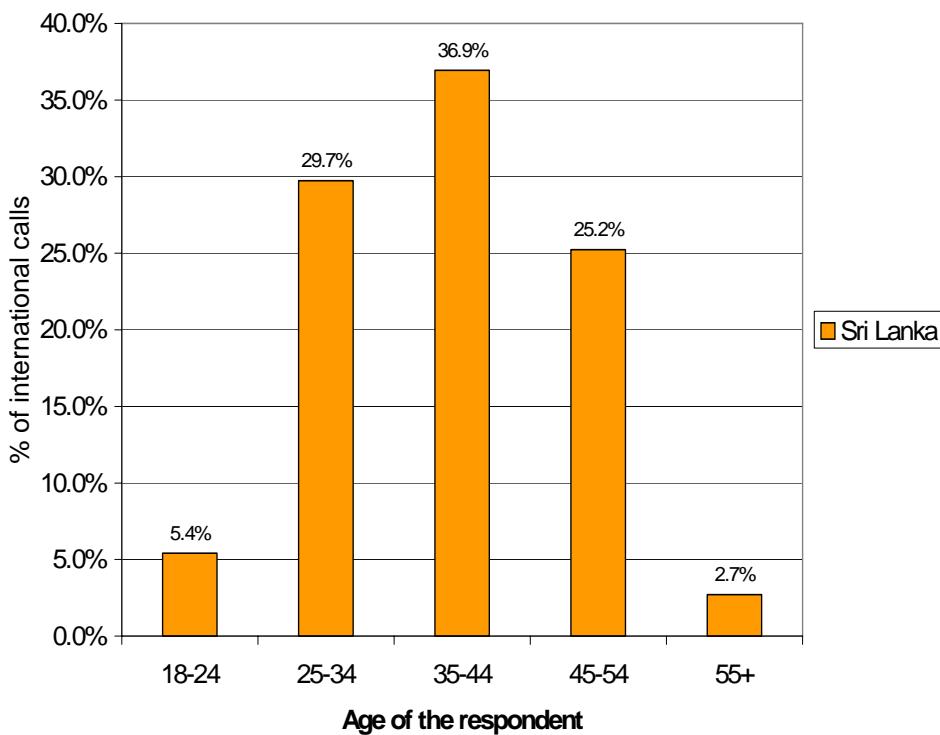
More international calls made by females



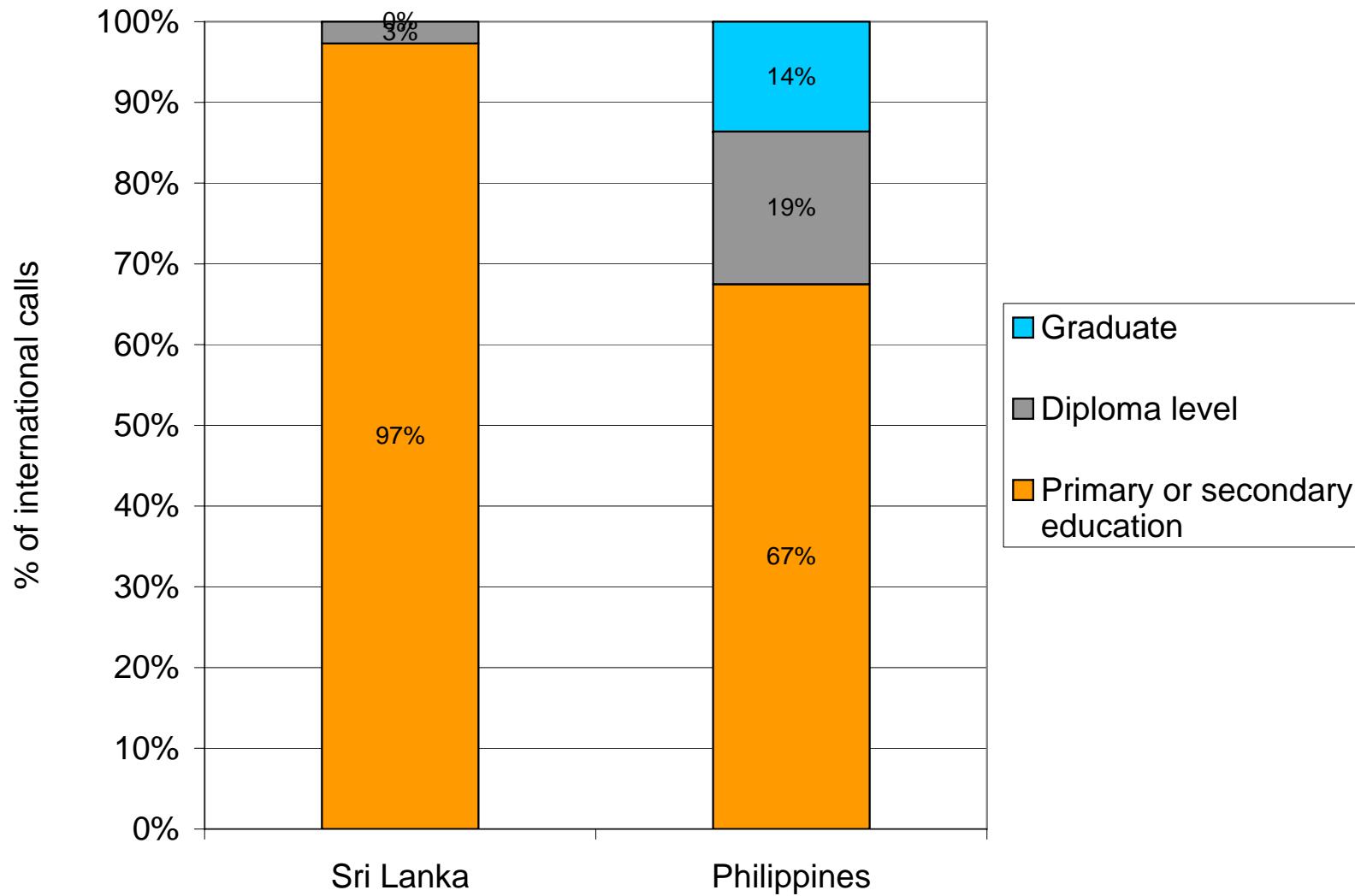
BOP International Calls are made from Rural Sri Lanka. But urban Philippines



Most international calls made by those under 44 in Sri Lanka. But younger (under 34) in the Philippines



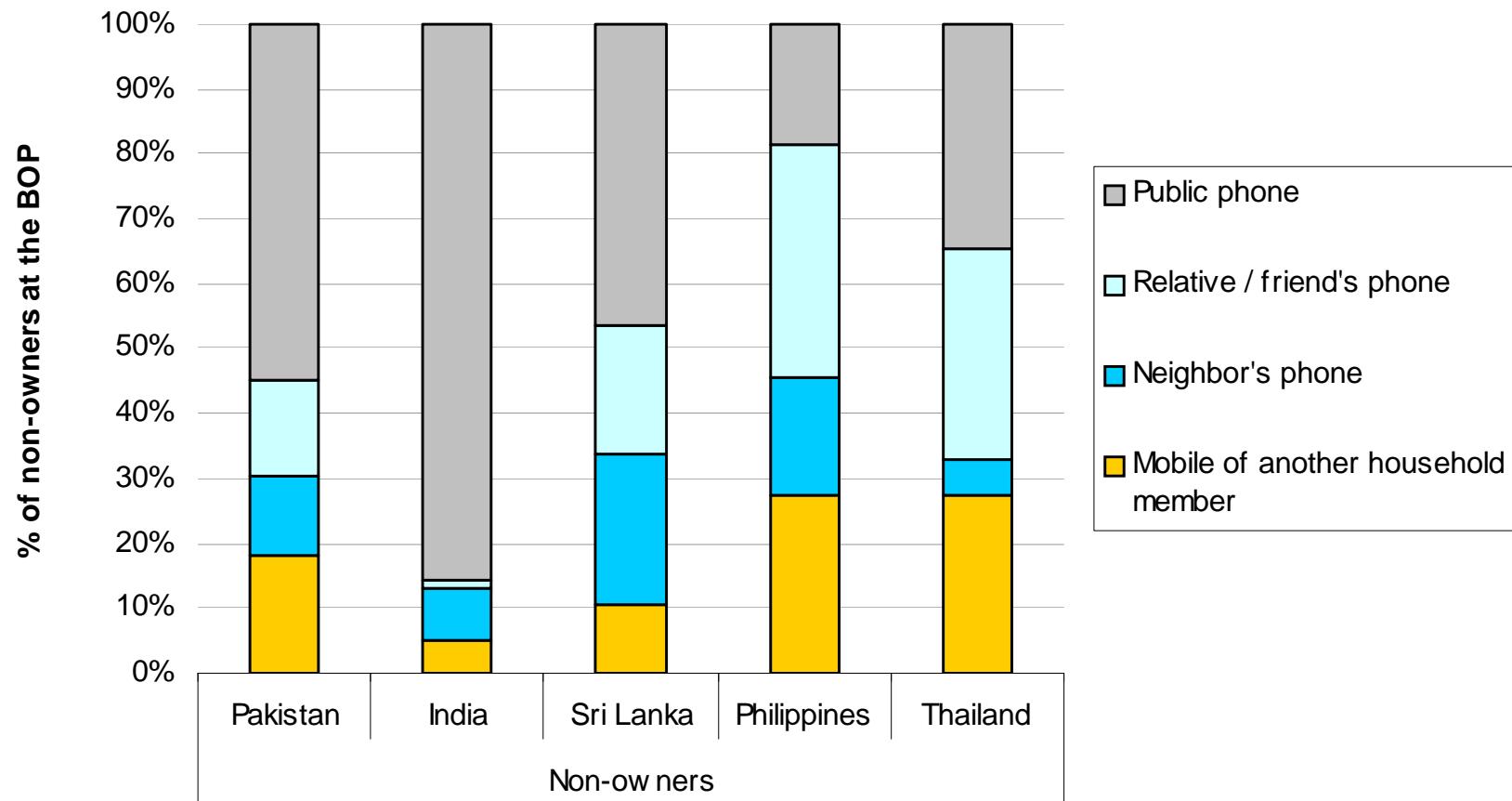
Slightly higher level of educational attainment in the Philippines than in Sri Lanka



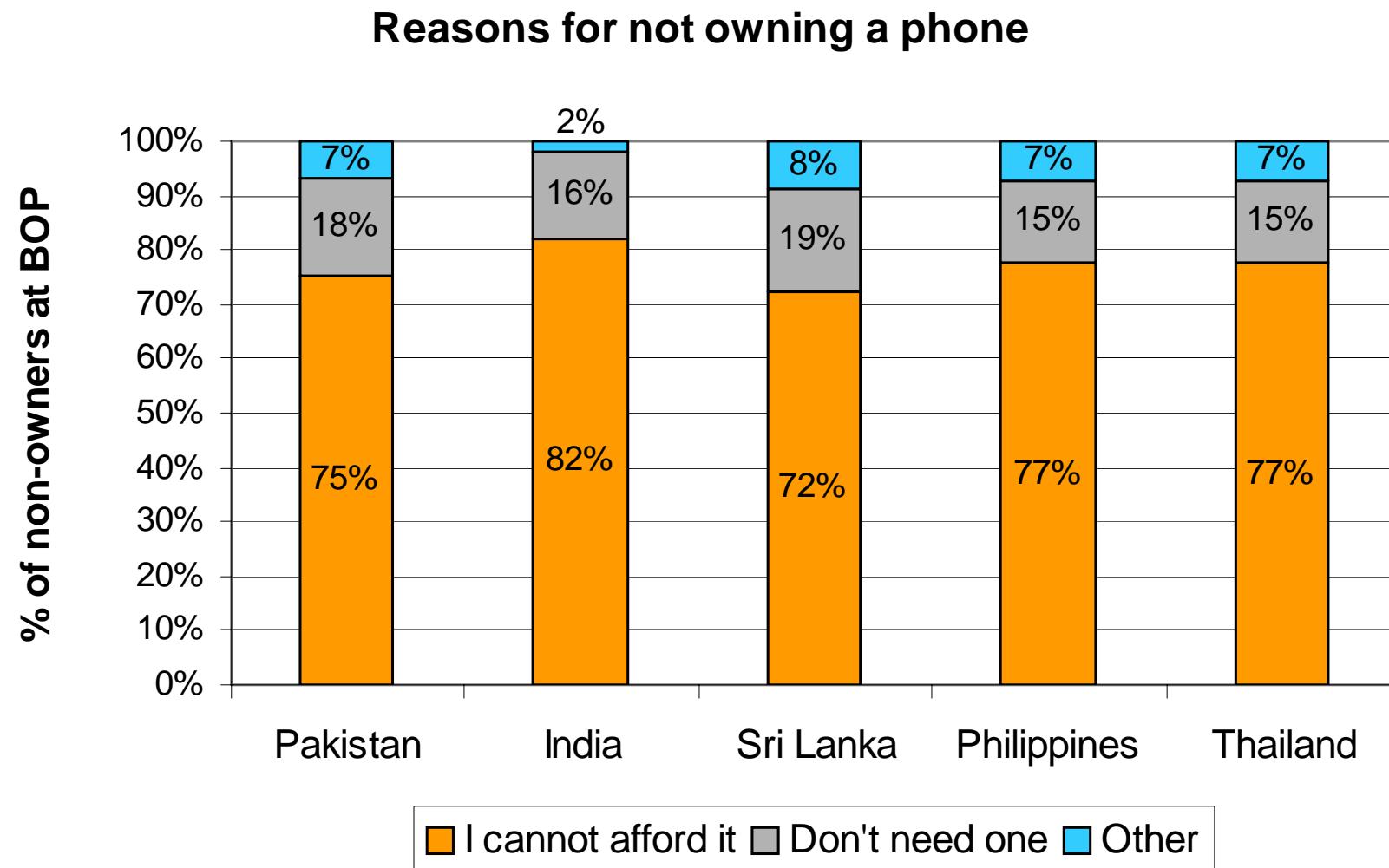
Lirneasia

www.lirneasia.net

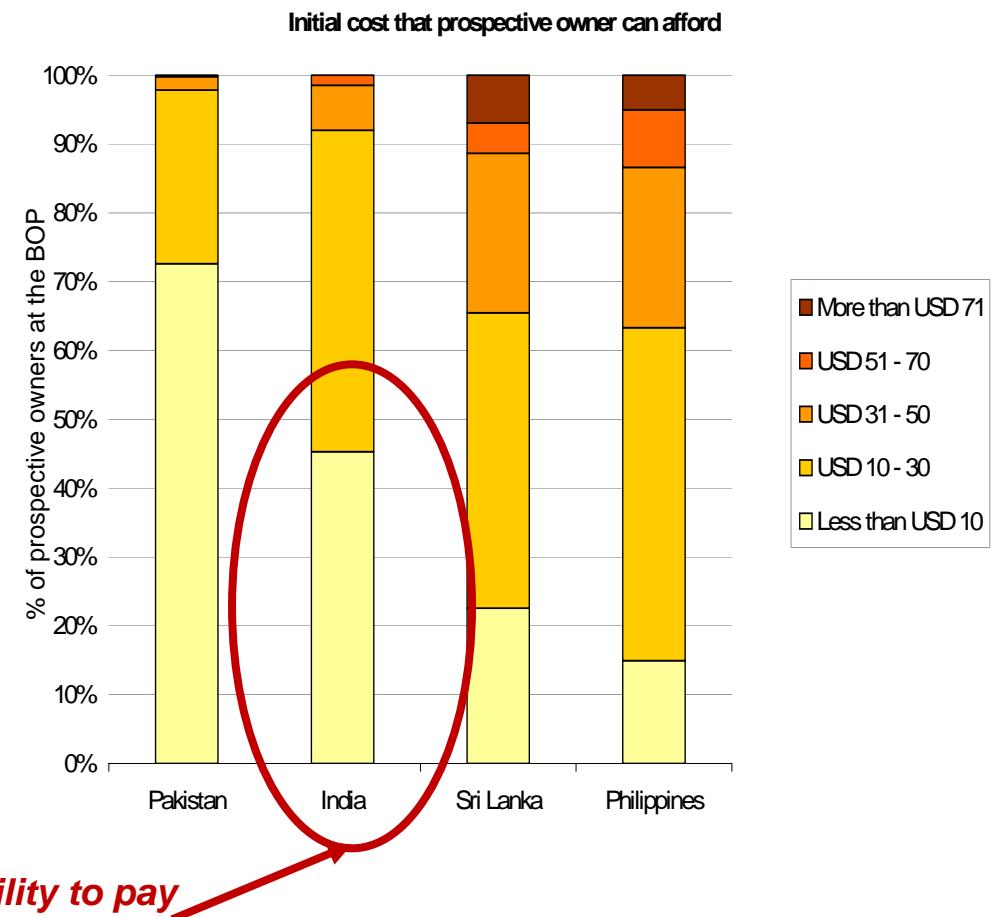
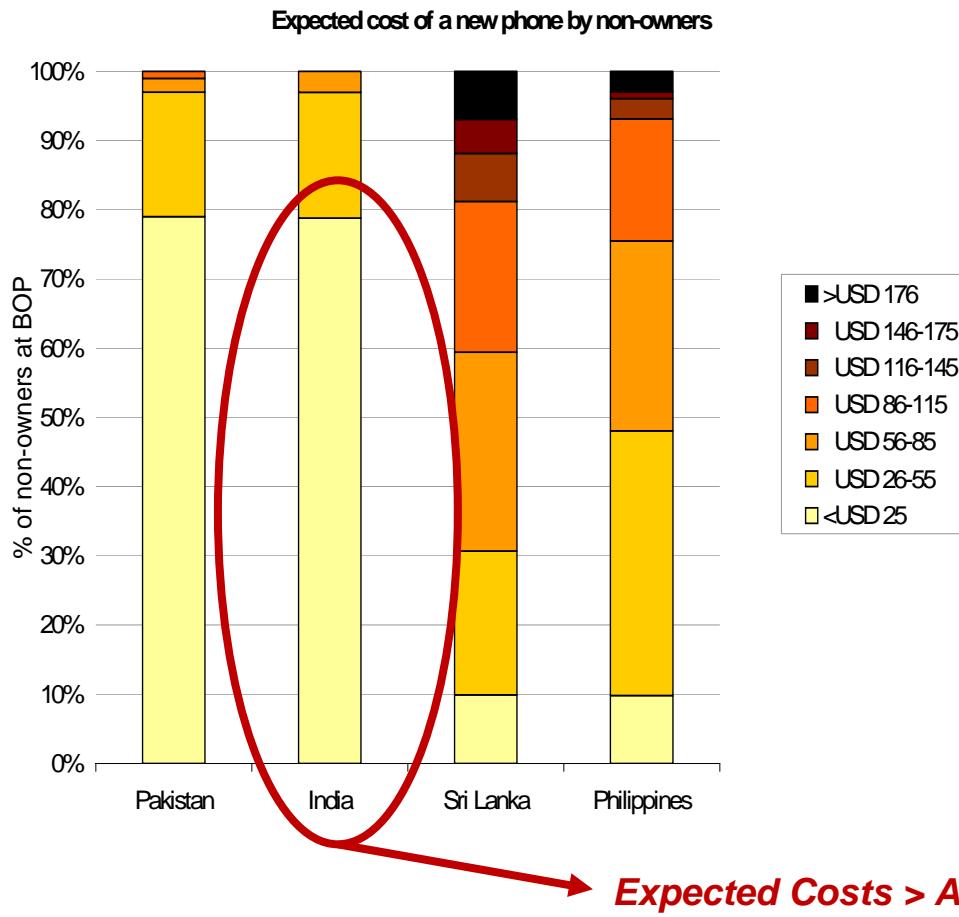
What phones do the BOP use to call? Public phones in S Asia. Communal use (sharing with friends/family) in S E Asia.



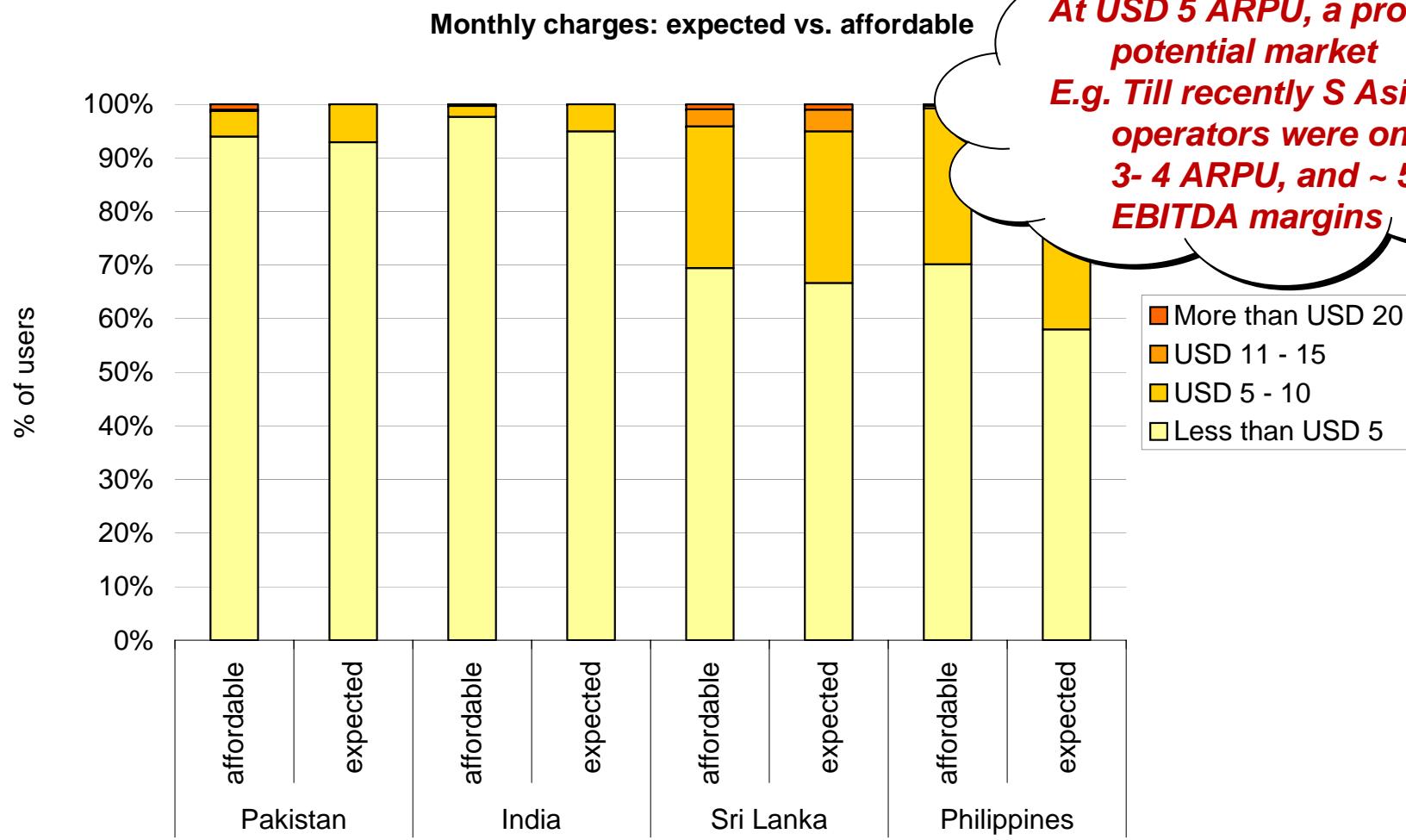
For non-owners, affordability is the biggest barrier to getting connected



The BOP thinks the initial cost of getting the connection (phone + activation etc) are not affordable

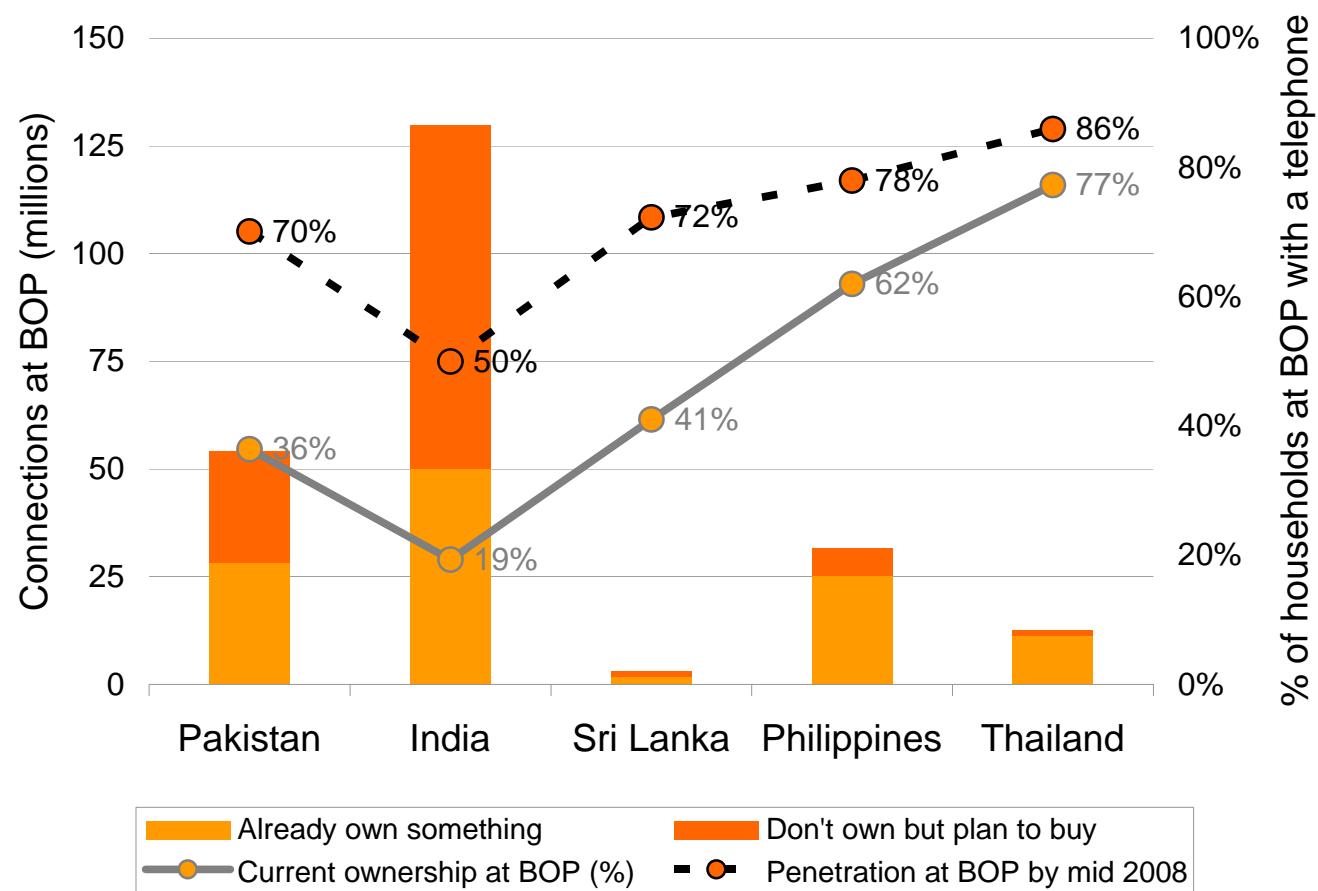
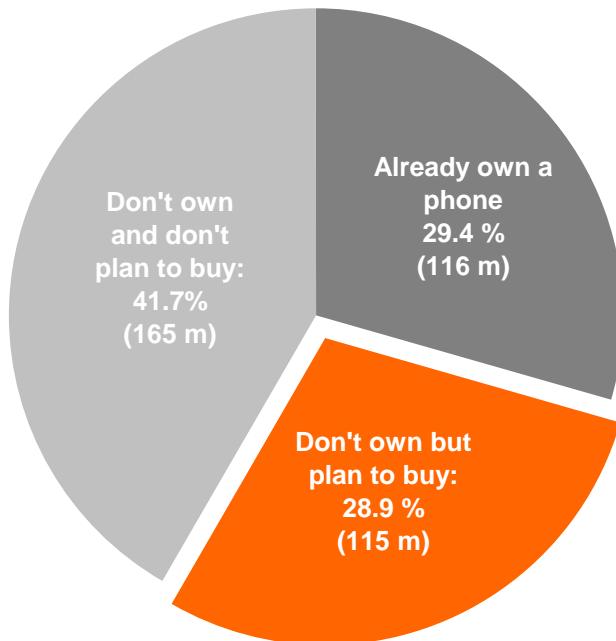


But recurring costs (call charges per month) are in line with affordability



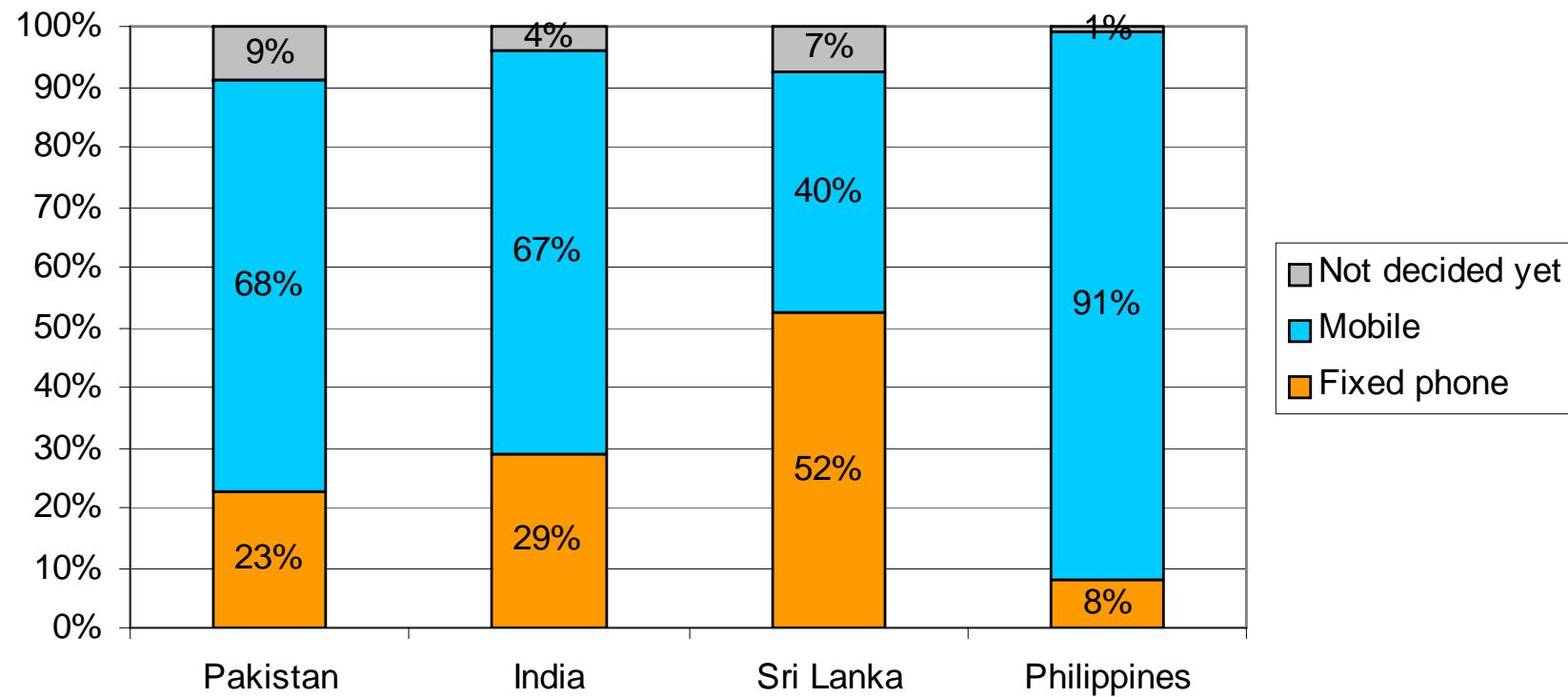
At USD 5 ARPU, a profitable potential market
E.g. Till recently S Asian operators were on USD 3- 4 ARPU, and ~ 50% + EBITDA margins

Many planned to purchase a phone (by 2008). 115 million new connections, not counting 2nd SIM cards

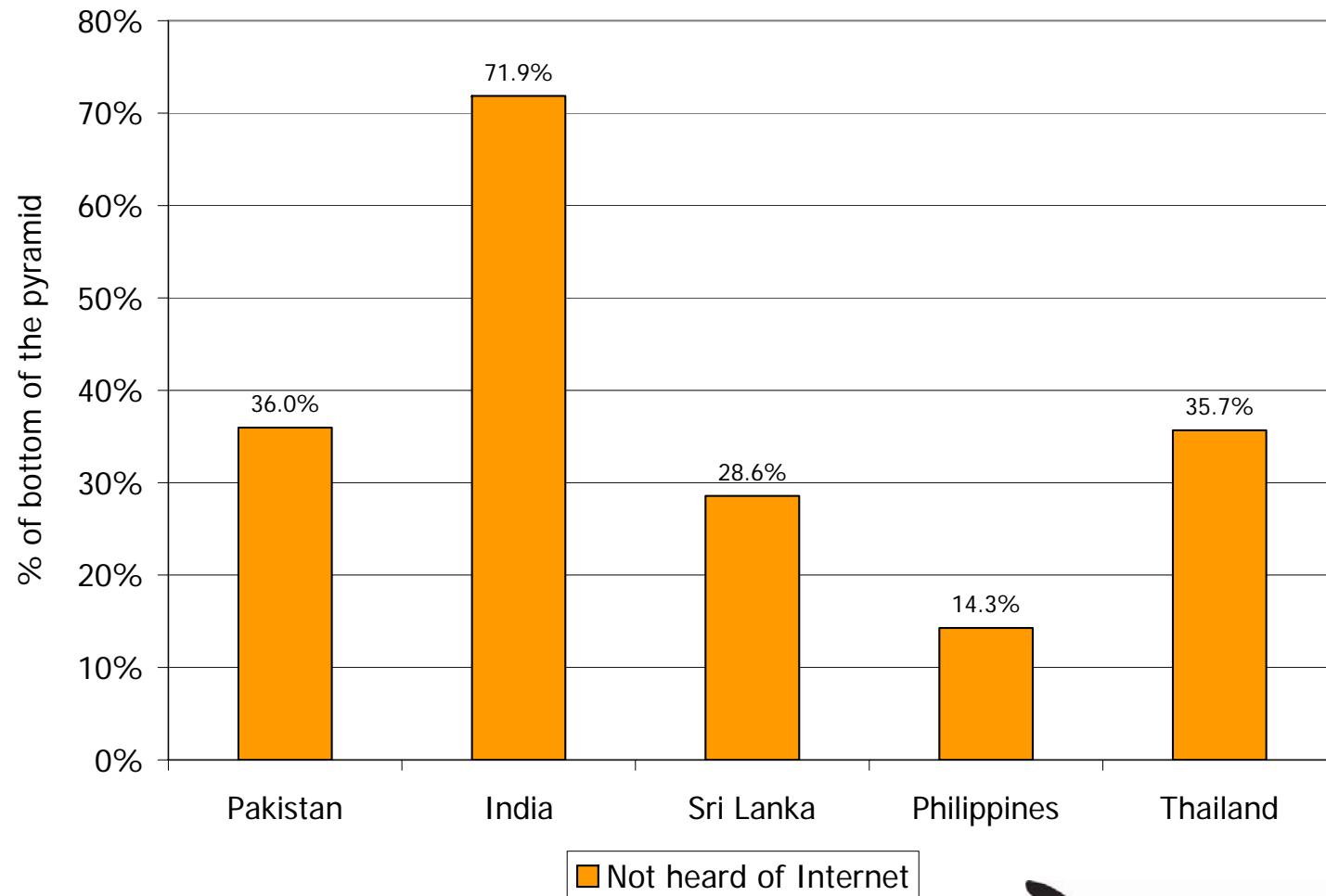


They planned to get new mobile phones mostly. Not fixed phones (except in Sri Lanka)

Type of phone prospective owners would buy



Low internet awareness...



Equally low internet usage...

	Pakistan	India	Sri Lanka	Philippines	Thailand
Respondents at the BOP who have Used the Internet	1.9%	0.3%	1.5%	8.8%	10.4%

....huge opportunity for mobile data services??

References, notes

Sources & Notes: International Direct Dialing Data

- ▶ **Afghanistan Roshan Telecom**, http://www.roshan.af/web/?page_id=472, Rates are applicable for calling both Fixed and Mobile phones
- ▶ **Bangladesh GrameenPhone**
- ▶ **Bhutan Bhutan Telecom**,
http://www.druknet.bt/btelecom/index.php?option=com_content&task=view&id=28&Itemid=42, Prepaid package IDD rates.
- ▶ **India Bharti Airtel**, http://www.airtel.in/Prepaid_tarrifs.aspx?path=1/6/6/2&cid=2 , Prepaid package Airtel Regular IDD rates; Calls terminating on fixed lines only
- ▶ **Maldives Dhiraagu**, http://www.dhiraagu.com.mv/beta/fixed/international_services/idd.php?country=bang
- ▶ **Nepal Spice Nepal**, http://www.spicenepal.com/index.php?option=com_content&task=view&id=33 , Prepaid package IDD rates
- ▶ **Pakistan Mobilink GSM**, <http://www.mobilinkgsm.com/idd/index.php>, Prepaid package Jazz Budget IDD rates; Calls terminating on fixed lines only
- ▶ **Sri Lanka Dialog GSM**, <http://www.dialog.lk/en/mobile/services/services.html> , Rates are applicable for calling both Fixed and Mobile phones
- ▶ **Exchange rates obtained from** <http://finance.yahoo.com/currency> on 21 May 2008.

Sources: International Roaming Data

- ▶ **Afghanistan** *Roshan Telecom*
- ▶ **American Samoa** *American Samoa Telecom*
- ▶ **Australia** *Telstra*
- ▶ **Bangladesh** *GrameenPhone*
- ▶ **Bhutan** *Bhutan Telecom*
- ▶ **Brunei** *B Mobile*
- ▶ **Cambodia** *CamGSM*
- ▶ **China** *China Mobile*
- ▶ **Cook Islands** *Telecom New Zealand*
- ▶ **Fiji** *Vodafone*
- ▶ **French Polynesia** *Vini*
- ▶ **Guam** *GuamCell*
- ▶ **Hong Kong** *CSL*
- ▶ **Indonesia** *Telkomsel*
- ▶ **India** *Bharti Airtel/Reliance Mobile*
- ▶ **Japan** *NTT DoCoMo*
- ▶ **Kiribati** *Telecom Services Kiribati Limited*
- ▶ **Korea** *SK Telecom*
- ▶ **Laos** *Lao Telecommunications*
- ▶ **Macau** *3*
- ▶ **Malaysia** *Maxis*
- ▶ **Maldives** *Dhiraagu*
- ▶ **Marshall Islands** *National Telecommunications Authority*
- ▶ **Micronesia** *FSMTC*
- ▶ **Mongolia** *MobiCom*
- ▶ **Myanmar** *MPT*
- ▶ **Nepal** *Spice Nepal*
- ▶ **New Zealand** *Vodafone*
- ▶ **New Caledonia** *Office des Postes et Télécommunications de Nouvelle-Calédonie*
- ▶ **Niue** *Telecom Niue*
- ▶ **Norfolk Island** *Norfolk Telecom*,
- ▶ **Northern Mariana Islands** *GuamCell*
- ▶ **Pakistan** *Mobilink GSM*
- ▶ **Palau** *Palau Mobile*
- ▶ **Papua New Guinea** *Bee Mobile*,
- ▶ **Philippines** *Globe Telecom*
- ▶ **Reunion** *Réunion Telecom*, **Samoa** *SamoaTel*
- ▶ **Singapore** *SingTel*
- ▶ **Solomon Islands** *Solomon Islands Telecom*
- ▶ **Sri Lanka** *Dialog GSM*
- ▶ **Taiwan** *Chunghwa Telecom*
- ▶ **Thailand** *AIS*
- ▶ **Timor L'este** *Timor Telecom*
- ▶ **Tonga** *Tonfon*
- ▶ **Vanuatu** *Telecom Vanuatu*
- ▶ **Vietnam** *Viettel*

All data are for August 2008

Sources and Notes: BB prices

1. Prices quoted in local currencies converted to US dollars based on rates found at: <http://www.oanda.com/convert/classic> at 10/02/2008. Annual prices for a Domestic Private Leased Circuit not inclusive of installation charges, modem/ router charges, any discounts, VAT or other taxes
2. Countries are ranked according to GDP per capita obtained from the World Economic Outlook database, Oct 2007
3. Also known as a tail cost
4. p.a = per annum
5. Cost of tail charges + 96km link charge
6. The package chosen are those that have an unlimited download capacity, in the event this package was not found the closest available offering was used.
7. Rates obtained from ATRA, 2007 data as reported in the earlier document, to be found at <http://www.lirneasia.net/wp-content/uploads/2007/09/bbenchmarks-page1-v4.pdf>
8. N/O- No offering was available at time of publication
9. Nepal Telecom, http://www.net.np/tariff/int_tariff_new.php
10. Radius Communications Pvt Ltd, <http://www.radiusnp.com/index.php>
11. BTTB, for a 5km link, <http://www.bttb.net.bd/rates.php#broadband>
12. Grameen Cybernet Ltd, Fibre-Optic Broadband connection, http://www.citechco.net/pro_int.php
13. Agni Systems Ltd, Premium package, guaranteed minimum speed is 256kbps, <http://www.agni.com/products/fiber.php>
14. PTCL, <http://www.ptcl.com.pk/contentb.php?NID=43>
15. PTCL, DSL 1MB unlimited package, <http://www.ptcl.com.pk/contentp?NID=47>
16. BSNL, http://www.bsnl.co.in/service/leased_tariff.htm
17. BSNL, http://www.bsnl.co.in/service/dataone_tariff.htm
18. MTNL, TriB Unlimited, http://www.mtnl.delhi.in/broadband/triband_tariff.htm
19. Bhutan Telecom, http://www.druknet.bt/btelecom/index.php?option=com_content&task=view&id=35&Itemid=62
20. Bhutan Telecom, DSL 15000, Data limit of 12GB, http://www.druknet.bt/btelecom/index.php?option=com_content&task=view&id=64&Itemid=112
21. Bhutan Telecom, DSL 1000, Data limit of 500MB, Does not discriminate between corporate and home users, http://www.druknet.bt/btelecom/index.php?option=com_content&task=view&id=64&Itemid=112
22. SLT, for a 0-33km link
23. SLT, for a 33- 99km link
24. Dialog, WiMax, 2MB Corporate package, <http://www.dialog.lk/en/broadband/product/wimax.html>
25. SLT, ADSL Office, Home Express, <http://www.slt.lk/data/forbusiness/115adsl.htm>
26. Dhiraagu, <http://www.dhiraagu.com.mv/tariffs/dhivehinet.php#dedicatedaccess>
27. As per data obtained from the earlier document, to be found at <http://www.lirneasia.net/wp-content/uploads/2007/09/bbenchmarks-page1-v4.pdf>, Data not available for this quarter.
28. Focus Infocomm, ROL corporate access 2MB, <http://www.rol.net.mv/downloads/ROLTariffSheet.pdf>, Dhiraagu does not have a 2MB package with an unlimited offering.
29. Dhiraagu, Biz Unlimited package, <http://www.dhiraagu.com.mv/tariffs/dhivehinet.php#broadband>
30. Focus Infocomm, ROL broadband 256 value for homes, <http://www.rol.net.mv/downloads/ROLTariffSheet.pdf>

Thank you. More at www.lirneasia.net