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Towards evidence-based ICT policy and Regulation
Alison Gillwald
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
Towards evidence based policy

• 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 will provide decision-makers with an assessment of policy performance and identify points of intervention
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 of state state ownership and conflicts of interest
- Institutional arrangements unclear - Not always clear delineation of policy making, regulatory and operational powers
- No specialisation - Department, Parliament, sector regulator
Special role of Parliament

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

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

Telecom investment & GDP per capita

- Nigeria
- Nigeria GDP per capita
- South Africa
- South Africa GDP per capita

## Termination charges

<table>
<thead>
<tr>
<th></th>
<th>Mobile to mobile US$</th>
<th>Mobile to fixed US$</th>
<th>Fixed to mobile US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botswana</td>
<td>11c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>5.27c</td>
<td>2c</td>
<td>5.27</td>
</tr>
<tr>
<td>South Africa</td>
<td>12c</td>
<td>3.5c</td>
<td>12c</td>
</tr>
<tr>
<td>Tanzania</td>
<td>7.83</td>
<td>7.83</td>
<td>7.83</td>
</tr>
<tr>
<td>Uganda</td>
<td>9c</td>
<td>9c</td>
<td>9c</td>
</tr>
</tbody>
</table>
Market performance/policy outcomes

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

<table>
<thead>
<tr>
<th>PPP</th>
<th>Cost of a local 1 minute call (peak rate)</th>
<th>Cost of a national 1 minute call (peak rate)</th>
<th>Cost of a 3 minute call to US (peak rate)</th>
<th>Average fixed-line expenditure</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin</td>
<td>0.09</td>
<td>0.26</td>
<td>3.16</td>
<td>41.65</td>
<td>Rebalanced</td>
</tr>
<tr>
<td>Botswana</td>
<td>0.13</td>
<td>0.34</td>
<td>3.01</td>
<td>19.00</td>
<td>Rebalanced</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>0.46</td>
<td>1.05</td>
<td>11.68</td>
<td>65.35</td>
<td>High cross-subsidisation/high call charges</td>
</tr>
<tr>
<td>Cameroon</td>
<td>0.21</td>
<td>0.30</td>
<td>3.84</td>
<td>44.59</td>
<td>Rebalancing</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>0.21</td>
<td>0.21</td>
<td>1.59</td>
<td>32.67</td>
<td>Rebalanced</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>0.02</td>
<td>0.86</td>
<td>20.70</td>
<td>40.97</td>
<td>High cross-subsidization</td>
</tr>
<tr>
<td>Ghana</td>
<td>0.25</td>
<td>0.25</td>
<td>4.74</td>
<td>75.70</td>
<td>Rebalancing</td>
</tr>
<tr>
<td>Kenya</td>
<td>0.21</td>
<td>0.28</td>
<td>4.65</td>
<td>56.57</td>
<td>Rebalancing</td>
</tr>
<tr>
<td>Mozambique</td>
<td>0.49</td>
<td>0.49</td>
<td>4.35</td>
<td>87.39</td>
<td>High cost of all calls</td>
</tr>
<tr>
<td>Namibia</td>
<td>0.16</td>
<td>0.35</td>
<td>6.28</td>
<td>105.20</td>
<td>Cross-subsidisation</td>
</tr>
<tr>
<td>Rwanda</td>
<td>0.39</td>
<td>0.66</td>
<td>16.45</td>
<td></td>
<td>High cross-subsidization</td>
</tr>
<tr>
<td>Senegal</td>
<td>0.15</td>
<td>0.61</td>
<td>2.27</td>
<td></td>
<td>Rebalanced</td>
</tr>
<tr>
<td>South Africa</td>
<td>0.19</td>
<td>0.29</td>
<td>1.29</td>
<td>111.74</td>
<td>Rebalanced</td>
</tr>
<tr>
<td>Tanzania</td>
<td>0.26</td>
<td>0.26</td>
<td>5.25</td>
<td></td>
<td>Rebalancing</td>
</tr>
<tr>
<td>Uganda</td>
<td>0.48</td>
<td>0.52</td>
<td>7.69</td>
<td>135.07</td>
<td>Cross subsidisation/high call charges</td>
</tr>
<tr>
<td>Zambia</td>
<td>0.07</td>
<td>0.20</td>
<td>6.97</td>
<td></td>
<td>High cross subsidisation.</td>
</tr>
</tbody>
</table>
Fixed Lines

- South Africa: 2,181,236 (Residential lines, HH Data 2007/2008), 4,708,000 (Fixed line subscribers, 2006 Supply side data)
- Uganda: 2,116,958
- Ethiopia: 1,020,770
- Ghana: 97,729
- Kenya: 194,422
- Cote d'Ivoire: 126,723
- Namibia: 60,224
- Botswana: 45,847
- Burkina Faso: 114,156
- Cameroon: 47,874
- Benin: 55,861
- Mozambique: 22,365

- Residential lines (HH Data 2007/2008)
- Fixed line subscribers (2006 Supply side data)
## 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$

<table>
<thead>
<tr>
<th>Country</th>
<th>Willingness to Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cote d'Ivoire</td>
<td>6.25</td>
</tr>
<tr>
<td>Benin</td>
<td>4.83</td>
</tr>
<tr>
<td>Botswana</td>
<td>3.68</td>
</tr>
<tr>
<td>South Africa</td>
<td>3.05</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>2.88</td>
</tr>
<tr>
<td>Cameroon</td>
<td>1.75</td>
</tr>
<tr>
<td>Kenya</td>
<td>1.04</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>0.95</td>
</tr>
<tr>
<td>Namibia</td>
<td>0.71</td>
</tr>
<tr>
<td>Ghana</td>
<td>0.56</td>
</tr>
<tr>
<td>Uganda</td>
<td>0.55</td>
</tr>
<tr>
<td>Mozambique</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Line rental only in South Africa $8 for example
Fixed line expenditure vs willingness to pay

How much did you spend on your fixed line last month (charges and line rental) US$:

- South Africa: 31.31
- Namibia: 27.51
- Kenya: 20.21
- Mozambique: 19.16
- Cameroon: 16.37
- Benin: 15.7
- Cote d'Ivoire: 14.47
- Burkina Faso: 13.27
- Ghana: 12.71
- Uganda: 12.27
- Botswana: 5.93
- Ethiopia: 4.3

How much would you be willing and able to spend monthly on a fixed-line 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
Urban share of residential fixed lines

- Uganda: 100%
- Mozambique: 100%
- Botswana: 67%
- Namibia: 73%
- Cameroon: 100%
- Benin: 92%
- Ghana: 93%
- Kenya: 54%
- Cote d'Ivoire: 85%
- Burkina Faso: 95%
- Ethiopia: 69%
- South Africa: 96%
Supply side - mobile pricing

2006 Low OECD User Basket - cost in US$ using nominal end of 2006 exchange rates

- Nigeria: 12.5
- South Africa: 10.9
- Kenya: 10.6
- Côte d'Ivoire: 10.2
- Burkina Faso: 9.7
- Namibia: 9.6
- Cameroon: 8.6
- Zambia: 7.9
- Mozambique: 7.6
- Benin: 7.4
- Senegal: 7.3
- Uganda: 7.3
- Botswana: 7.0
- Ghana: 6.5
- Tanzania: 5.8
- Rwanda: 5.6
- Ethiopia: 2.2
Supply side - mobile pricing

2006 Low OECD User Basket - cost in US$ using implied PPP conversion rates

- Uganda: 36.2
- Mozambique: 32.4
- Ghana: 30.8
- Rwanda: 30.5
- Burkina Faso: 29.2
- Namibia: 27.5
- South Africa: 27.2
- Kenya: 20.5
- Nigeria: 20.0
- Botswana: 18.4
- Cameroon: 18.4
- Senegal: 18.4
- Côte d'Ivoire: 17.9
- Benin: 16.3
- Tanzania: 14.3
- Ethiopia: 13.3
- Zambia: 11.6
Supply side - mobile pricing

2006 Low OECD User Basket - cost in US$ using nominal end of 2006 exchange rates

- Nigeria: 12.5
- South Africa: 10.9
- Kenya: 10.6
- Côte d'ivoire: 10.2
- Burkina Faso: 9.7
- Namibia: 9.6
- Cameroon: 8.6
- Zambia: 7.9
- Mozambique: 7.6
- Benin: 7.4
- Senegal: 7.3
- Uganda: 7.3
- Botswana: 7.0
- Ghana: 6.5
- Tanzania: 5.8
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2006 Low OECD User Basket - cost in US$ using implied PPP conversion rates

- Uganda: 36.2
- Mozambique: 32.4
- Ghana: 30.8
- Rwanda: 30.5
- Burkina Faso: 29.2
- Namibia: 27.5
- South Africa: 27.2
- Kenya: 20.5
- Nigeria: 20.0
- Botswana: 18.4
- Cameroon: 18.4
- Senegal: 18.4
- Côte d'ivoire: 17.9
- Benin: 16.3
- Tanzania: 14.3
- Ethiopia: 13.3
- Zambia: 11.6
## Mobile willingness to pay

<table>
<thead>
<tr>
<th>Variable Description</th>
<th>Average WTP for a mobile handset in US$</th>
<th>Average expected cost of a mobile handset in US$</th>
<th>Average WTP for a mobile handset in US$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major Urban</td>
<td>Other Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>Benin</td>
<td>7.45</td>
<td>11.44</td>
<td>9.65</td>
</tr>
<tr>
<td>Botswana</td>
<td>19.14</td>
<td>27.38</td>
<td>22.85</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>8.92</td>
<td>12.84</td>
<td>11.09</td>
</tr>
<tr>
<td>Cameroon</td>
<td>15.11</td>
<td>22.16</td>
<td>20.06</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>29.70</td>
<td>30.06</td>
<td>21.34</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>6.06</td>
<td>64.19</td>
<td>12.65</td>
</tr>
<tr>
<td>Ghana</td>
<td>14.02</td>
<td>23.15</td>
<td>11.12</td>
</tr>
<tr>
<td>Kenya</td>
<td>16.98</td>
<td>26.68</td>
<td>21.99</td>
</tr>
<tr>
<td>Mozambique</td>
<td>4.00</td>
<td>23.2</td>
<td>9.29</td>
</tr>
<tr>
<td>Namibia</td>
<td>24.64</td>
<td>25.12</td>
<td>33.78</td>
</tr>
<tr>
<td>Nigeria*</td>
<td>5.65</td>
<td>12.57</td>
<td>5.19</td>
</tr>
<tr>
<td>Senegal</td>
<td>19.55</td>
<td>2543.0%</td>
<td>21.73</td>
</tr>
<tr>
<td>South Africa</td>
<td>17.44</td>
<td>32.41</td>
<td>22.75</td>
</tr>
<tr>
<td>Tanzania</td>
<td>10.89</td>
<td>17.3</td>
<td>21.24</td>
</tr>
<tr>
<td>Zambia*</td>
<td>17.42</td>
<td>22.43</td>
<td>25.25</td>
</tr>
</tbody>
</table>
Gender disaggregations - mobile

- Kenya: Male 21.1%, Female 11.5%
- South Africa: Male 20.4%, Female 11.3%
- Nigeria: Male 16.4%, Female 7.6%
- Cameroon: Male 13.1%, Female 12.8%
- Benin: Male 12.0%, Female 5.4%
- Namibia: Male 11.2%, Female 7.2%
- Botswana: Male 10.1%, Female 4.0%
- Ghana: Male 8.1%, Female 3.2%
- Cote d Ivoire: Male 8.1%, Female 4.0%
- Burkina Faso: Male 6.4%, Female 3.7%
- Uganda: Male 3.7%, Female 1.1%
- Mozambique: Male 1.0%, Female 0.9%
- Ethiopia: Male 0.9%, Female 0.4%
Mobile phone users

16+ with mobile phone or active sim: 62.1%

16+ with duplicated sim cards: 10.8%

16+ without mobile phone and active sim and willing to pay R58.40 (US$ 5)* or more: 17.9%

Share of prepaid users: 78.6%

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
### Percentage of income spent on mobile

<table>
<thead>
<tr>
<th>Country</th>
<th>Monthly Expenditure</th>
<th>Top 25%</th>
<th>Bottom 75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>16.7%</td>
<td>7.8%</td>
<td>26.6%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>15.4%</td>
<td>11.5%</td>
<td>22.1%</td>
</tr>
<tr>
<td>Senegal</td>
<td>14.2%</td>
<td>9.6%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>14.1%</td>
<td>7.6%</td>
<td>19.3%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>13.7%</td>
<td>8.2%</td>
<td>17.0%</td>
</tr>
<tr>
<td>Ghana</td>
<td>13.0%</td>
<td>7.1%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Benin</td>
<td>11.7%</td>
<td>7.9%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>11.7%</td>
<td>9.2%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Zambia</td>
<td>10.8%</td>
<td>8.6%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Cameroon</td>
<td>10.8%</td>
<td>4.8%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Uganda</td>
<td>10.8%</td>
<td>7.4%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Botswana</td>
<td>10.4%</td>
<td>6.1%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>10.3%</td>
<td>8.5%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>10.1%</td>
<td>4.9%</td>
<td>14.1%</td>
</tr>
<tr>
<td>Namibia</td>
<td>9.2%</td>
<td>5.7%</td>
<td>13.1%</td>
</tr>
<tr>
<td>South Africa</td>
<td>7.4%</td>
<td>4.8%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>7.1%</td>
<td>6.1%</td>
<td>23.3%</td>
</tr>
</tbody>
</table>

10 - 17% of income spent on mobile compared to OECD averages of around 5%.
## Continued use of public phones

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage Using Public Phones</th>
<th>Percentage Active Sim Card</th>
<th>Percentage Without Active Sim Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>44.1%</td>
<td>36.4%</td>
<td>57.5%</td>
</tr>
<tr>
<td>South Africa</td>
<td>42.2%</td>
<td>43.8%</td>
<td>41.1%</td>
</tr>
<tr>
<td>Uganda</td>
<td>39.5%</td>
<td>38.9%</td>
<td>42.1%</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>29.0%</td>
<td>24.9%</td>
<td>39.7%</td>
</tr>
<tr>
<td>Botswana</td>
<td>27.4%</td>
<td>34.7%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Kenya</td>
<td>24.1%</td>
<td>34.2%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Benin</td>
<td>16.2%</td>
<td>13.3%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>14.7%</td>
<td>14.5%</td>
<td>20.9%</td>
</tr>
<tr>
<td>Namibia</td>
<td>14.5%</td>
<td>14.0%</td>
<td>15.1%</td>
</tr>
<tr>
<td>Ghana</td>
<td>9.7%</td>
<td>3.5%</td>
<td></td>
</tr>
<tr>
<td>Mozambique</td>
<td>3.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>1.7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Have you used any PUBLIC PHONES during the past three months?**
- **16+ people without mobile or active Sim card**
- **16+ people with mobile or active Sim card**
Internet access, usage and familiarity

- Households with a computer at home: 14.8%
- Households with a working internet connection: 4.8%
- Know what the internet is (16+ yrs): 50.8%
- Use the internet (16+ yrs): 15.0%
Home computer & connection

- Households with computer at home
- Households with working Internet connection

<table>
<thead>
<tr>
<th>Country</th>
<th>Computer at Home</th>
<th>Internet Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>4.8%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Namibia</td>
<td>3.3%</td>
<td>11.2%</td>
</tr>
<tr>
<td>Kenya</td>
<td>2.2%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Ghana</td>
<td>0.3%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>0.6%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Botswana</td>
<td>0.1%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Senegal</td>
<td>0.9%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Cameroon</td>
<td>1.2%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>0.9%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Benin</td>
<td>0.1%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>0.0%</td>
<td>1.3%</td>
</tr>
<tr>
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<td>0.5%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Uganda</td>
<td>0.0%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>0.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>0.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>0.1%</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Less than 3% of households in most countries have connectivity.
### Internet Usage and Frequency

- **Mozambique**
  - Every day or almost every day: 60.0%
  - At least once a month: 23.7%
  - At least once a week: 7.9%
  - Less than once a month: 8.3%

- **South Africa**
  - Every day or almost every day: 56.2%
  - At least once a month: 30.4%
  - At least once a week: 17.2%
  - Less than once a month: 9.4%

- **Kenya**
  - Every day or almost every day: 41.0%
  - At least once a month: 35.3%
  - At least once a week: 17.2%
  - Less than once a month: 5.4%

- **Namibia**
  - Every day or almost every day: 35.2%
  - At least once a month: 32.9%
  - At least once a week: 15.1%
  - Less than once a month: 16.8%

- **Ghana**
  - Every day or almost every day: 31.9%
  - At least once a month: 35.2%
  - At least once a week: 13.6%
  - Less than once a month: 19.2%

- **Botswana**
  - Every day or almost every day: 31.3%
  - At least once a month: 47.7%
  - At least once a week: 14.1%
  - Less than once a month: 6.9%

- **Tanzania**
  - Every day or almost every day: 18.7%
  - At least once a month: 31.4%
  - At least once a week: 43.9%
  - Less than once a month: 5.9%

- **Senegal**
  - Every day or almost every day: 17.7%
  - At least once a month: 25.9%
  - At least once a week: 20.8%
  - Less than once a month: 35.7%

- **Cote d'Ivoire**
  - Every day or almost every day: 15.8%
  - At least once a month: 36.5%
  - At least once a week: 27.8%
  - Less than once a month: 19.9%

- **Uganda**
  - Every day or almost every day: 15.4%
  - At least once a month: 78.5%
  - At least once a week: 9.0%
  - Less than once a month: 27.6%

- **Ethiopia**
  - Every day or almost every day: 14.5%
  - At least once a month: 48.9%
  - At least once a week: 30.6%
  - Less than once a month: 24.3%

- **Burkina Faso**
  - Every day or almost every day: 13.5%
  - At least once a month: 31.5%
  - At least once a week: 30.6%
  - Less than once a month: 24.3%

- **Nigeria**
  - Every day or almost every day: 12.5%
  - At least once a month: 52.0%
  - At least once a week: 24.0%
  - Less than once a month: 11.5%

- **Benin**
  - Every day or almost every day: 11.8%
  - At least once a month: 54.7%
  - At least once a week: 21.5%
  - Less than once a month: 11.9%

- **Cameroon**
  - Every day or almost every day: 11.2%
  - At least once a month: 36.6%
  - At least once a week: 29.5%
  - Less than once a month: 22.6%

- **Rwanda**
  - Every day or almost every day: 10.7%
  - At least once a month: 37.5%
  - At least once a week: 38.9%
  - Less than once a month: 12.8%
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% 0.0%

Less than 15% of people access the Internet in even countries with the highest access rates.
Points of internet access

<table>
<thead>
<tr>
<th>Country</th>
<th>Home</th>
<th>Internet, Café</th>
<th>At another persons HOME</th>
<th>At an educational institution (school, university, etc.)</th>
<th>At work</th>
<th>Using a mobile phone</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>95.0%</td>
<td>12.7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>92.0%</td>
<td>15.7%</td>
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<tr>
<td>Nigeria</td>
<td>89.0%</td>
<td>20.2%</td>
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</tr>
<tr>
<td>Rwanda</td>
<td>86.5%</td>
<td>23.7%</td>
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</tr>
<tr>
<td>Benin</td>
<td>85.1%</td>
<td>32.4%</td>
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</tr>
<tr>
<td>Cote d Ivoire</td>
<td>84.9%</td>
<td>12.7%</td>
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<td></td>
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<tr>
<td>Ghana</td>
<td>77.1%</td>
<td>12.7%</td>
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<td></td>
</tr>
<tr>
<td>Senegal</td>
<td>70.0%</td>
<td>19.3%</td>
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<tr>
<td>Tanzania</td>
<td>68.9%</td>
<td>20.2%</td>
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<tr>
<td>Kenya</td>
<td>65.5%</td>
<td>19.3%</td>
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<tr>
<td>Ethiopia</td>
<td>60.0%</td>
<td>20.2%</td>
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</tr>
<tr>
<td>Uganda</td>
<td>51.5%</td>
<td>52.9%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>45.9%</td>
<td>29.9%</td>
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<td></td>
</tr>
<tr>
<td>Botswana</td>
<td>31.5%</td>
<td>37.9%</td>
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<tr>
<td>Mozambique</td>
<td>27.9%</td>
<td>33.3%</td>
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</tr>
<tr>
<td>Namibia</td>
<td>24.3%</td>
<td>35.3%</td>
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</tr>
</tbody>
</table>
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
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