



International Peer Benchmarking Study on South Africa's ICT Sector

Department of Communication
June 2009

Introduction

The Department of Communication Commissioned the BMIT to analyse

- telecommunications voice, data and broadband services and product prices at
- international, national, retail, business and residential levels in
- South Africa, Brazil, Chile, Korea, India and Malaysia to assess its relative performance in respect of
- Cost , usage, access and quality

This booklet contains the PEER BENCHMARKING RESULTS for the International Peer Benchmarking Study on South Africa's ICT Sector.



Policy Environment (1)

Major events that significantly transformed the regulatory regime for the telecommunications sector in South Africa were:

- The corporatisation of Telkom in 1991
- The licensing of two mobile operators in 1993
- The enactment of the Telecommunications Act of 1996
- The sale of a 30% shareholding in Telkom to Thintana17 in 1997
- The subsequent amendment of the Act in 2001 making provision for the licensing of an SNO and
- The enactment of the Electronic Communications Act and the ICASA Amendment Act in 2006.



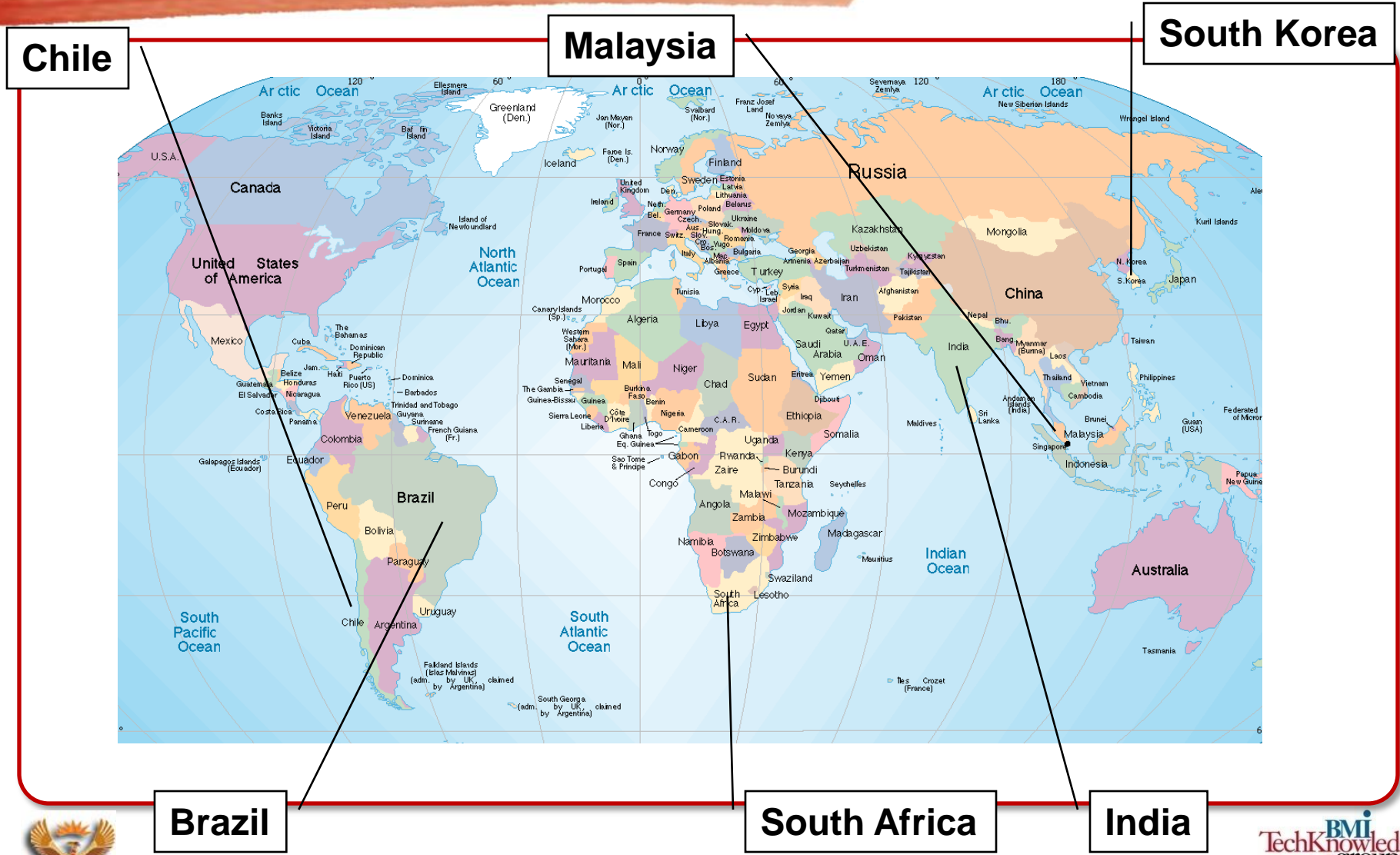
Policy Environment (2)

Other significant events included:

- The issuing of a third mobile licence in 2001
- The merging of the separate broadcasting and telecommunications regulatory authorities to form ICASA in 2001
- The issuing of a Multimedia Services Licence and Carrier of Carriers License to Sentech Limited in 2002
- The public listing of Telkom SA in 2003
- The licensing of the Second Network Operator in 2004
- The coming into effect in 2005 of a ministerial determination expanding commercial opportunities available to several types of market participants, notably VANS providers permitted to offer voice telephony services
- The declaration of submarine cable landing stations as essential facilities, and
- The decision to expedite the local loop unbundling process for completion by 2011.



Benchmark countries



Chile

Malaysia

South Korea

Brazil

South Africa

India









Purchasing power parity (PPP)

- Takes into account differences in the relative prices of goods and services
- Measured in current international dollars which are calculated to have same purchasing power as a dollar spent on GNI in the U.S. economy
- “Big Mac” example from The Economist magazine (July 24, 2008):
 - Price of Big Mac in USA: US\$3.57
 - Price of Big Mac in South Africa: US\$2.24
 - Difference between South Africa and USA: -37%
 - Adjusted PPP South Africa exchange rate to US dollar: $7.56 * -1.37 = 4.75$



Basic indicators

The benchmark country with the largest population is India with a population over five times bigger than the next most populated nation, Brazil. South Africa's population is in the middle of the benchmark countries, similar to Korea and larger than Chile and Malaysia. Gross domestic product (GDP) per capita is in current United States dollars and in purchasing power parity (PPP)

		Population (2006) (000s)	Urban population (% of total)	Surface area sq km2	Population density	GDP (PPP) per capita 2007
Brazil		189,323	85	8,514,880	22	\$ 9,695
Chile		16,433	88	756,630	22	\$13,936
India		1,109,811	29	3,287,260	338	\$ 2,659
Korea		48,418	81	99,260	488	\$24,783
Malaysia		26,114	69	329,740	79	\$13,315
South Africa		47,391	60	1,219,090	39	\$9,761

Source: World Bank (Population, urban population and surface area). IMF (GDP).



Taxes

All countries levy a Value Added Tax (VAT) or sales tax on telecommunications services. The rates are shown below.

Country	VAT rate	Note
Brazil	28.7%-38.7%	The principal tax is a state value-added tax, "ICMS", which varies by state (25% to 35%). Other taxes imposed on telecommunications services include the "PIS" (3%) and "COFINS" (0.65%).
Chile	19%	Value Added Tax
India	12.36%	Federal service tax rate is 12%. In addition, education "cess" at 2% and secondary and higher education cess at 1% is collected on service tax amount. Therefore, total tax rate comes to 12.36% (i.e. 12% + 3% of 12%).
Korea	10%	Value Added Tax
Malaysia	10%	Sales Tax
South Africa	14%	Value Added Tax

Source: Adapted from Deloitte and company reports.



Fixed telephone market

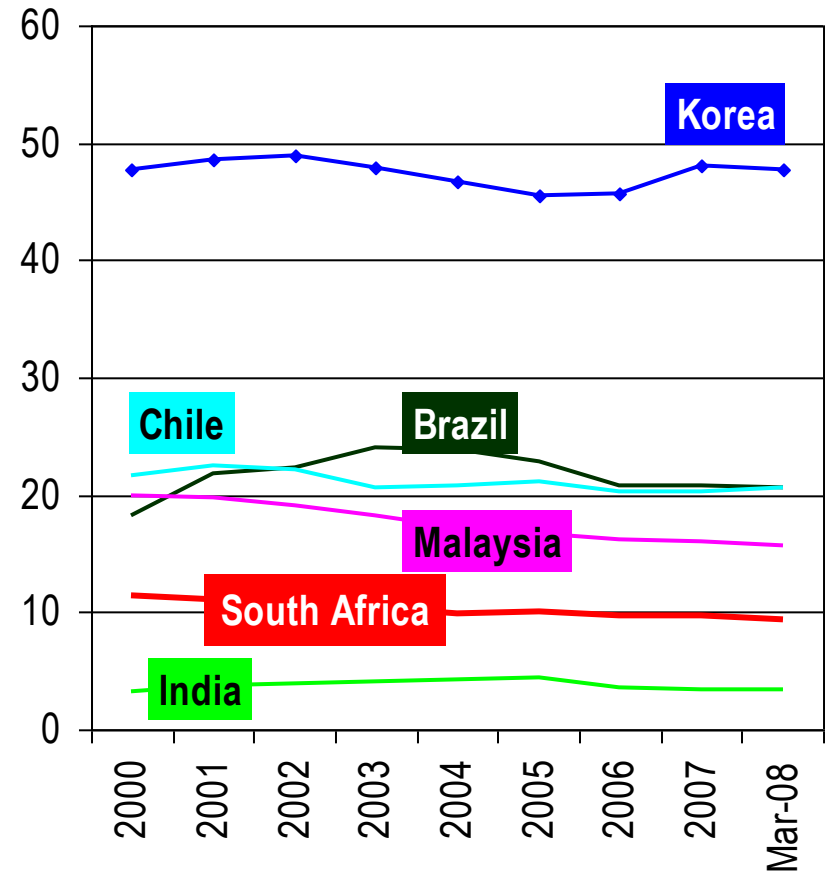
- Fixed line access generally dominated by incumbent operator:
 - Brazil: Regional domination (Telesp, Brasil Telecom, Oi) with some Wireless Local Loop (WLL) competition
 - Chile: CTC with some regional operators
 - India: BSNL with MTNL in Delhi and Bombay and competition from WLL
 - Korea: Korea Telecom (90%) of lines, one other nationwide competitor
 - Malaysia: Telekom Malaysia
 - South Africa: Telkom; new competitor with Neotel
- Domestic & international long distance markets generally open; indirect domestic long distance competition from mobiles
- Brazil, Chile, India and Korea pretty competitive with a number of facilities-based long distance operators



Fixed telephone penetration

- Growth in fixed lines has been stagnant in most of countries
- Only Malaysia & South Africa with less fixed lines at March 2008 than December 2000

Fixed telephone line subscribers per 100 people



Fixed connection charges

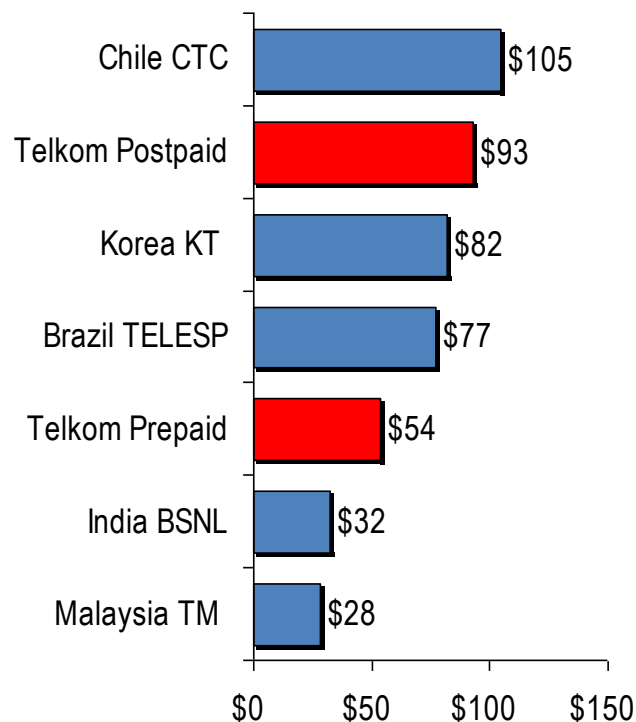
Connection charges include:

- Subscription charges (Residential & Business)
- Call charges

Findings

- No distinction between residential and business
- Most alternative operators do not charge for connection
- In Brazil, connection varies by region
- Telkom South Africa does not charge connection for “Closer” Plans

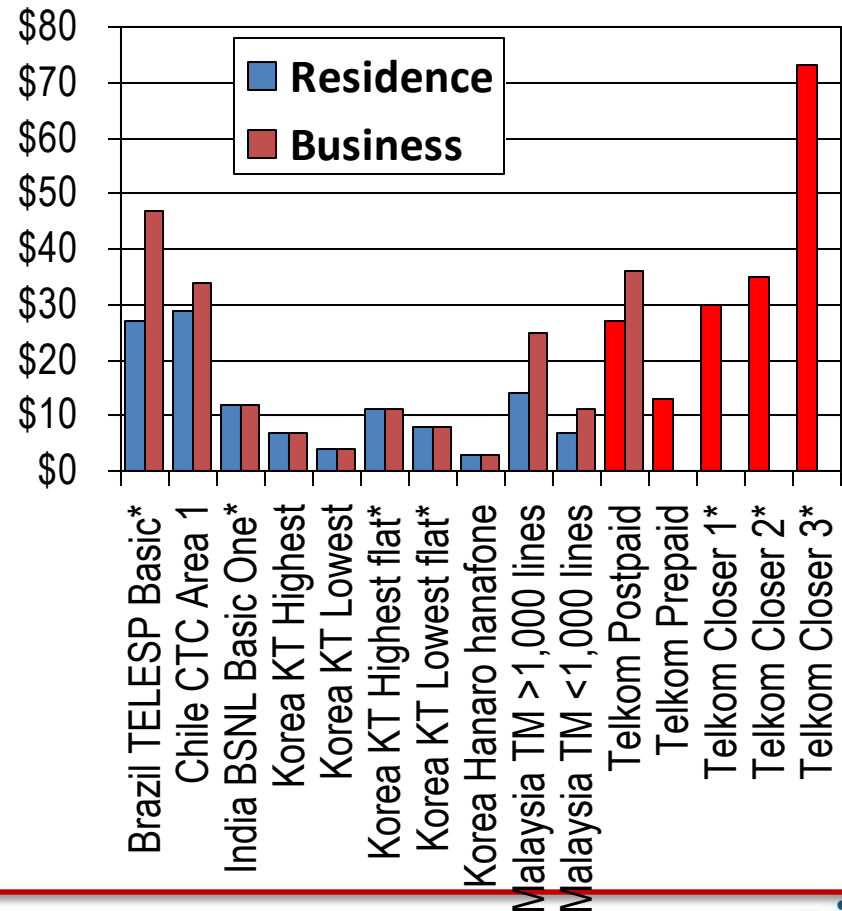
Fixed line connection charges, August 2008, PPP



Fixed monthly subscription

- Big range in subscription charges among benchmark countries
- Subscriptions vary by residential or business and whether free or discounted calls / minutes included

Monthly fixed line subscription charges, August 2008, PPP



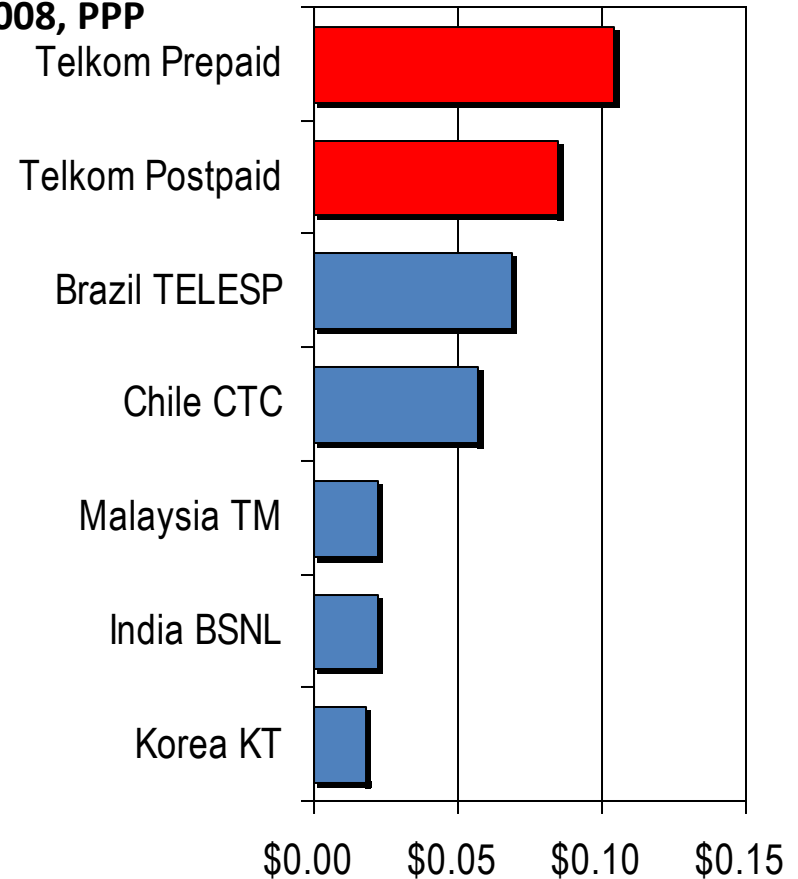
* Includes free minutes or calls or discounted call prices.



Fixed local call

- South Africa has the highest fixed local call charges (i.e., fixed local call to another fixed line)

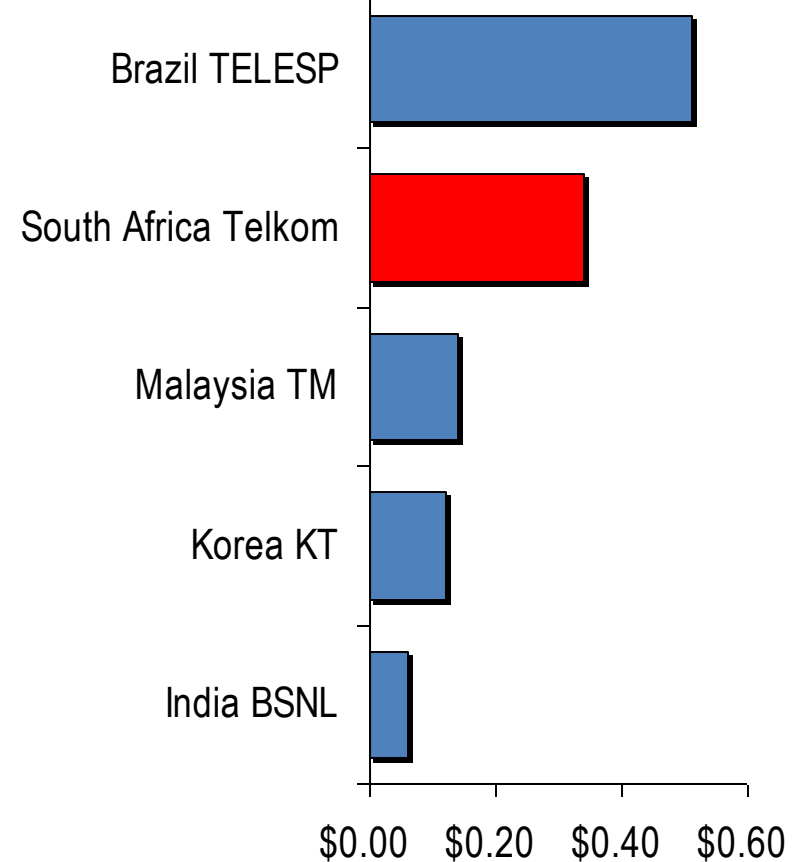
Price of a one minute peak rate fixed local call, 2008, PPP



Fixed to mobile call

- South Africa has second highest price
- Along with Brazil, significantly above other countries

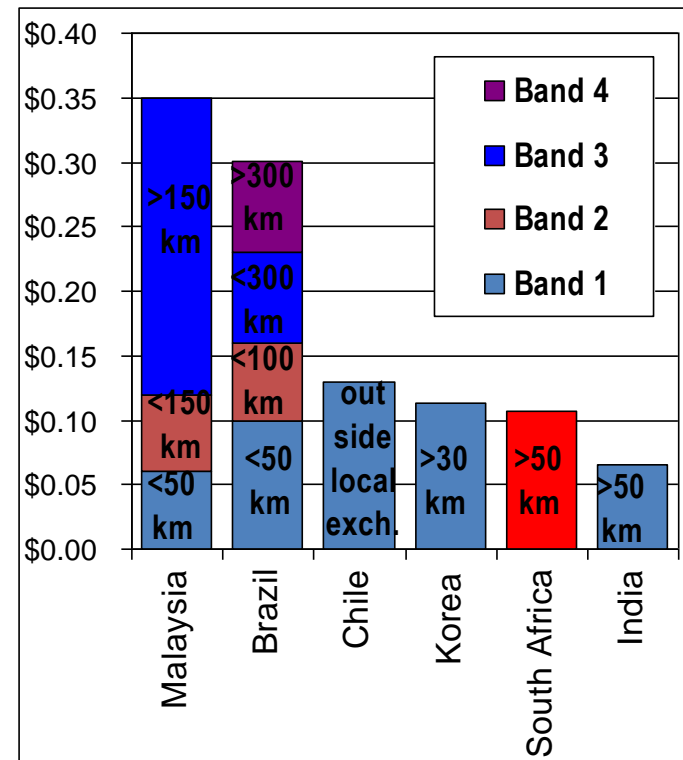
Price of a one minute fixed to mobile call, average peak/off-peak, 2008, PPP



Domestic long distance

- Influenced by mobile telephony (e.g., single price for national call) and VoIP
- Chile, Korea, South Africa & India only have one long distance band
- South Africa has second lowest prices

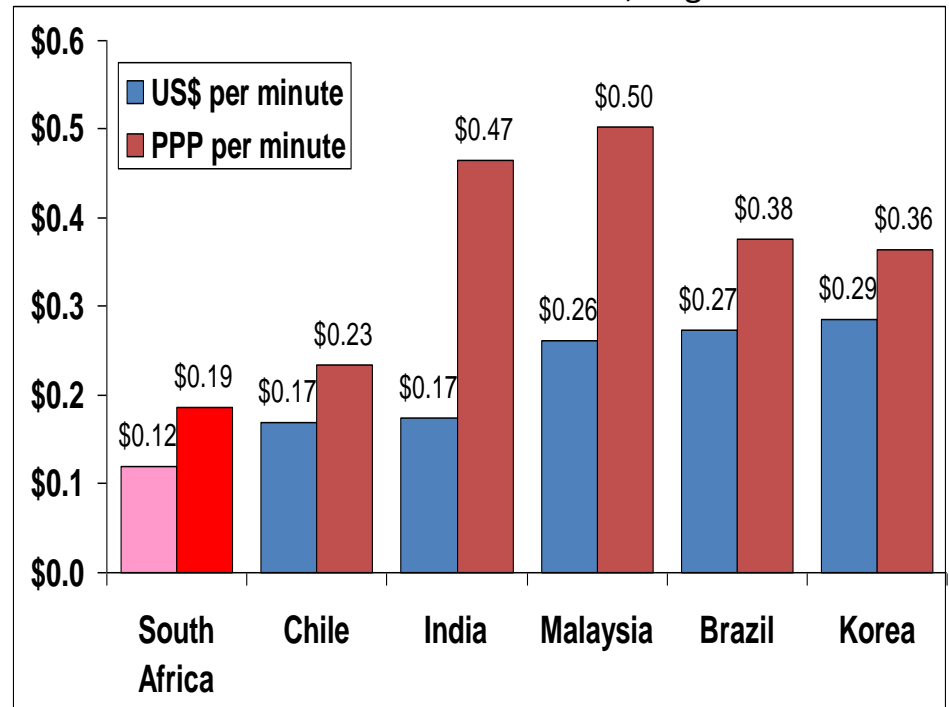
Average price per minute domestic long distance, PPP, August 2008



International long distance

- Despite the lowest level of facilities-based international telephone call competition, South Africa has the cheapest tariffs
- This is partly due to extensive tariff rebalancing but is still surprising
- There is not more of a competitive threat from VoIP in South Africa since it is legal in all the other countries also (to various degrees, either full VoIP or PC-phone)

Price of one minute call to USA, August 2008



Price reflects calls placed from fixed lines of incumbent operators.
Peak and off-peak have been averaged.

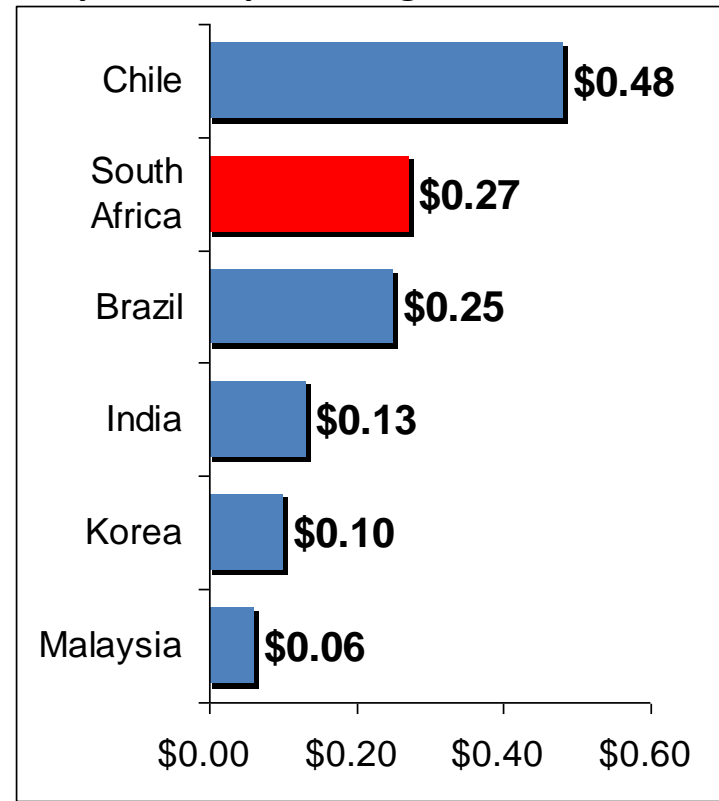
Source: Operator's published tariffs.



Public payphone

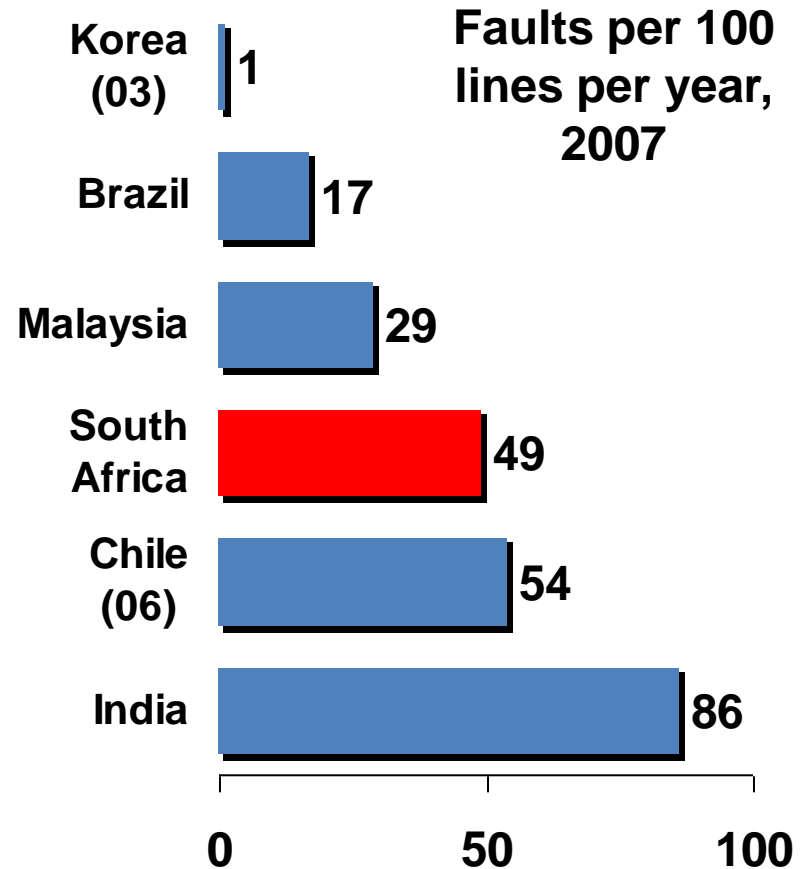
- Price of calls from payphones important for those without telephone or with mobiles looking for cheaper call prices

3 minute call from public payphone, average peak/off-peak, August 2008, PPP



Fixed line Quality of Service (QoS)

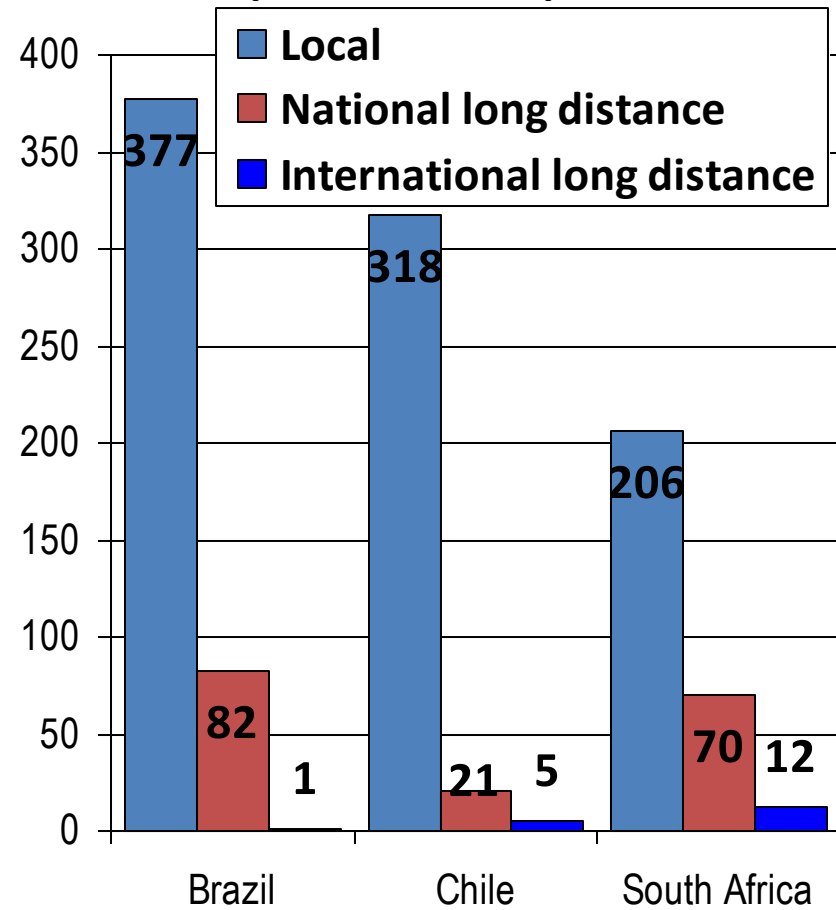
- The only fixed QoS indicator available for all countries is the number of faults
- On average, one of out of every two fixed lines have a fault in South Africa each year compared to one in 100 in Korea but almost 9 out of 10 in India



Fixed telephone usage

- Local usage low in South Africa compared to benchmark countries
- Long distance usage relatively high

Minutes of use per subscriber per month, 2007



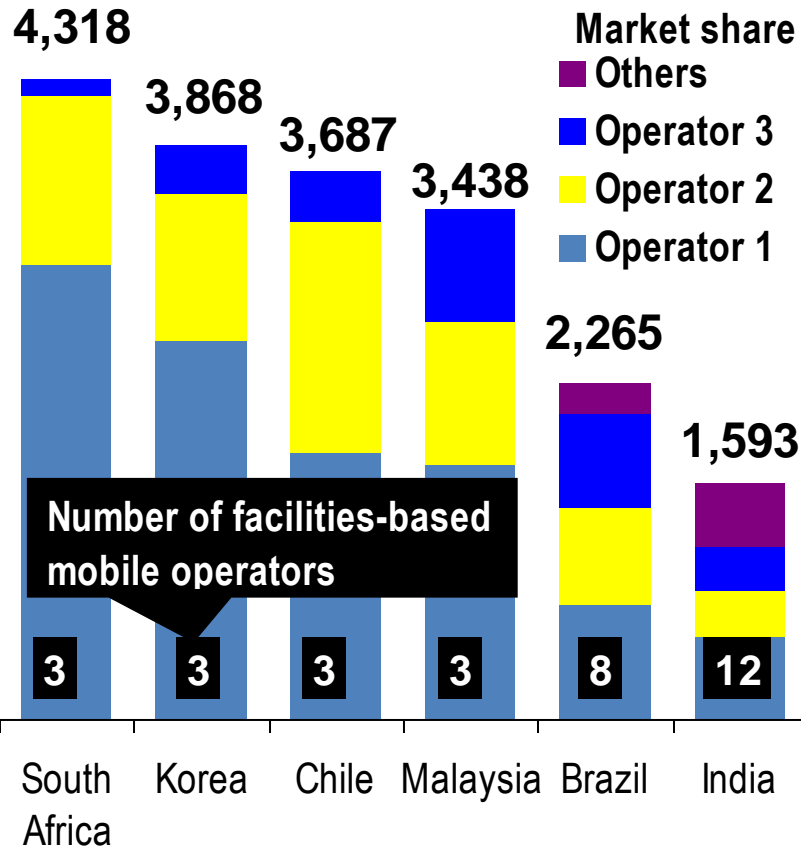
Fixed telephony - Summary

- Long distance – international and domestic – relatively cheap in South Africa compared to other benchmark countries
- However other fixed charges are relatively high in South Africa and it has rebalanced more sharply than other countries
- Fixed penetration is lower today in South Africa than in 2000



Mobile market

Herfindahl-Hirschman Index December 2007

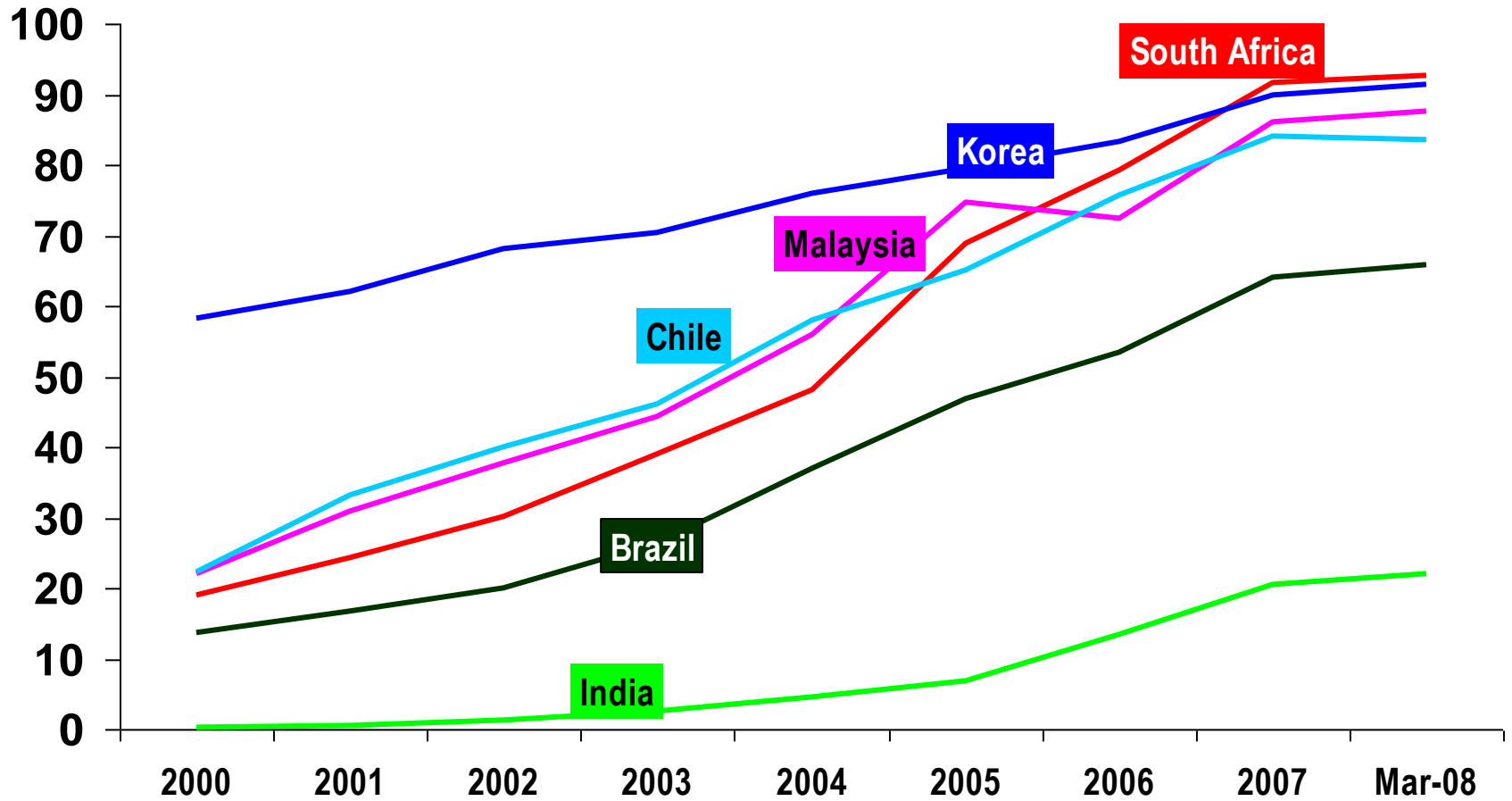


- South Africa has the most concentrated mobile market
- Most of the benchmark countries, like South Africa, have 3 nationwide operators
- Brazil and India have a larger number of mobile groups although not all operate nationwide



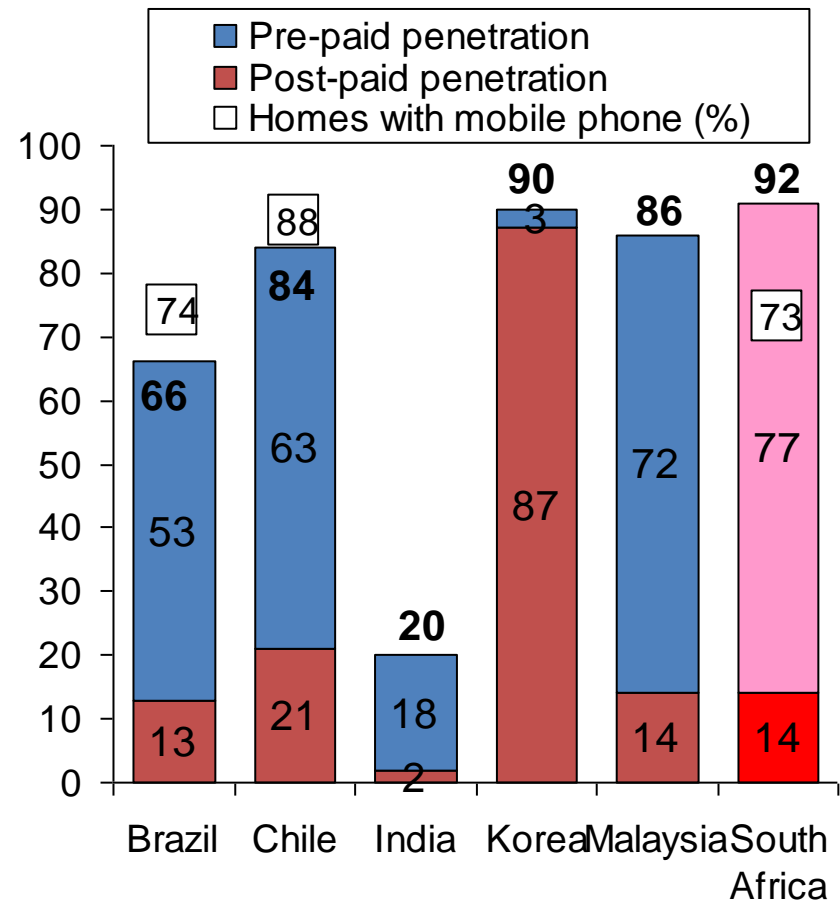
The Herfindahl-Hirschman Index (HHI) is a measure of market concentration calculated by squaring the market share of each firm and then summing the resulting numbers. The closer the HHI is to zero, the less concentrated the industry.

Mobile penetration



Mobile penetration December 2007

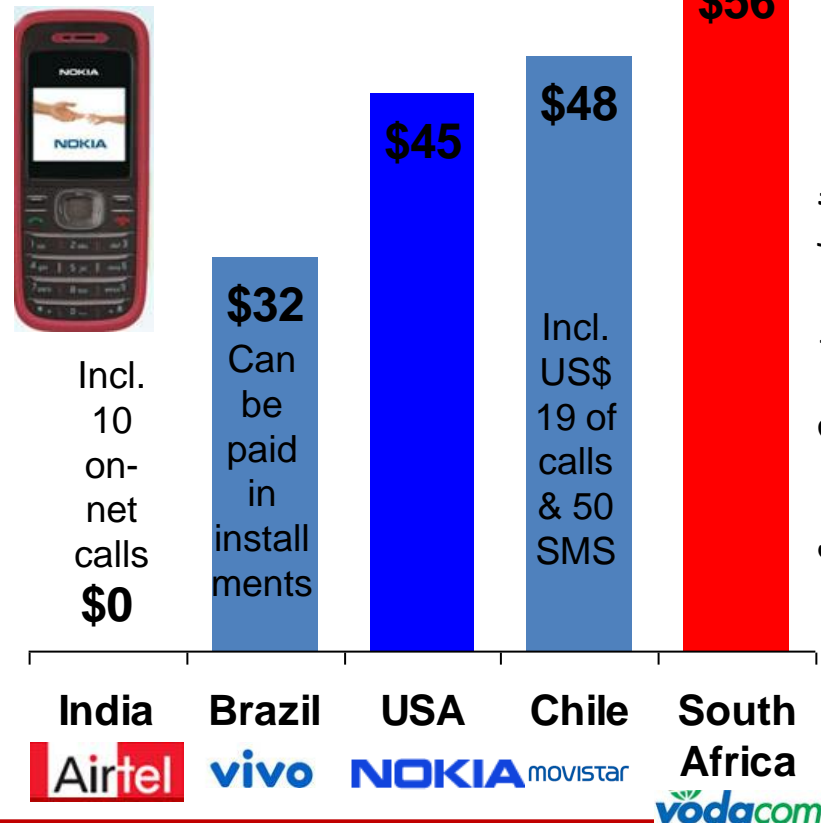
- Although South Africa has the highest mobile penetration among the study countries, this should be treated with caution:
 - South Africa has the highest penetration of pre-paid subscribers with lenient recharge “windows” and likely multiple subscriptions
 - In terms of household penetration, South Africa has a lower rate than other countries for which data is available
- Therefore, except for India, likely that other benchmark countries are equivalent in terms of mobile penetration



Pre-paid handset prices

- “Nokia 1200 is a very basic phone with the feature set from last century...Nokia 1208 is a little better with the addition of 65K color VGA screen”
<http://www.unwiredview.com/2007/05/04/nokia-1200-and-nokia-1208-cheap-phones-to-share/>
- In Malaysia, model not available (only 3G phones!). In Korea, Nokia 1200/1208 not available.
- South Africa has highest pre-paid phone price even though cheaper model (1200). Furthermore, offers no incentives to purchaser unlike other countries (e.g., installment payments, free calls, free SMS).

Nokia 1200/1208 handset prices, US\$, August 2008



Source: Operator web sites.

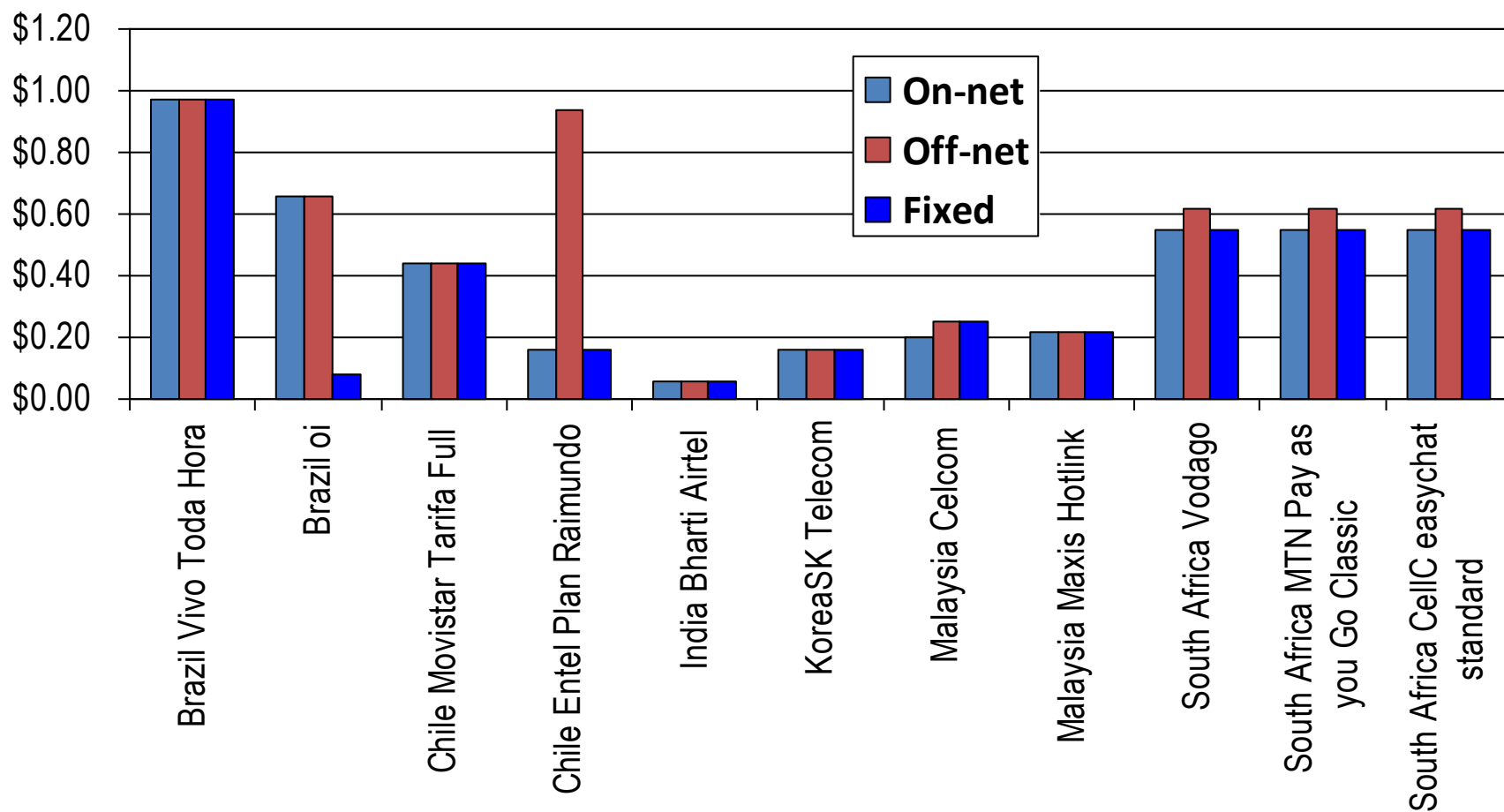


Pre-paid phone prices including taxes. Converted to US\$ using 2007 annual average exchange rate.

India & South Africa refer to 1200; Brazil & Chile refer to 1208.

Prepaid mobile prices

Peak rate, August 2008, PPP



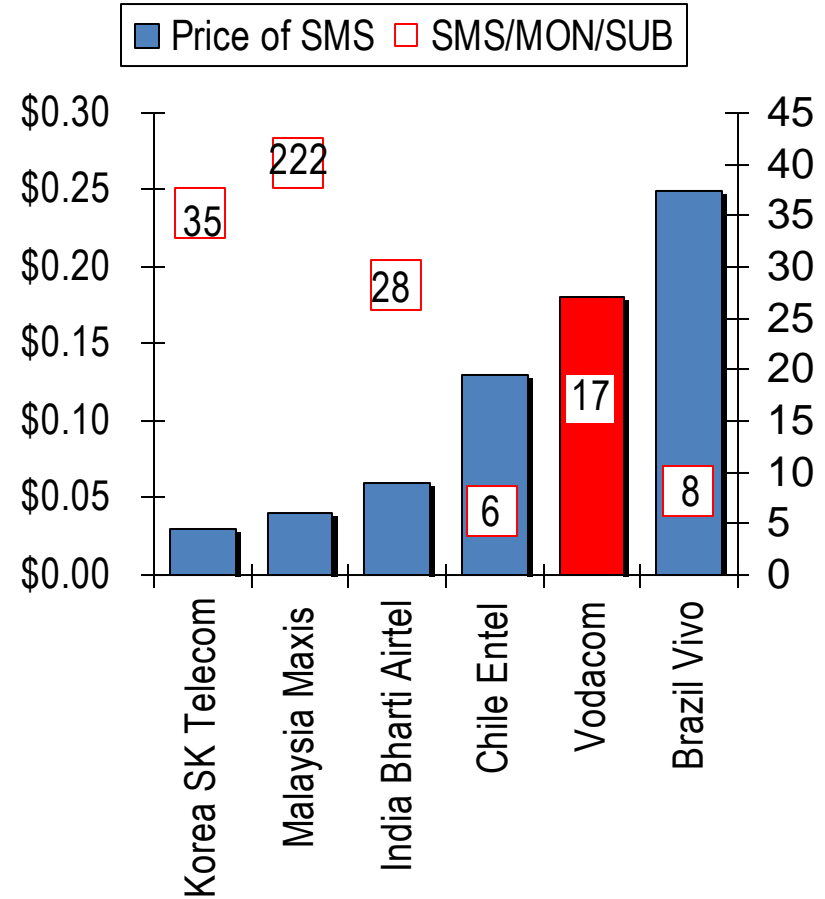
A selection of rates for illustration purposes.
Does not include all plans in each country.



SMS

Price of SMS, PPP, August 2008, number of SMS per subscriber per month refer to 2007

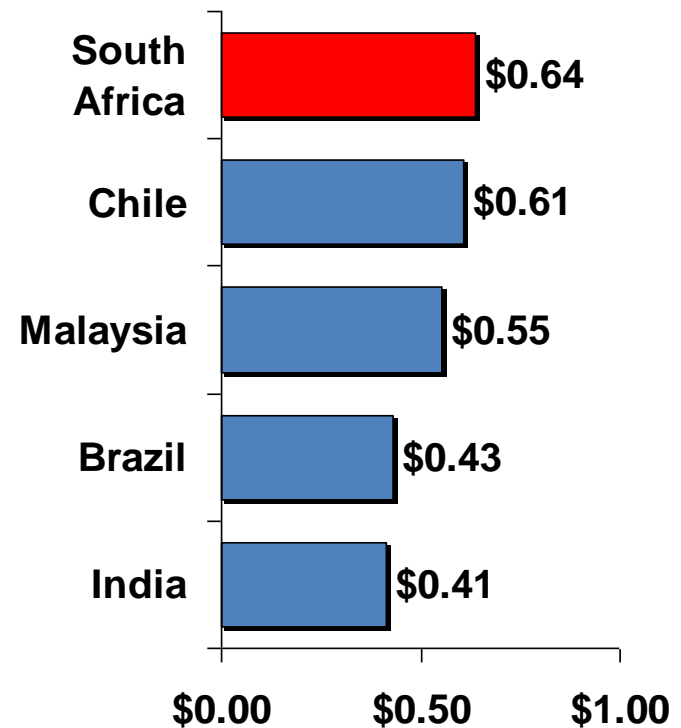
- Second highest SMS prices in South Africa
- Usage is higher in South Africa than Chile or Brazil
- Malaysia has highest usage by far



International call from mobile

- While South Africa has cheapest international calls from fixed line, the situation is reversed with mobile

Price of one minute call to USA from mobile phone, August 2008, PPP

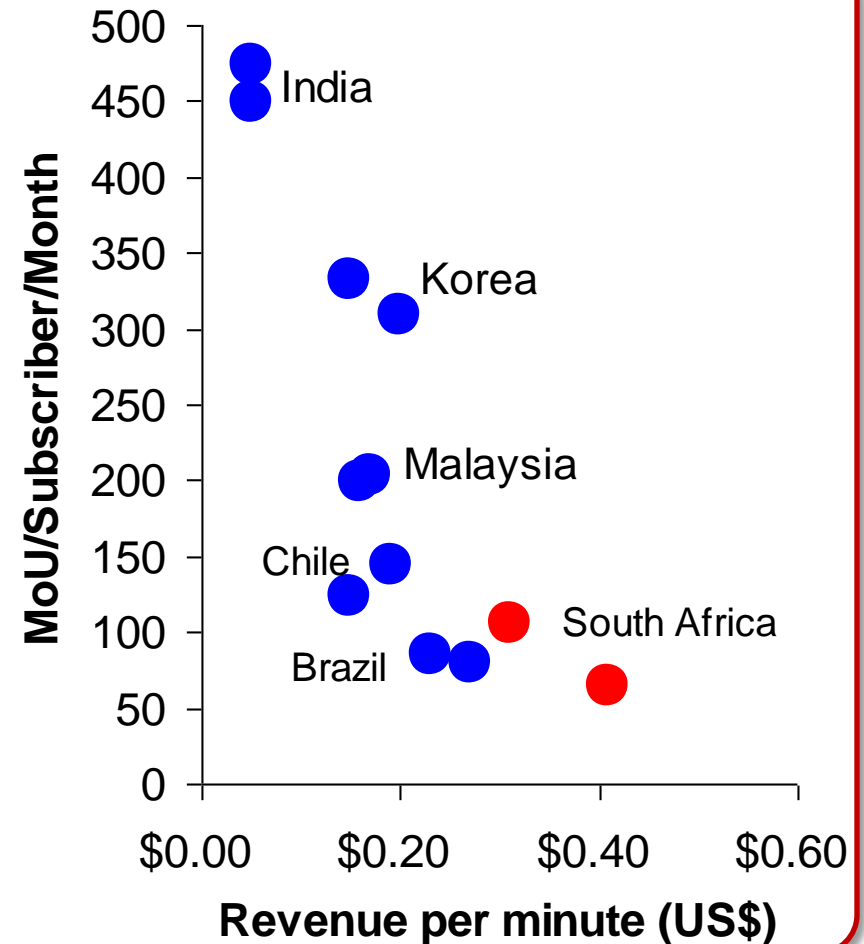


Note: None of the sampled operators has a different off-peak rate.



Minutes of Use (MoU)

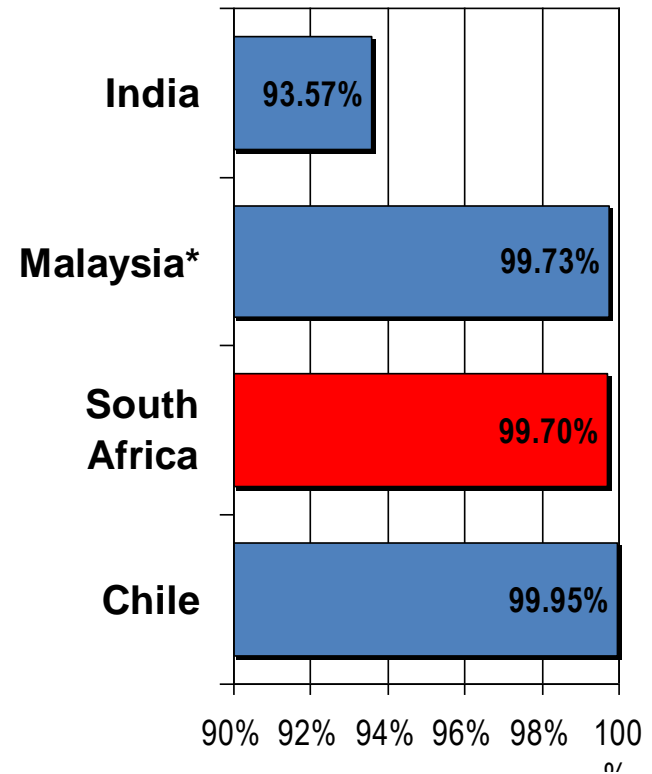
- Mobile usage declines as revenue per minute (ARPU/MoU) goes up
- South African mobile operators have highest revenue per minute of benchmark countries
- South Africans talk less on their mobiles than any of the other peer countries



Mobile quality of service

- Mobile quality fairly similar across countries except for India

Mobile call set-up success rate, 2007

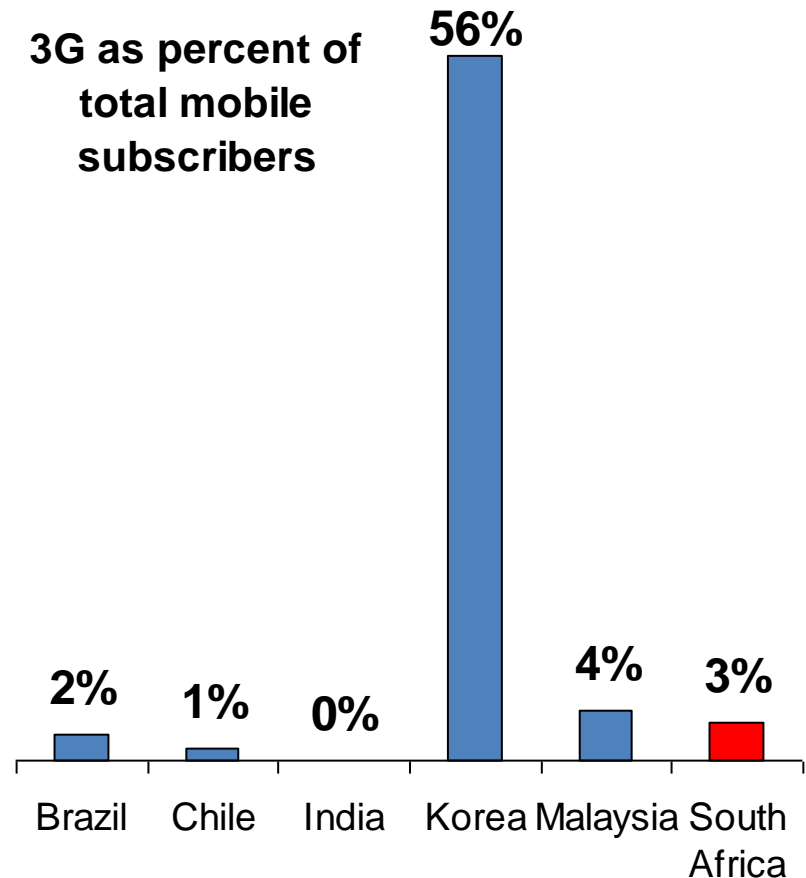


Data refer to largest operator. * 2002.



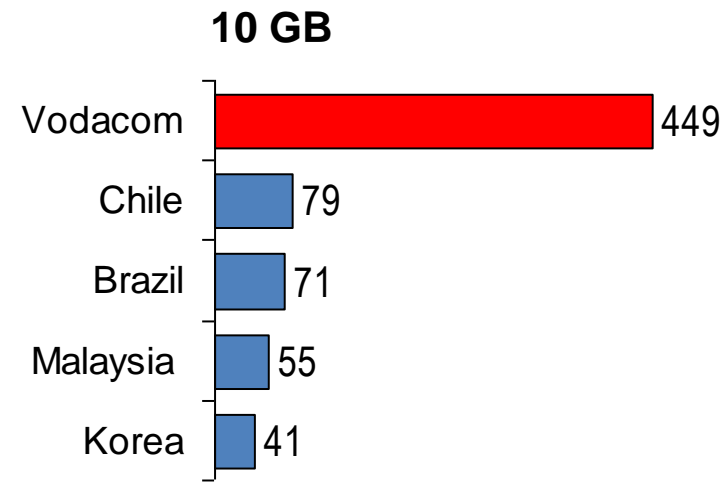
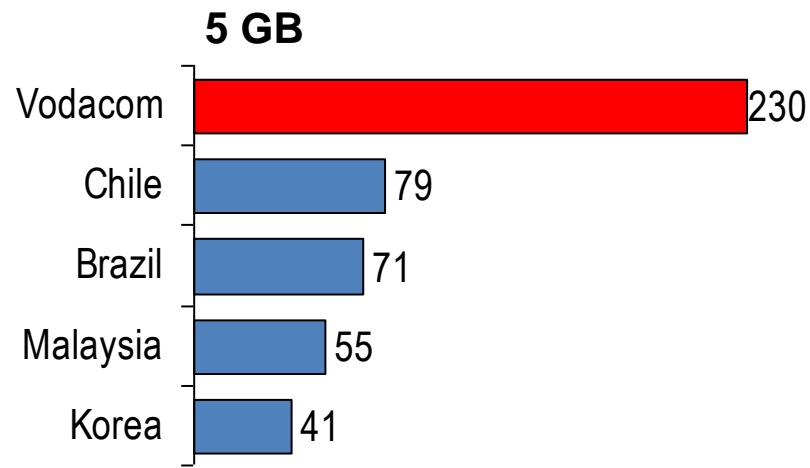
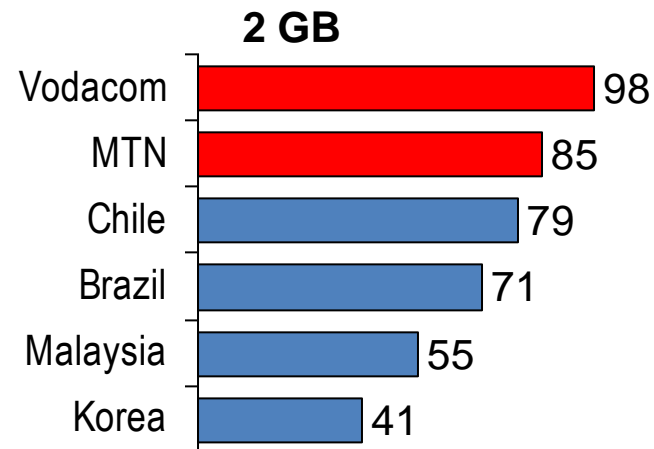
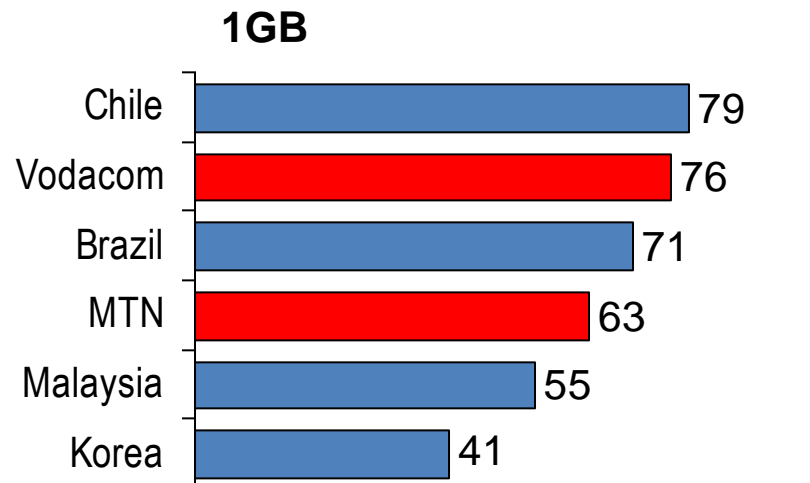
3G mobile subscribers

- All countries except India have launched mobile broadband networks (WCDMA, EVDO or HSDPA)
- Except for Korea, share of 3G subscribers in total mobile users is low
- However, most 3G subscribers are using 3G for fixed-like broadband access (e.g., 400,000 in Brazil)



3G Broadband tariffs

HSDPA networks, PPP, August 2008



Note: India has not launched HSDPA. In Brazil & Chile speed is reduced when reaching 1 & 3 GB volume caps respectively.



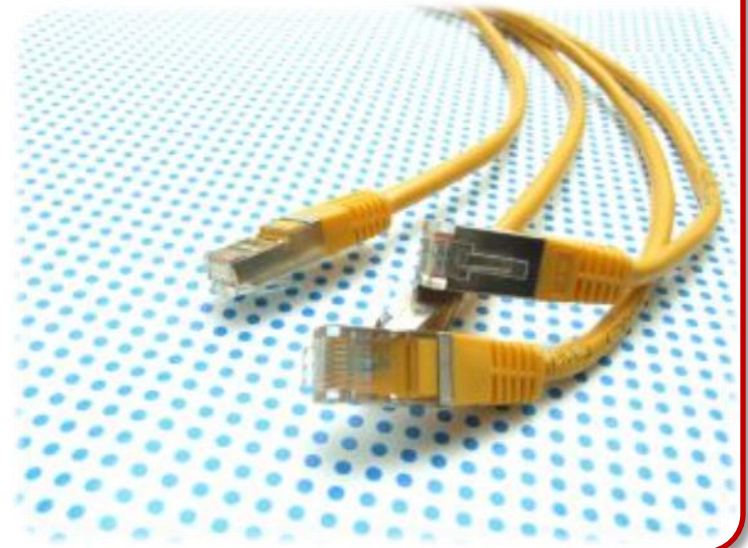
Mobile communications - Summary

- Mobile penetration has grown impressively in South Africa. It has risen from the fourth ranked country among the benchmark nations in 2000 to first in March 2008.
- South Africa top ranked despite relatively high tariffs
- However usage in South Africa is low
- Mobile broadband tariffs for high volumes (>2GB) expensive in South Africa due to lack of uncapped plans which are available in the other benchmark countries



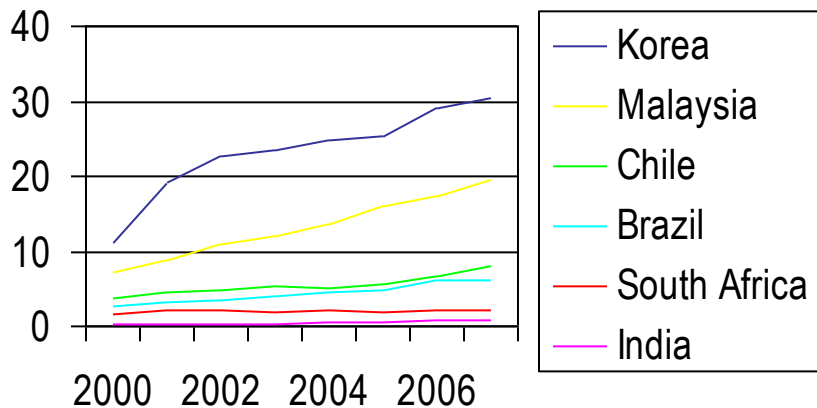
Internet market

- Only Malaysia has less competitive broadband market than South Africa
- In Brazil, Chile, India and Korea there is intra-modal competition among DSL providers and inter-modal competition with cable modem, wireless and 3G providers

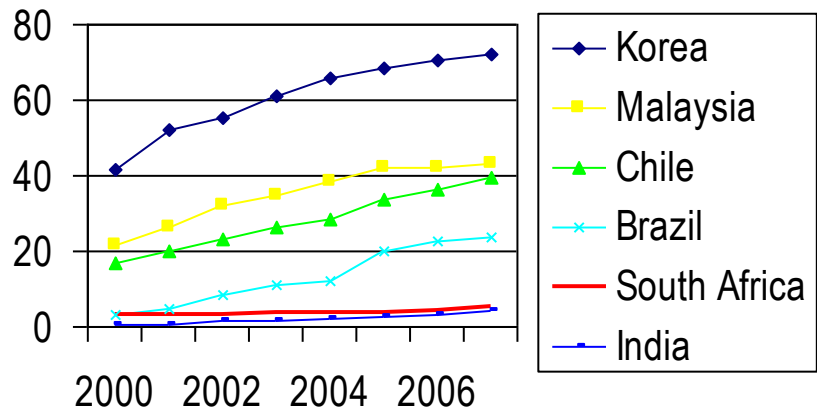


Internet access

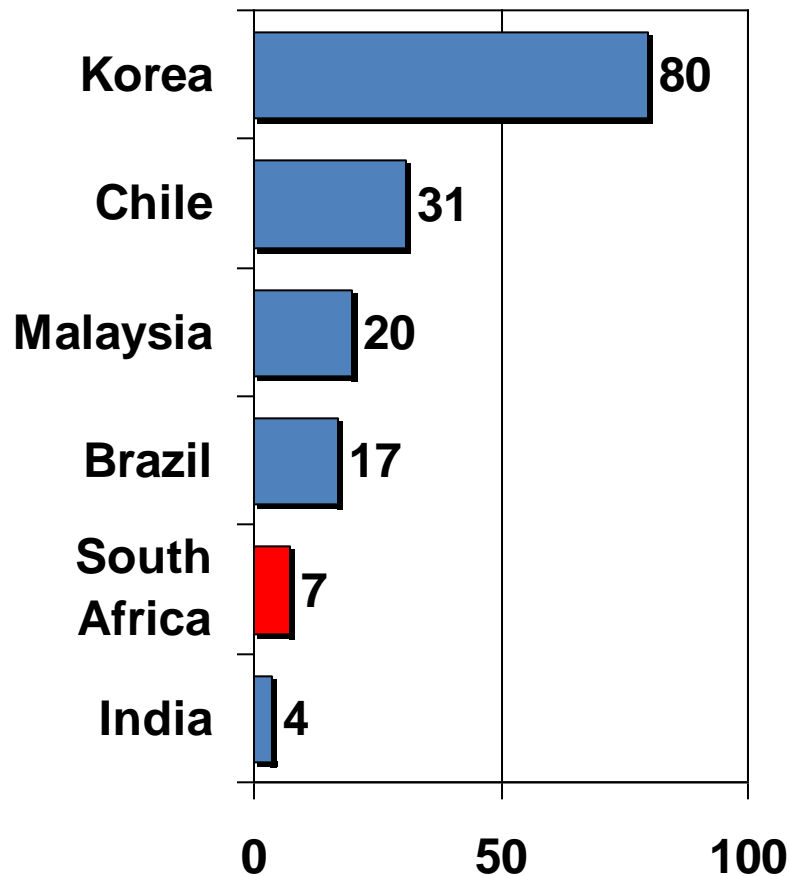
Internet subscribers per 100 people



Internet users per 100 people



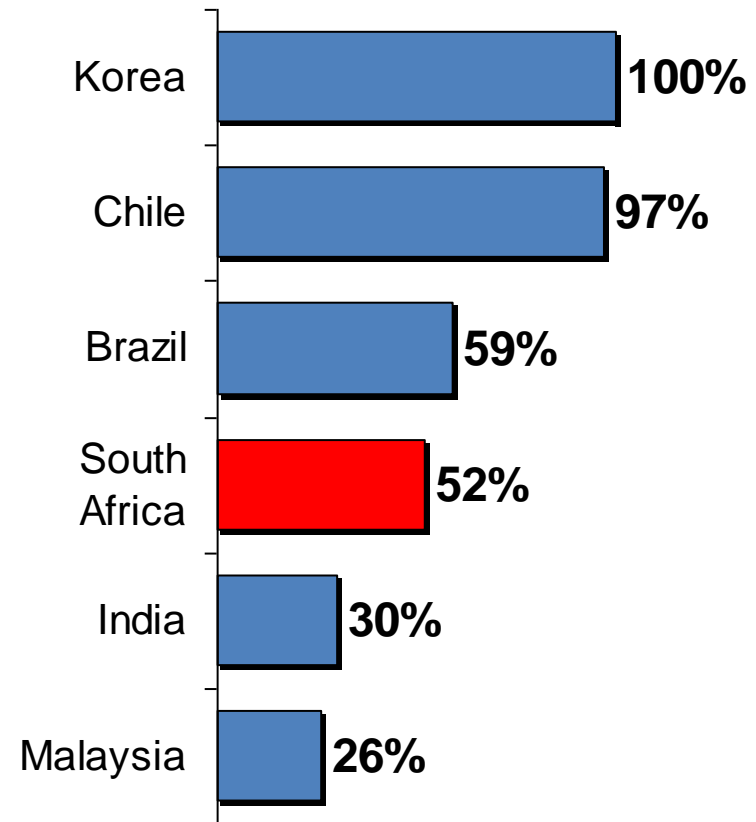
Households with Internet access at home, 2007, %



Distribution of Internet subscribers

- In Chile & Korea, almost all Internet subscribers are now broadband
- In India & Malaysia low dial-up rates discourage broadband adoption

Percentage of Internet subscribers using broadband, 2007



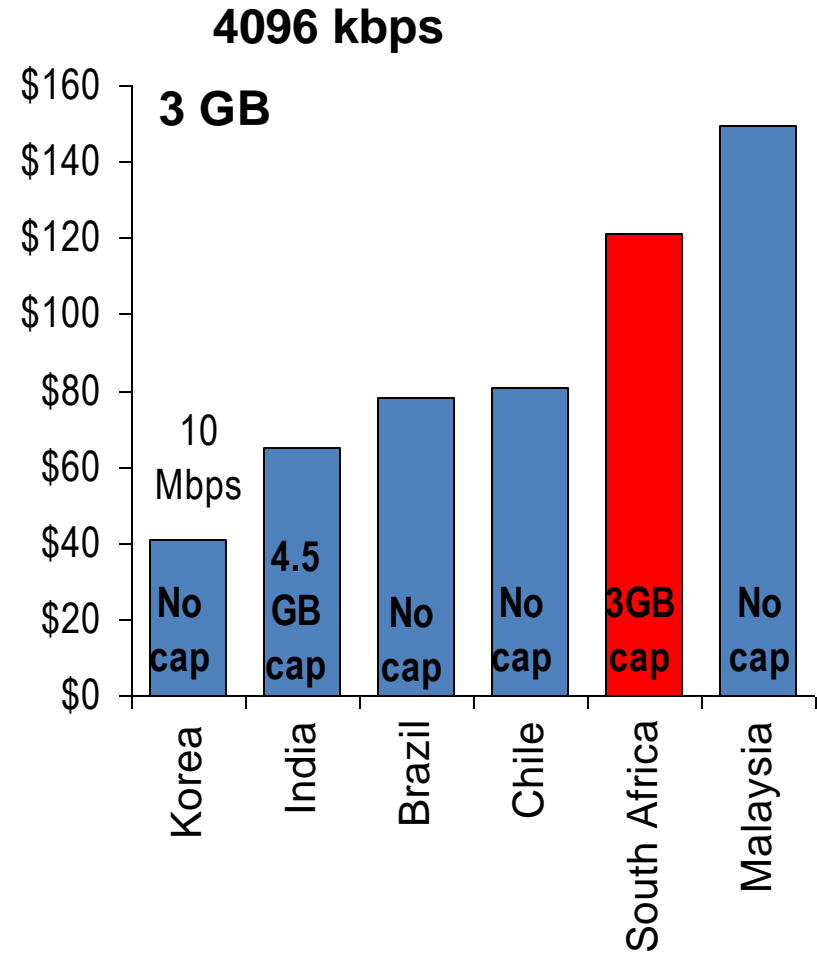
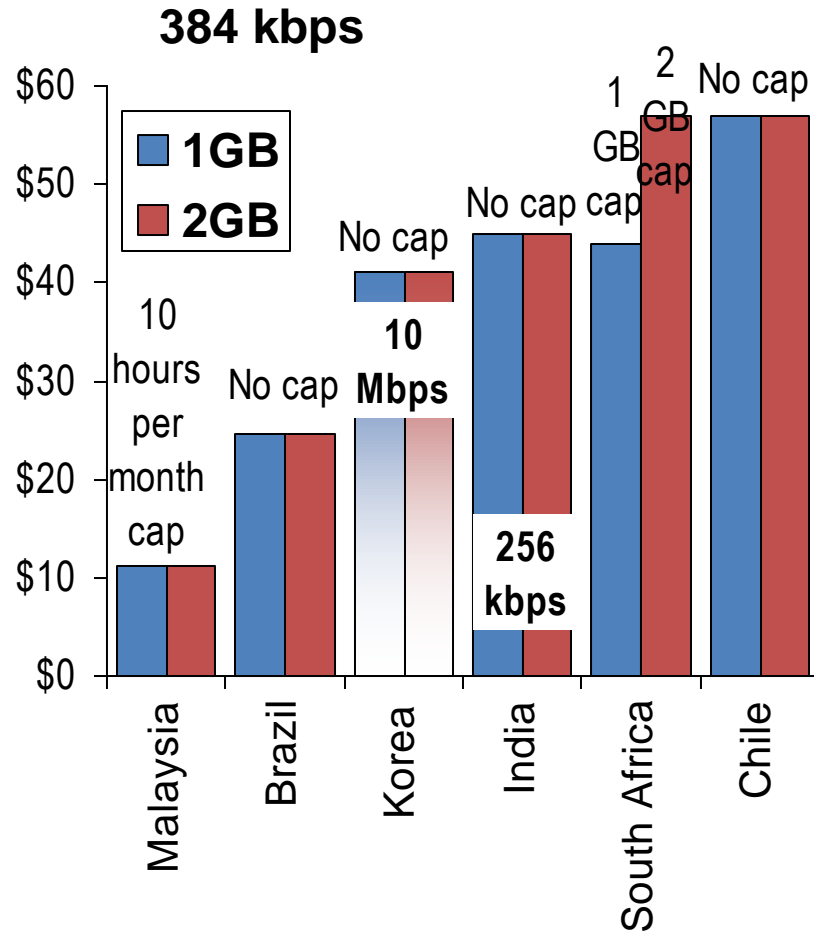
Internet tariffs

- Other countries have variety of plans and different speeds compared to South Africa
- All except South Africa offer unlimited plans
- Benchmark around South Africa speeds & caps
- Includes ISP portion (only relevant for Brazil and South Africa)



DSL Prices

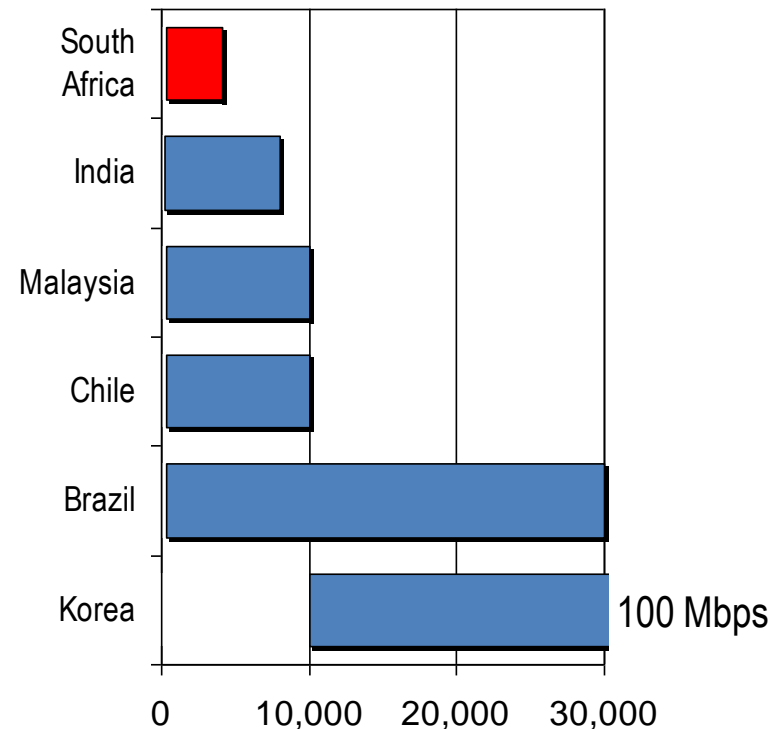
Monthly tariff, August 2008, PPP



Broadband speeds

- All of the countries have maximum broadband speeds faster than South Africa
- Korea offers 100 Mbps fiber optic/LAN connections whereas Brazil offers 30 Mbps
- In contrast, the fastest DSL speed in South Africa is 4 Mbps

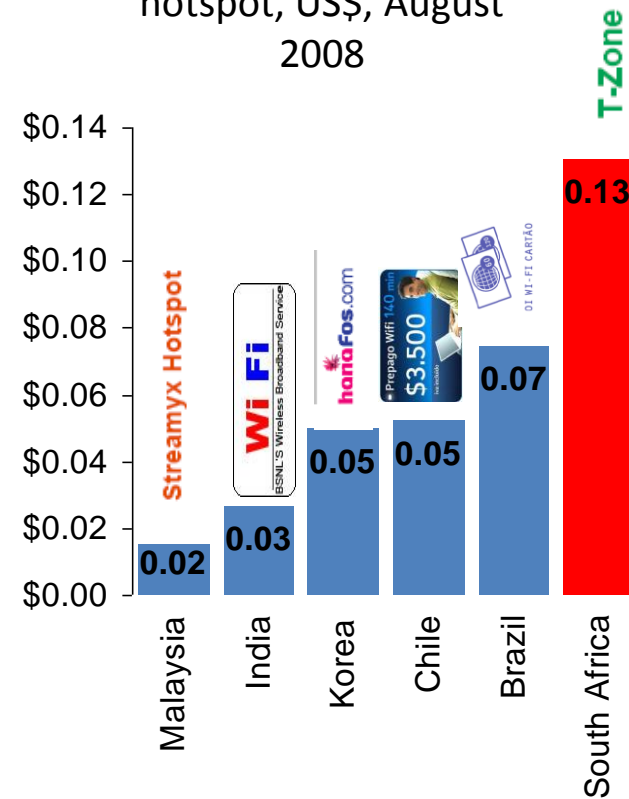
Range of slowest & fastest broadband speeds available, kbps



Wi-Fi hotspot

- All telephone operators have Wi-Fi plans. Some offer prepaid cards or monthly subscriptions
- Ideal for those who do not have Internet access at home
- Proxy for public access

Price per minute Wi-Fi hotspot, US\$, August 2008



Internet summary

- South African tariffs consistently high
- Unlike other countries, no uncapped plans in South Africa
- Level of South African access relatively low and slower growth than other countries



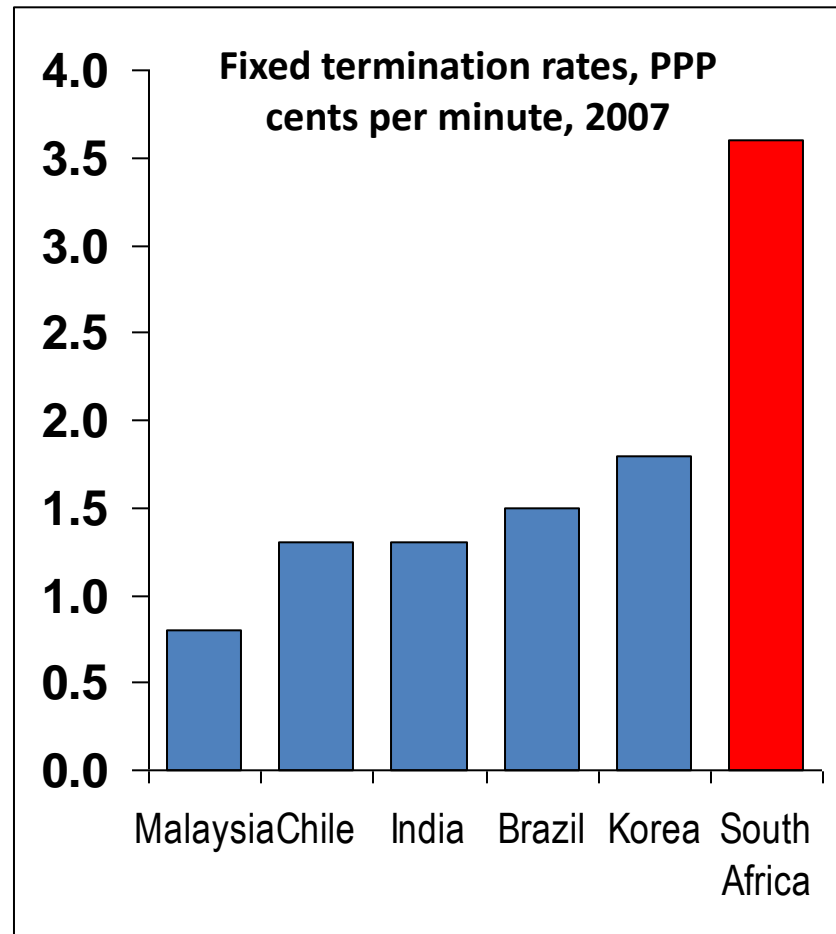


WHOLESALE



Fixed termination

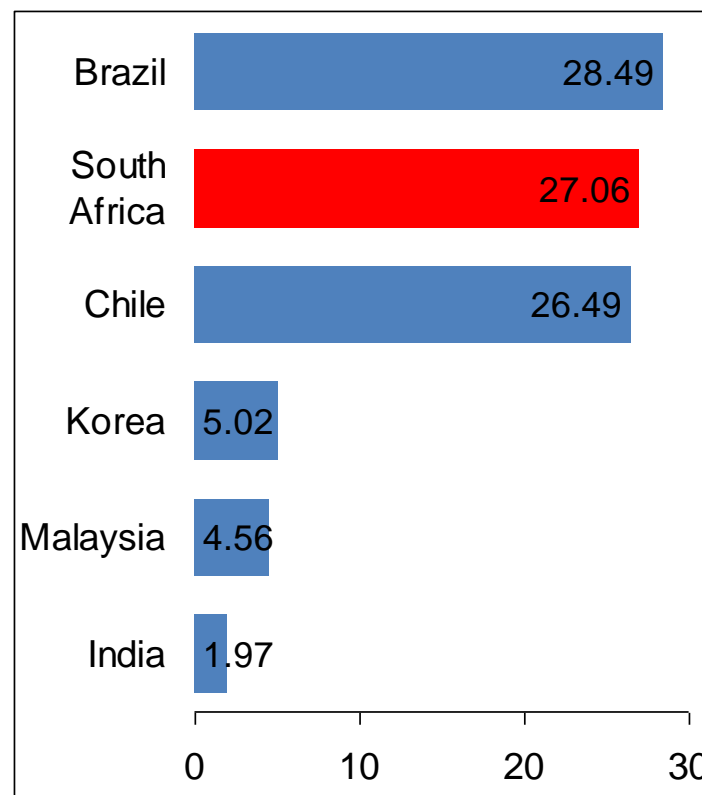
- South Africa has highest fixed termination rates



Mobile termination

- All countries except Brazil and South Africa regulate mobile termination rates
- Brazil & South Africa have the highest rates

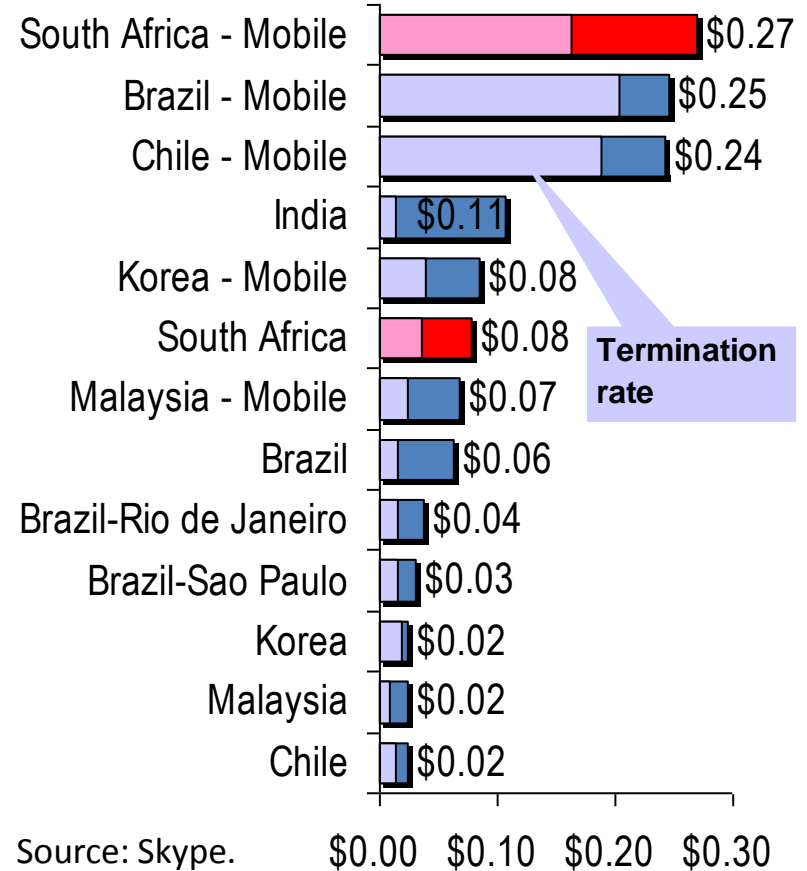
Mobile termination rate, PPP cents per minute, 2007



International incoming calls

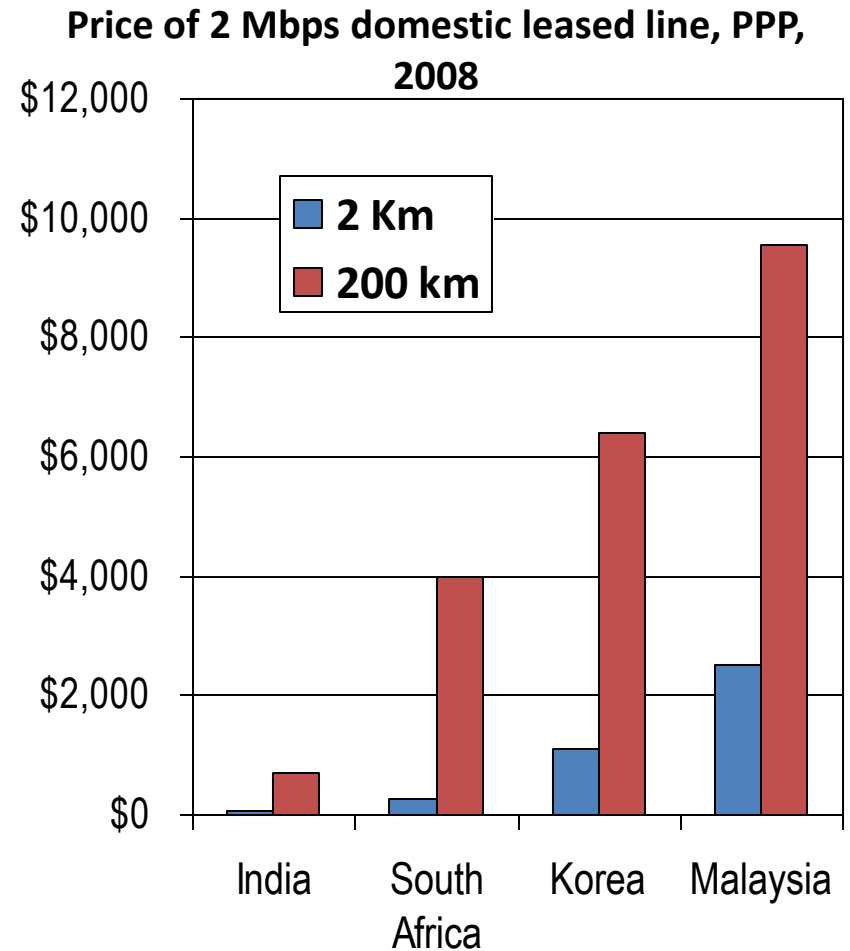
- International incoming calls to fixed lines and mobile phones align fairly closely with termination rates
- It costs about 8 US cents to call a fixed line in South Africa using Skype
- It costs over 3 times more to call a South African mobile phone from abroad using Skype

International calls to benchmark countries using Skype, US\$ per minute including VAT, August 2008



Domestic leased lines

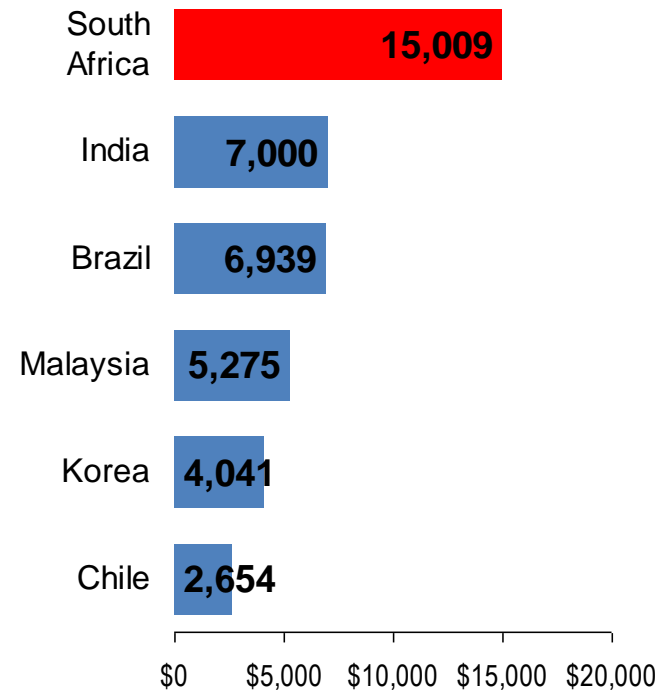
- India has the cheapest domestic leased line prices
- South Africa compares favorably compared to Korea and Malaysia



International leased lines

- South Africa has the highest price for an international 2 Mbps leased line to the USA
- It is more than twice as much as the next most expensive country

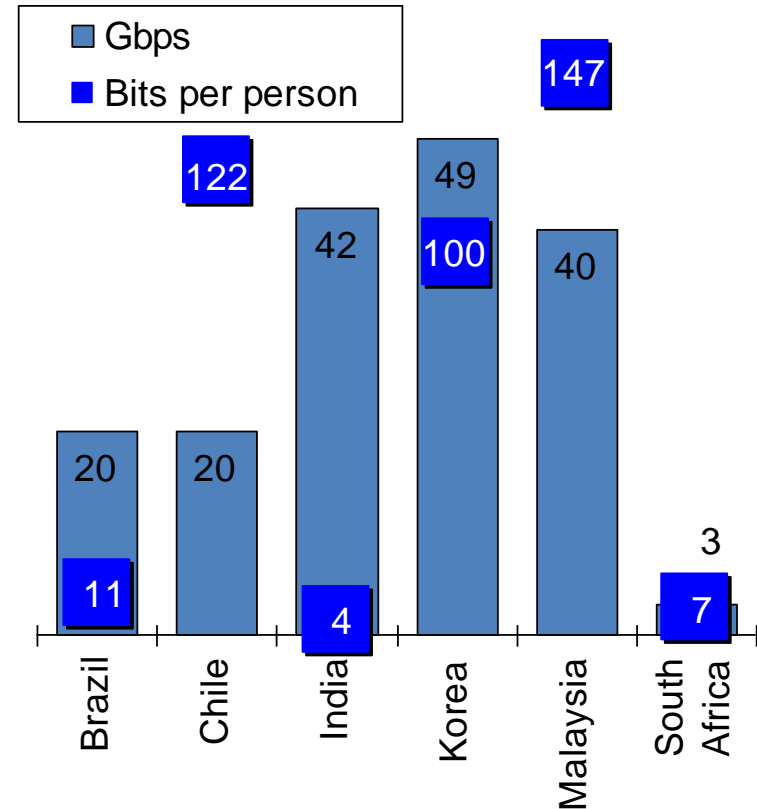
Price of 2 Mbps international leased line to USA, half-circuit, PPP, 2008



International bandwidth

- South Africa lags other countries in international Internet bandwidth.
- The relative shortage of bandwidth in South Africa partly explains higher broadband and leased line prices

International Internet bandwidth, Gbps, 2007



Note: Figures for Brazil and Chile refer to Embratel and Entel only. Figure for South Africa refers to IS, Verizon and Telkom.



Wholesale summary

- South African fixed and mobile termination rates high
- International leased lines expensive
- Very low international bandwidth compared to benchmark countries



Conclusions

- South Africa more often than not aligns with high cost countries (Brazil & Chile) in tariff comparisons
- South Africa expensive for fixed local access but inexpensive for fixed domestic and international long distance
- South Africa and Malaysia only two countries with less fixed lines today than in 2000
- South Africa has most concentrated mobile market
- South Africa has relatively high mobile penetration
- Mobile tariffs expensive in South Africa
- South Africa has lowest mobile usage



Conclusions (II)

- South Africa has low Internet penetration and market has grown slowly compared to other benchmark countries
- Lack of uncapped broadband plans in South Africa compared to other benchmark countries
- Mobile and DSL broadband expensive at high usage (>3GB)
- Wholesale fixed and mobile termination expensive in South Africa
- South Africa compares favorably for domestic leased lines
- International private leased lines (2Mbps) expensive in South Africa
- Dearth of international bandwidth in South Africa

