Shaping the Future of the Internet in Africa

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Outline

The state of Internet in Africa

The Internet of opportunity

Challenges

Working for a brighter future for the Internet

Conclusion
The state of Internet in Africa
Our mission: Promoting the open development, evolution, and use of the Internet for the benefit of all people throughout the world.

How We Work

Operating at the intersection of policy, technology and development, allows the Internet Society to be a thought leader on issues key to the Internet’s continued growth and evolution.
Global Presence
March 2015

- **108 Chapters Worldwide**
- **More than 70k Members and Supporters**
- **145 Organization Members**
- **6 Regional Bureaus**
Africa before 2000

Less than 2% mobile penetration

International connectivity was using satellites for sub-Saharan Africa

National backbones were almost inexistent

Internet arrived in Tunisia and South Africa in 1991 and Egypt in 1993

Internet penetration was 0.78%

Broadband was almost inexistent
Growth of Internet penetration

Figure 1 Internet penetration in Africa (Sources: http://www.internetworldstats.com/stats1.htm; ITU (2014), the World in 2014: ICT Facts and Figures)
Growth of Internet Penetration in Top 10 countries

## ICT Indicators today

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Africa</th>
<th>World average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet penetration</td>
<td>28.7%</td>
<td>49.5%</td>
</tr>
<tr>
<td>Fixed telephone subscriptions</td>
<td>1.3%</td>
<td>15.8%</td>
</tr>
<tr>
<td>Fixed broadband</td>
<td>0.4%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Mobile cellular subscriptions</td>
<td>69%</td>
<td>96%</td>
</tr>
<tr>
<td>Mobile broadband subscriptions</td>
<td>19%</td>
<td>32%</td>
</tr>
</tbody>
</table>
International connectivity
Terrestrial connectivity is moving in from coasts

Source: afterfibre.net
International connectivity

• In just 5 years – from 2009 to 2014 Africa’s
  • international bandwidth increased 20-fold
  • terrestrial network more than doubled.

In 2011, inter-Africa Internet bandwidth was less than 2% of all the total international traffic

In 2015, it was about 10%
Rise of mobile communication

The primary means of Internet access is increasingly shifting towards wireless.

Wireless broadband

- 3G/4G mobile data plans for tablet or smartphones
- free or paid Wi-Fi services offered by businesses, hotels, Internet cafés, and others

Increasing number of smartphones

- Nigeria (25%), Egypt (22%), Ghana (18%), Cameroon (17%), Kenya (13%) and Senegal (11%).
Inter-Regional Internet Bandwidth, 2015

Source: Telegeography
Major International Internet Routes in Africa, 2015

Source: Telegeography
The Internet of opportunity
iGDP (Internet's contribution to GDP) by country, 2012, % of GDP

- Sweden: 6.3
- Taiwan: 5.4
- United Kingdom: 5.4
- South Korea: 4.6
- Malaysia: 4.1
- Japan: 4.0
- Hungary: 3.9
- United States: 3.8
- Senegal: 3.3
- Germany: 3.2
- India: 3.2
- France: 3.1
- Kenya: 2.9
- Canada: 2.7
- China: 2.6
- Morocco: 2.3
- Argentina: 2.2
- Italy: 1.7
- Mozambique: 1.6
- Brazil: 1.5
- South Africa: 1.4
- Côte d'Ivoire: 1.3
- Tanzania: 1.3
- Cameroon: 1.2
- Ghana: 1.1
- Egypt: 1.0
- Mexico: 1.0
- Turkey: 0.9
- Vietnam: 0.9
- Russia: 0.8
- Algeria: 0.8
- Nigeria: 0.8
- Ethiopia: 0.6
- Angola: 0.5

Average: 3.4x
Africa: 1.1%
Emerging economies: 1.9%
Developed economies: 3.7%

Source: McKinsey and company
Social Opportunity

• Increase reach, access and quality of education

• Inclusion of disadvantaged communities
  • Remote areas
  • Women
  • Sidelined communities

• …
Political Opportunity

- Africa is poor because it has been looted by its leaders and associates
  - Mobotu Sesse Seko 1-5 Billion USD
  - Sani Abacha 3 Billion USD
- The Internet makes despotism, corruption, injustice more difficult
Challenges
Disparity of Access

Percentage of Internet users: bottom 10 countries based on GDP per capita
Cost of access

Cost of access of country’s average GDP per capita

- less than 2% in most of Europe
- 6.1% in South Africa
- 7.4% in Sudan
- 15.7% in Kenya’s average GDP
- 31% in Uganda
- 60.4% in Ethiopia
Quality of access

• Interruptions
  • Lack of redundancy
  • Vandalism
  • Government shutdowns

• Bandwidth
  • Last mile
  • Content hosted outside the continent
Trust

• Security is the most important policy concern
• Personal data protection is a major concern
• Businesses and governments are vulnerable
• Children are targeted
Governance

• Major victory with the IANA transition
• Africa not always present in global forums
• Lack of strong multistakeholder governance at local level
Working for a brighter future for the Internet
Interconnect Africa

- **Domestic connectivity**
  - To connect landing stations, POPs, IXPs, etc.
  - Rights-of-way policies raise costs

- **Cross-border**
  - 16 land-locked countries and others without landing station
  - Often difficult to coordinate

Source: afterfibre.net
Access …

- Promoting African content and applications
- Keeping African content local to Africa
- Meaningful access: access should change the lives of Africans
Trust

- **Collaborative security**
  - Fostering confidence and protecting opportunities:
  - Collective Responsibility
  - Fundamental Properties and Values
  - Evolution and Consensus
  - Think Globally, act Locally

- **Trust framework**
Governance

• Build strong regional and national institutions
  • AFRINIC
  • AFNOG
  • AFTLD
  • Internet Society
  • APC
  • NIC
  • CERT

• Increase presence in International governance
  • Ex: IETF, ICANN
Conclusion
- The Internet has already transformed Africa
- However there is much more benefit that Africa can get from the Internet
- We all have responsibilities to shape it so that Africa reaps the benefits
- AFRICA NEEDS THE INTERNET AS MUCH AS THE INTERNET NEEDS AFRICA