
ICT Policy and Regulatory Frameworks: the status and challenges of SADC countries.
Alison Gillwald
AKPN Internet Governance
12 October 2009, Cape Town
researchICTafrica.net

Research ICT Africa!

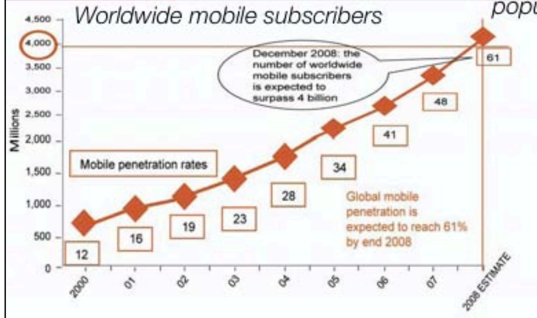
- Network of researchers conducting ICT policy and regulatory research in 20 African countries across the continent in the absence of data and analysis required for evidence based policy

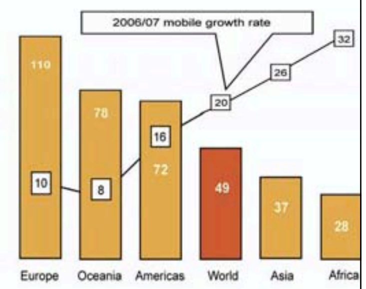
researchICTafrica.net

Towards evidence based policy

- Response to absence of current indicators and analysis in Africa.
- Policy research based on series of supply and demand side research undertaken by the network which is triangulated with a telecommunications regulatory environment perception survey.
- Series of policy papers that provide decision-makers with an assessment of policy performance, provide

Mobile sector, worldwide and by region





Source: ITU World Telecommunication/ICT Indicators Database.

researchICTafrica.net

WEF Global Competitiveness Report 2009 - 2010

			Tech read		Availability of latest tech	firm-level tech absorption	laws relating to ICT	FDI and technology transfer	Mobile telephone subscriptions	internet users	personal computers	broadband internet subscribers
	Rank	Score	Rank	Score								
South Africa	45	4.3	65	3.7	37	33	31	45	64	98	69	84
Mauritius	57	4.2	57	3.8	52	62	52	37	77	57	48	53
Botswana	66	4.1	92	3.3	69	73	94	62	80	112	83	98
Namibia	74	4	86	3.3	45	63	98	44	101	110	40	121
Tanzania	100	3.6	120	2.6	111	112	96	84	115	124	115	127
Leostho	107	3.5	116	2.6	119	124	113	121	119	114	126	n/a
Zambia	112	3.5	109	2.7	97	103	87	76	117	108	112	111
Malawi	119	3.4	126	2.4	112	118	106	99	127	118	127	122
Madagascar	121	3.4	114	2.7	86	76	114	87	123	121	123	114
Mozambique	129	3.2	99	2.9	104	89	103	41	124	120	109	n/a
Zimbabwe	132	2.8	130	2.3	132	123	119	132	128	89	76	102

researchICTafrica.net

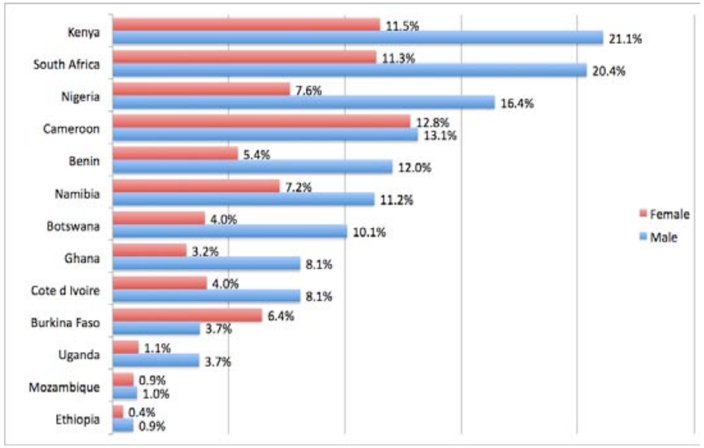
WEF Global Technology Report 2008 - 2009

	Rank	Environment				Readiness				Usage			
		total	market	political and regulatory	infrastructure	total	individual	business	government	total	individual	business	government
Mauritius	51	46	29	38	79	51	50	59	46	62	60	64	59
South Africa	52	39	33	26	69	56	80	36	63	63	78	46	61
Botswana	77	58	70	47	77	78	67	96	70	89	89	93	72
Namibia	92	59	73	32	101	104	101	98	121	102	96	84	124
Zambia	102	83	76	63	110	108	107	102	115	109	116	100	104
Malawi	110	95	94	73	111	109	119	95	93	125	129	119	114
Madagascar	112	115	99	111	122	113	118	114	79	107	126	103	89
Leostho	118	100	100	110	89	119	114	126	113	121	118	117	115
Tanzania	119	111	107	81	123	118	121	113	107	116	122	105	112
Mozambique	124	118	116	99	128	127	129	124	112	104	125	110	82
Zimbabwe	132	130	132	125	102	132	130	119	134	134	113	134	134

Fixed line and mobile teledensity

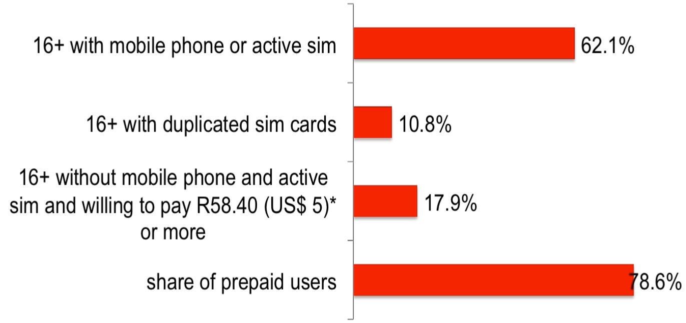
Source: ITU 2009 Telecommunications Development Report

Gender disaggregations - mobile



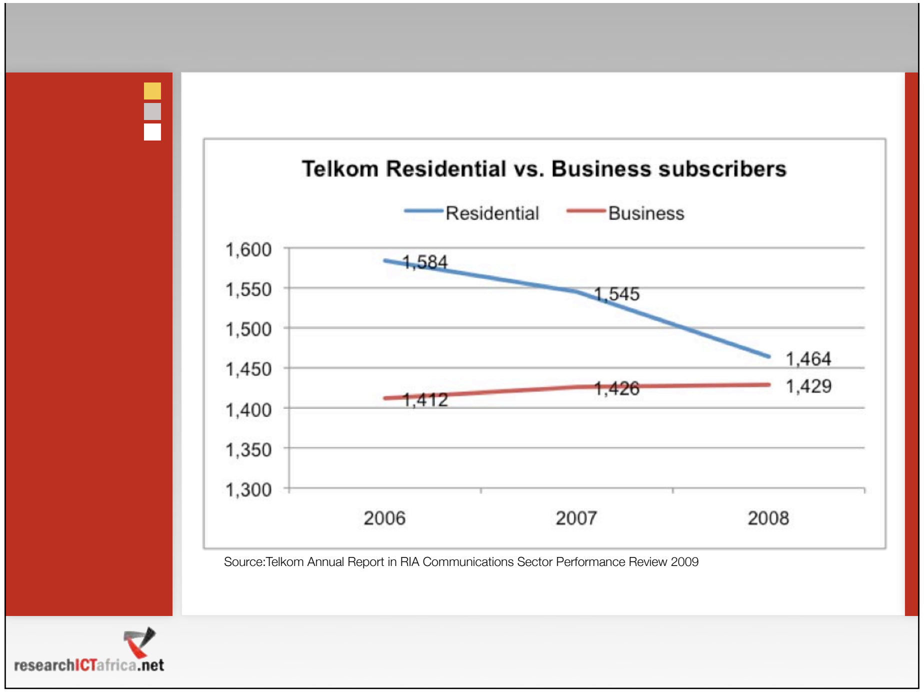
researchICTafrica.net

Mobile phone users



Average monthly WTP for mobile expenditure of non-users that would be interested in getting a mobile phone - R 46.70 (US$ 4.40)*

* At Dec 2007 prices and exchange rates



The Herfindahl Hirschman Index is the most common measure of market concentration. The market concentration in a particular country is made by adding up the squared values of all the players in the market's market share, e.g.:

Market concentration = (market share of player 1)^2 + (market share of player 2)^2 + (market share of player 3)^2 + (market share of player 3)^2 etc....

The Index can range from 0 to 1 or 0 to 10 000, depending on whether the market shares are in percentage (E.G. 25,35,40) or decimal values e.g.(e.g. 0.25;0.35;0.4)

The HHI values are translated to a degree of competitiveness.

Nearly Zero - The theoretical model of perfect competition

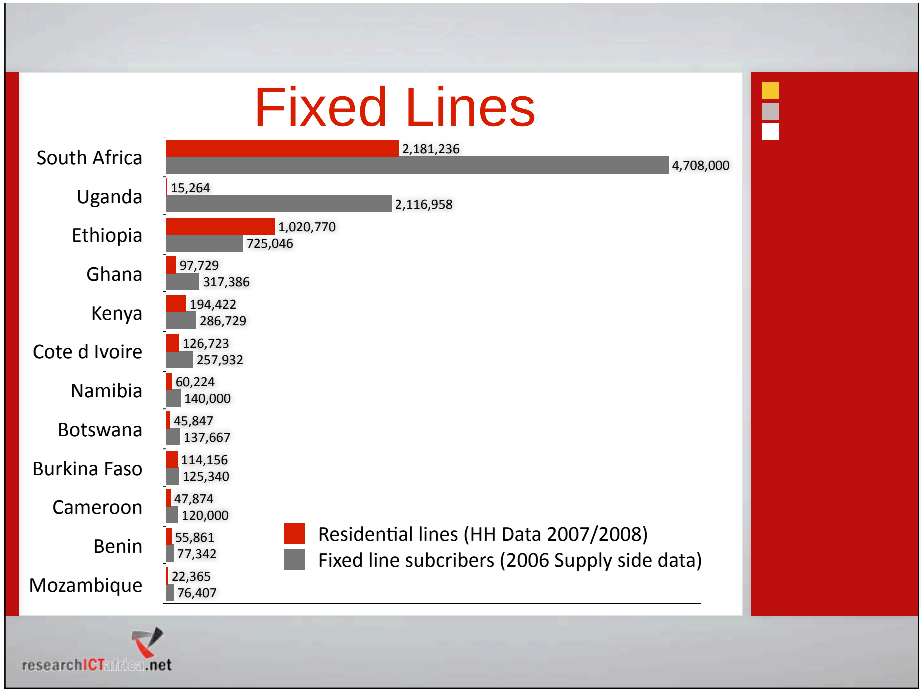
Below 100 (or 0.01) - Highly competitive

Less than 1 000 (or 0.1) - unconcentrated market

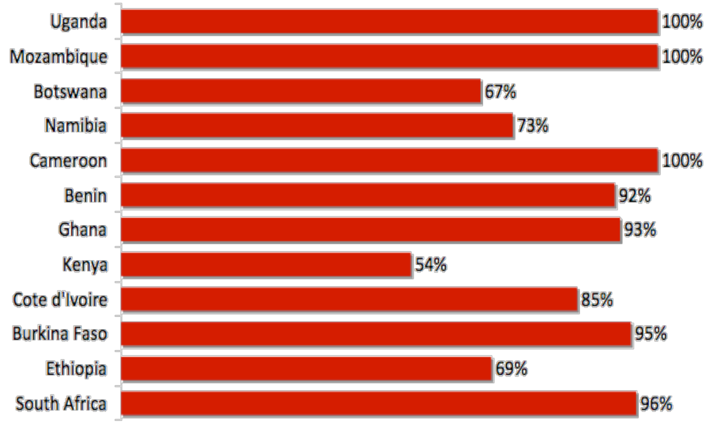
1 000 - 1 800 (or 01. - 0.18(- moderately concentrated

above 1 800 (or 1.8) highly concentrated market

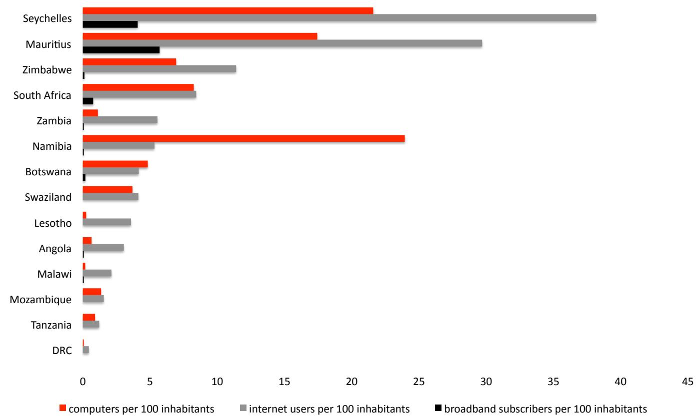
10 000 (1) - Only one player, total monopoly


Fixed Lines
South Africa
2,181,236
4,708,000
Uganda
15,264
2,116,958
Ethiopia
1,020,770
725,046
Ghana
97,729
317,386
Kenya
194,422
286,729
Cote d Ivoire
126,723
257,932
Namibia
60,224
140,000
Botswana
45,847
137,667
Burkina Faso
114,156
125,340
Cameroon
47,874
120,000
Benin
55,861
77,342
Mozambique
22,365
76,407
Residential lines (HH Data 2007/2008)
Fixed line subcribers (2006 Supply side data)
researchICTafrica.net

Urban share of residential fixed lines



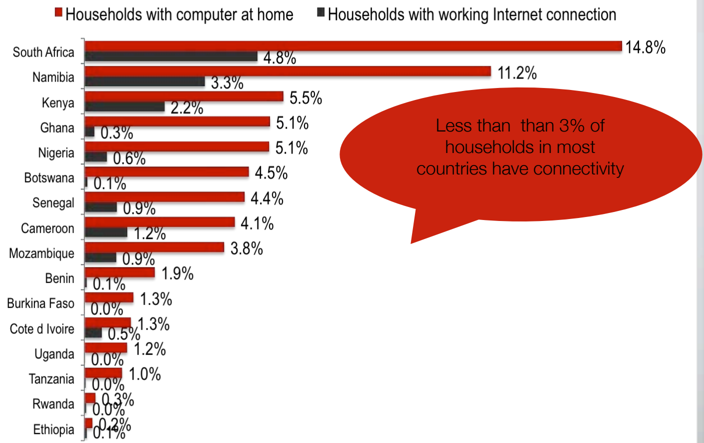
SADC Computer and Internet access and usage



Source: ITU 2009 Telecommunications Development Report

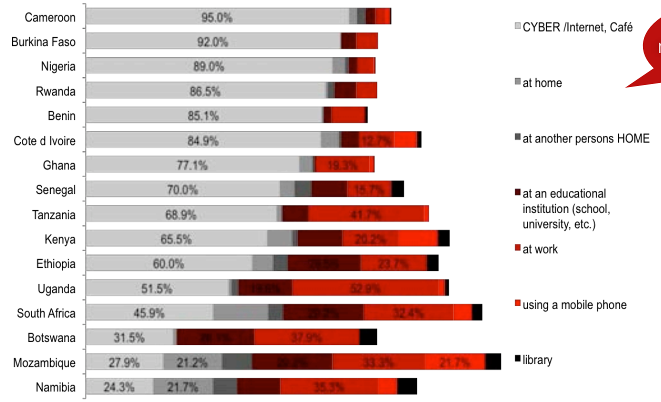
researchICTafrica.net

Home computer & connection

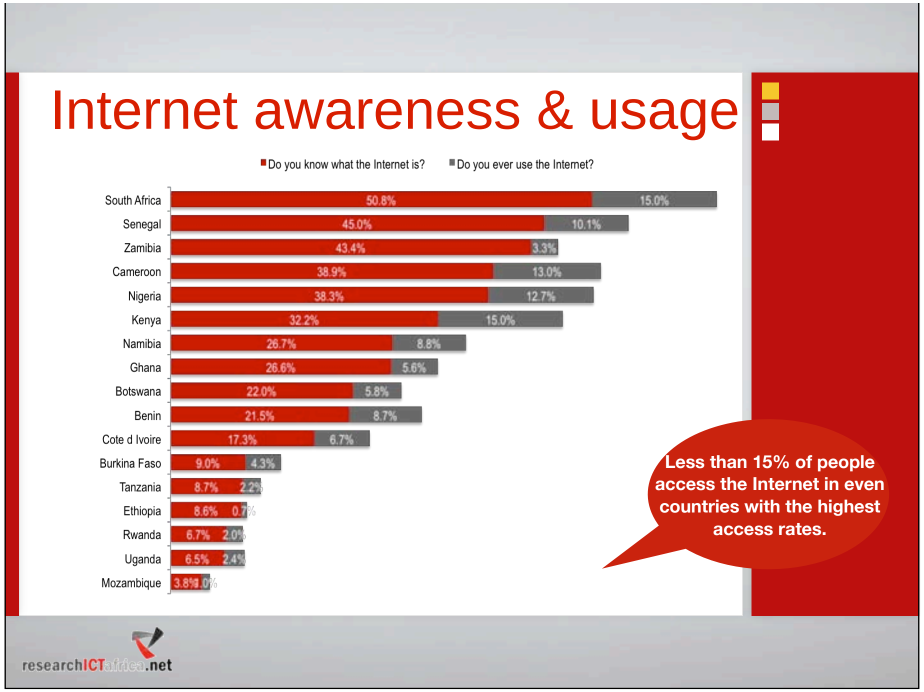


researchICTafrica.net

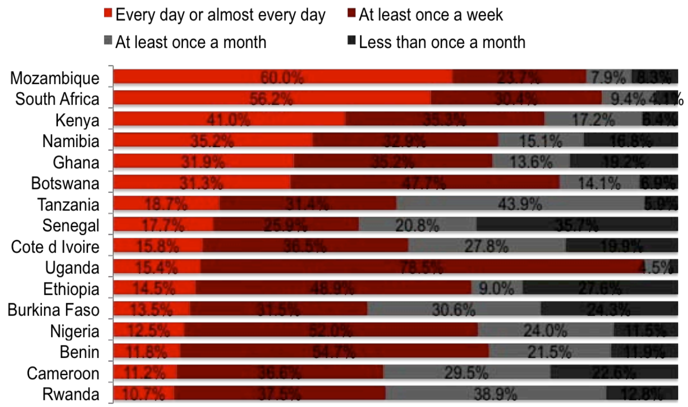
Points of internet access



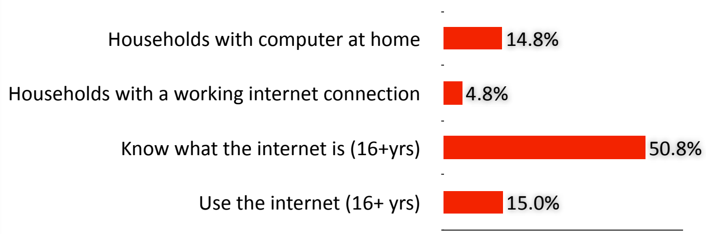
No critical mass, no network efffects


Internet awareness & usage
Do you know what the Internet is?
Do you ever use the Internet?
South Africa 50.8% 15.0%
Senegal 45.0% 10.1%
Zambia 43.4% 3.3%
Cameroon 38.9% 13.0%
Nigeria 38.3% 12.7%
Kenya 32.2% 15.0%
Namibia 26.7% 8.8%
Ghana 26.6% 5.6%
Botswana 22.0% 5.8%
Benin 21.5% 8.7%
Cote d Ivoire 17.3% 6.7%
Burkina Faso 9.0% 4.3%
Tanzania 8.7% 2.2%
Ethiopia 8.6% 0.7%
Rwanda 6.7% 2.0%
Uganda 6.5% 2.4%
Mozambique 3.8%
Less than 15% of people access the Internet in even countries with the highest access rates.
researchICTafrica.net

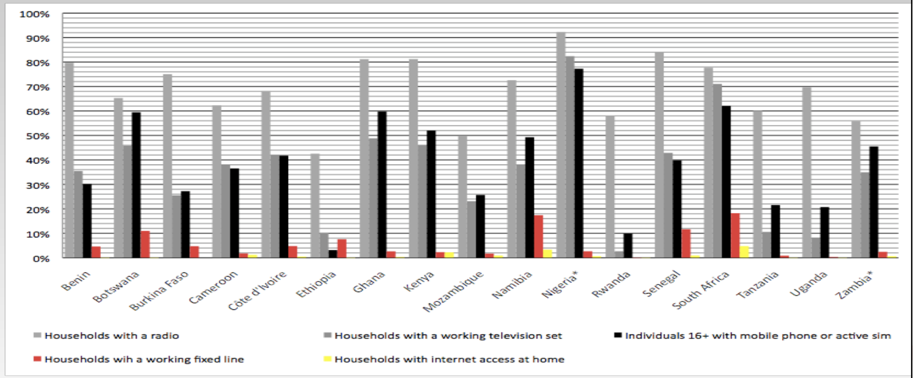
Internet usage and frequency



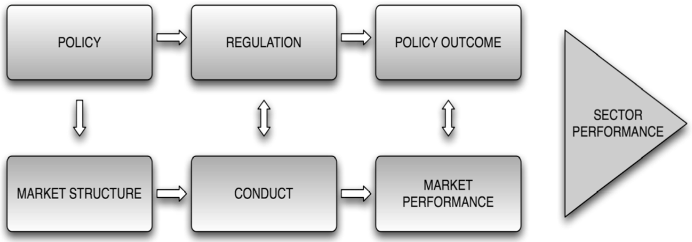
Internet access, usage and familiarity in SA



Household communications ownership



Sector performance as policy outcomes



Market structure/Conduct

- Despite horizontal licensing regime, operators remain vertically integrated
- Anticompetitive incentives
- Requires constant adjustment of behaviour by regulator

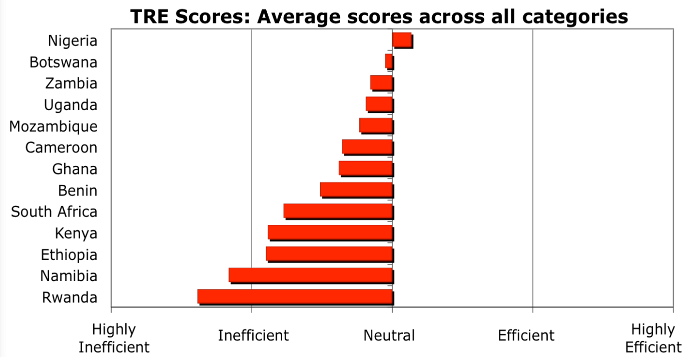
Policy/Law

- No integrated policy
- Market structure constraints
- Constraints on low-cost innovation
- Extension/continued state state ownership and conflicts of interest
- Institutional arrangements unclear - Not always clear delineation of policy making, regulatory and operational powers

Regulation

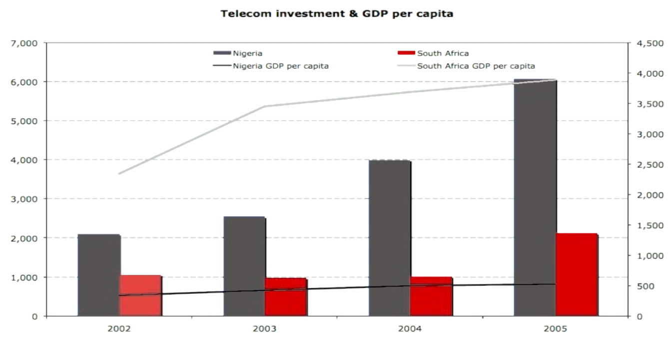
- Resources intensive access regulation
- Human capabilities and institutional capacity
- Independence/accountability
- Onerous timespans/ interested outcomes
- Delays in critical licensing and regulation

Telecommunication Regulatory Environment 2006



researchICTafrica.net

Comparative FDI in SA & Nigeria



researchICTafrica.net

Market performance as policy outcomes

- Inefficient and expensive
- Lack of access to full range of service
- High cost of services
- High input cost to business
- Not globally competitive

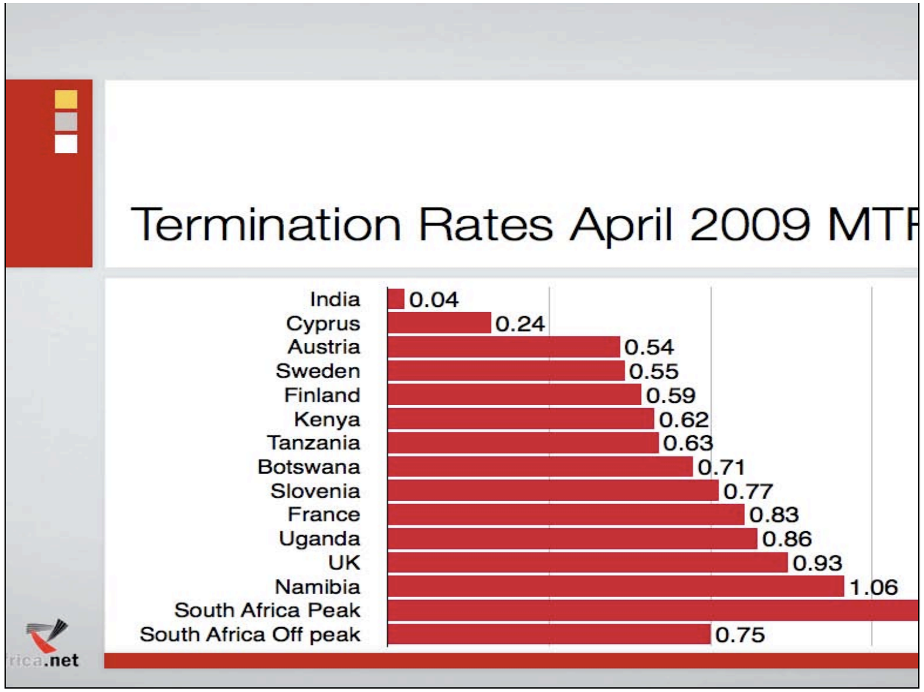
researchICTafrica.net

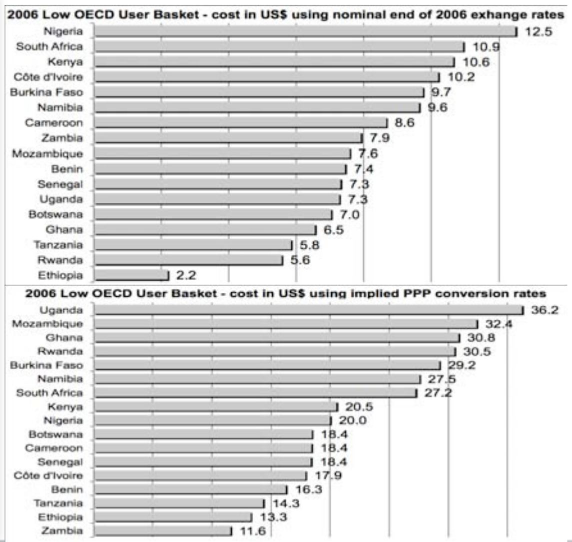
Market performance/policy outcomes

- Access to limited range of services at high cost
- Asymmetries of information
- Government chooses winners and losers
- Constraints on innovation

Special role of Parliament

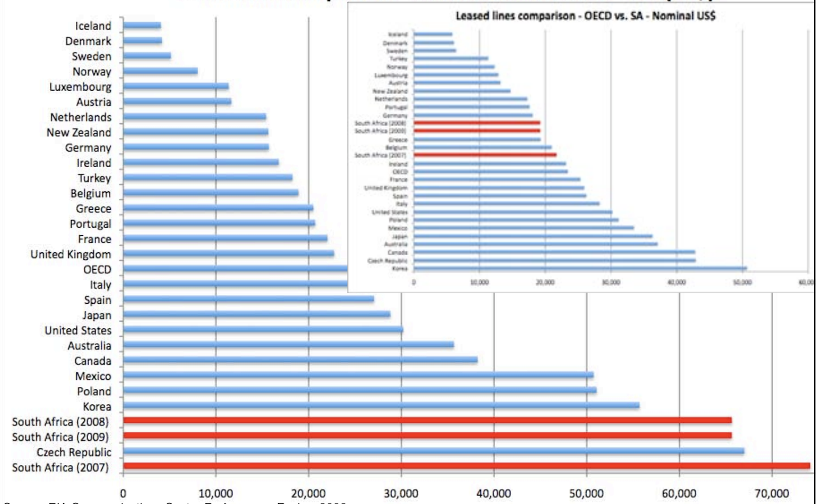
- ensuring independence and accountability of sector regulator - though appointment process, oversight of implementation against financial budgeting, safeguard from 'regulatory capture'.


Termination Rates April 2009 MTR
India 0.04
Cyprus 0.24
Austria 0.54
Sweden 0.55
Finland 0.59
Kenya 0.62
Tanzania 0.63
Botswana 0.71
Slovenia 0.77
France 0.83
Uganda 0.86
UK 0.93
Namibia 1.06
South Africa Peak
South Africa Off peak 0.75
.net



Supply side - mobile pricing

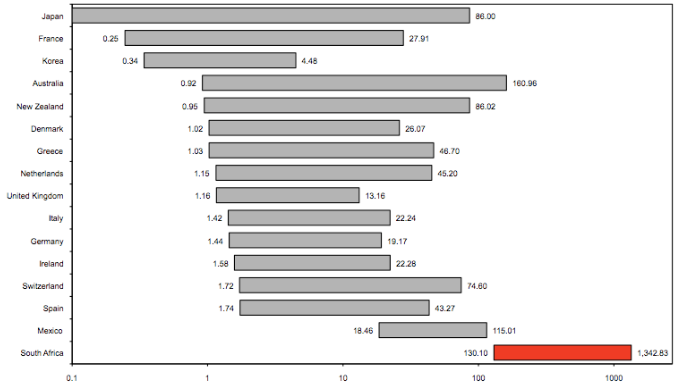
Leased line comparison - South Africa vs. OECD - PPP(US$)



Source: RIA Communications Sector Performance Review 2009

researchICTafrica.net

Range of OECD broadband (Sep 2008) and SA ADSL prices (Aug 2009) per megabits per second of advertised speed, in USD PPP

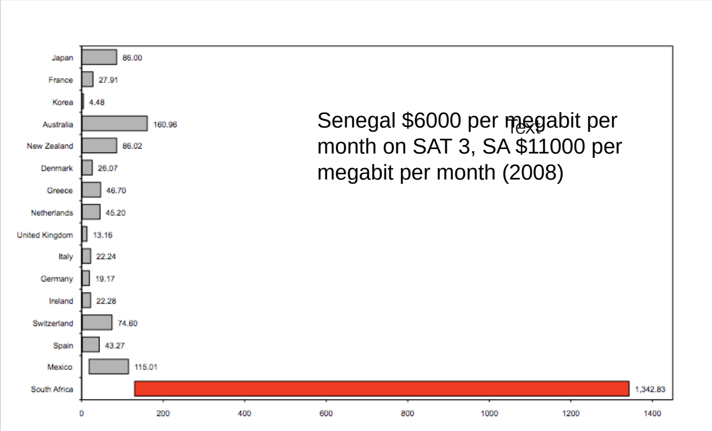


US$ per megabit, logarithmic scale

Data from OECD Communications Outlook, SA pricing data from Hellkom.co.za

Source: RIA Communications Sector Performance Review 2009

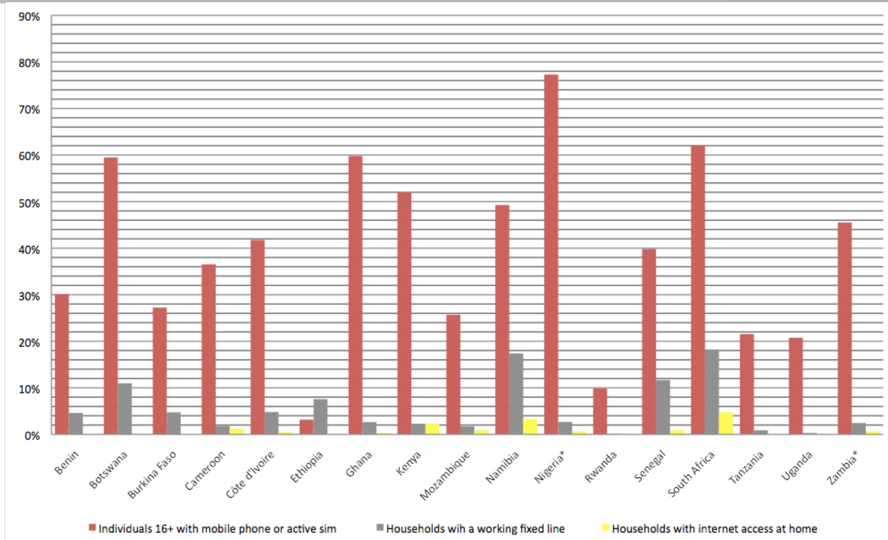
Range of OECD broadband (Sep 2008) and SA ADSL prices (Aug 2009) per megabits per second of advertised speed, in USD PPP



US$ per megabit

Source: OECD Communications Outlook, SA pricing data from Hellkom.co.za

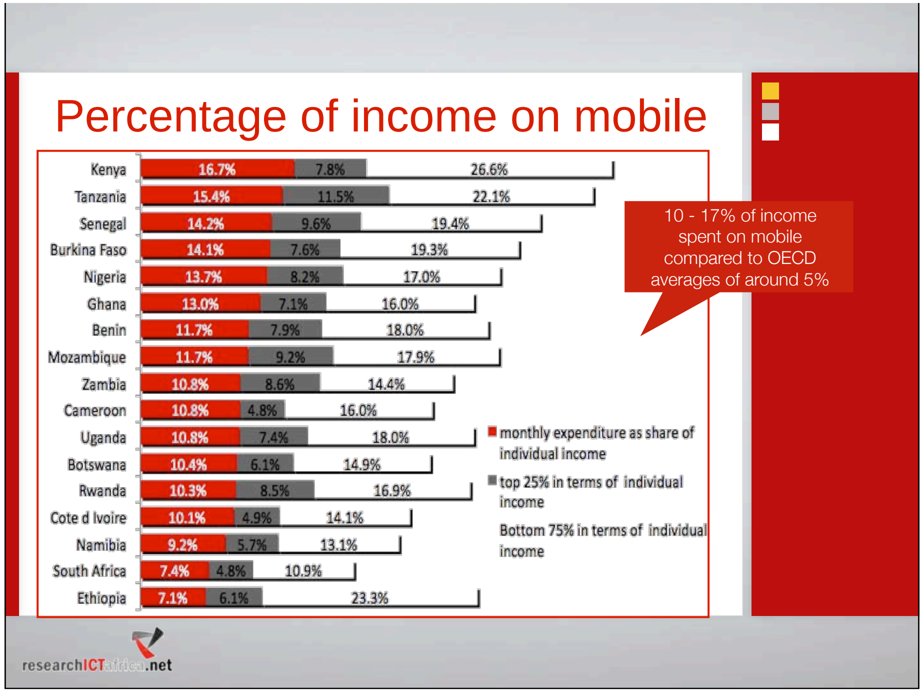
Telecom ownership

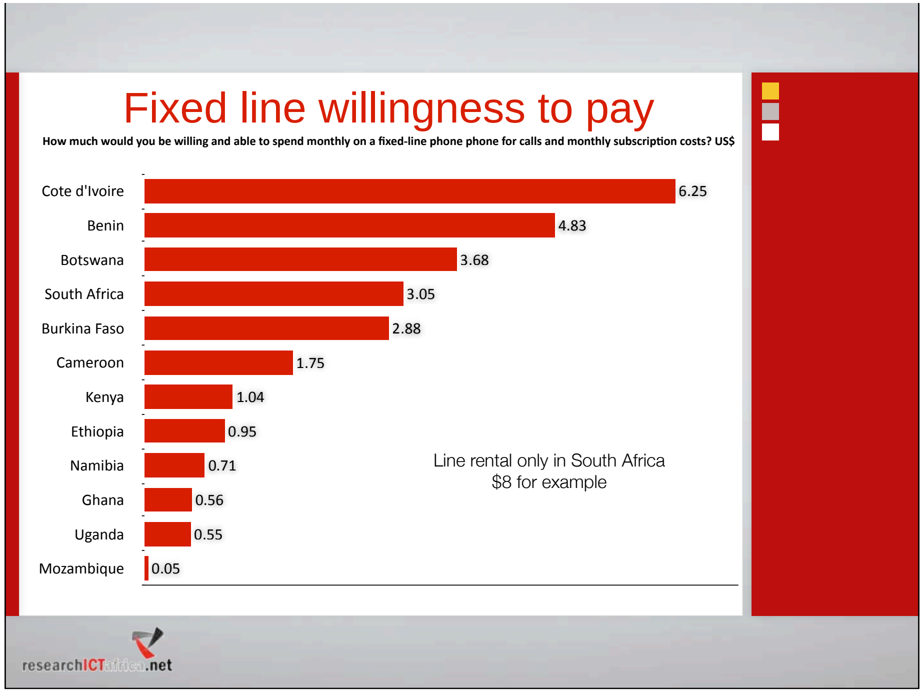


researchICTafrica.net

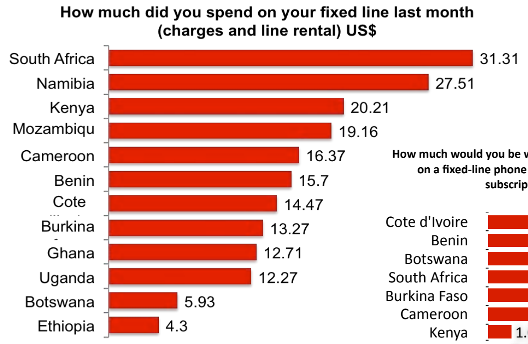
RIA 2007/2008 Household and Individual User Survey

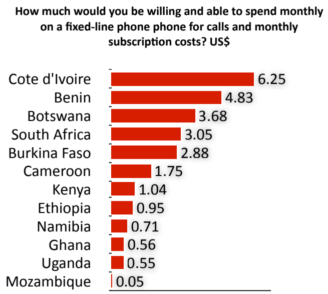
* Results for Zambia and Nigeria are extrapolations at the national level but are not nationally representative


Percentage of income on mobile
Kenya 16.7% 7.8% 26.6%
Tanzania 15.4% 11.5% 22.1%
Senegal 14.2% 9.6% 19.4%
Burkina Faso 14.1% 7.6% 19.3%
Nigeria 13.7% 8.2% 17.0%
Ghana 13.0% 7.1% 16.0%
Benin 11.7% 7.9% 18.0%
Mozambique 11.7% 9.2% 17.9%
Zambia 10.8% 8.6% 14.4%
Cameroon 10.8% 4.8% 16.0%
Uganda 10.8% 7.4% 18.0%
Botswana 10.4% 6.1% 14.9%
Rwanda 10.3% 8.5% 16.9%
Cote d Ivoire 10.1% 4.9% 14.1%
Namibia 9.2% 5.7% 13.1%
South Africa 7.4% 4.8% 10.9%
Ethiopia 7.1% 6.1% 23.3%
monthly expenditure as share of individual income
top 25% in terms of individual income
Bottom 75% in terms of individual income
10 - 17% of income spent on mobile compared to OECD averages of around 5%
researchICTafrica.net


Fixed line willingness to pay
How much would you be willing and able to spend monthly on a fixed-line phone phone for calls and monthly subscription costs? US$
Cote d'Ivoire 6.25
Benin 4.83
Botswana 3.68
South Africa 3.05
Burkina Faso 2.88
Cameroon 1.75
Kenya 1.04
Ethiopia 0.95
Namibia 0.71
Ghana 0.56
Uganda 0.55
Mozambique 0.05
Line rental only in South Africa
$8 for example
researchICTafrica.net

Fixed line expenditure vs willingness to pay



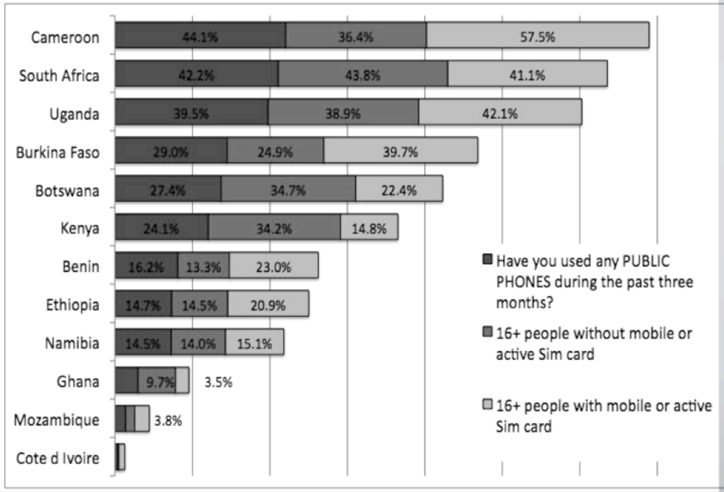


Mobile willingness to pay

Variable Description	Average WTP for a mobile handset in US$	Average expected cost of a mobile handset in US$	Average WTP for a mobile handset in US$		
			Major Urban	Other Urban	Rural
Benin	7.45	11.44	9.65	9.44	6.92
Botswana	19.14	27.38	22.85	16.17	19.46
Burkina Faso	8.92	12.84	11.09	14.28	8.44
Cameroon	15.11	22.16	20.06	13.09	14.91
Côte d'Ivoire	29.70	30.06	21.34	26.15	31.38
Ethiopia	6.06	64.19	12.65	14.26	4.74
Ghana	14.02	23.15	11.12	11.99	14.86
Kenya	16.98	26.68	21.99	15.79	16.75
Mozambique	4.00	23.2	9.29	6.74	2.93
Namibia	24.64	25.12	33.78	34.32	22.17
Nigeria*	5.65	12.57	5.19	5.32	5.72
Senegal	19.55	2543.0%	21.73	17.27	19.39
South Africa	17.44	32.41	22.75	22.75	13.27
Tanzania	10.89	17.3	21.24	11.09	9.74
Zambia*	17.42	22.43	25.25	34.89	13.98

Pent up demand in Cote d'Ivoire & Namibia

Continued use of public phones



Findings… fixed… recommendations

- FINDINGS
  - Fixed lines access and usage charges major obstacle to usage
- RECOMMENDATIONS
  - Create competition while ensuring adequate return to invest in network extension
  - Reduce access charge (monthly line rental) even if higher usage charges to enable entry of consumers into fixed market
  - Open competition in access network
  - Unbundling local loop
  - Critical for broadband development

Findings… mobile..recommendations

- Mobile phone access and usage constrained by high costs
- Increase competition and remove any existing customs and excise and VAT on handsets below $50 and on any additional taxes on communication services

Findings…pay phones … Recommendations

- FINDINGS
  - Payphones still widely used in multiple access and usage strategy of individuals.
- RECOMMENDATIONS
  - Regulate pay phone extension and prices for mobile and fixed networks to ensure access for those marginalised from fixed and mobile services, and extend these services at public access points to Internet.
  - Support innovations around a universal number allowing for messaging and charging

Internet

- FINDINGS
  - Internet awareness reasonably high but access limited by absence of skills to use Internet and absence of access points
- RECOMMENDATIONS
  - Extend services at public access points to include Internet.
  - Roll out Internet training in schools, community centres and set national targets.
  - Reduce the cost of Internet enabled mobile services

researchICTafrica.net

Computer literacy

- FINDINGS
  - Absence of computer literacy to utilise Internet
- RECOMMENDATIONS
  - Develop and implement dedicated human capital strategies in formal and informal education programme, adult literacy programmes and civil services training

Institutional arrangements

- FINDINGS
  - Unintended policy outcomes, particularly affordable access to full range of communication services
  - Conflicts of interest between policy makers, regulators and operators
- RECOMMENDATIONS
  - Develop institutional arrangements and transparent administrative procedures that allow for clear division of policy, regulatory and operational functions and participatory policy processes that draw on all available expertise

PRICES

- FINDINGS
  - High prices constrain the entry of new consumers into markets and inhibit the usage of those in the market
- RECOMMENDATIONS
  - Remove barriers to entry and establish conditions for fair competition Including include cost-based interconnection and access to facilities of incumbents, prevention of the abuse of market dominance and access to spectrum and numbers; regulate bottleneck facilities

CONSUMER WELFARE

- FINDINGS
  - Consumers unaware/confused by artificial licensing categories
  - Constrained access outside of major metropolitan areas and informal settlements
  - Victims of price extraction from operators and governments
- RECOMMENDATIONS
  - Negative impact of policy lags can be overcome with service-neutral licensing that allows operators and service providers to develop seamlessly to offer new services
  - Develop open-access regimes to encourage the optimal use of available spectrum and facilities and encourage entrepreneurship and innovation.
  - Move to cost based pricing and remove secondary taxes

This research is made possible
through the support of

IDRC CRDI
International Development
Research Centre
Centre de recherches pour le
développement international

researchICTafrica.net