

Kenya National Broadband Strategy - Comments

TO: The Director General
Communications Authority of Kenya
CA Center, Waiyaki Way
P.O. Box 14448
Nairobi-00800
Email: nbs@ca.go.ke

CC: Nanjira Sambuli (World Wide Web Foundation/Alliance for Affordable Internet)
<nanjira.sambuli@webfoundation.org>

Ephraim Kenyanito (Article 19 Kenya)
<ephraim@article19.org>

Carlos Rey-Moreno (Association for Progressive Communications)
<carlos@apc.org>

Verengai Mabika, Michuki Mwangi and Kevin Chege (Internet Society)
mabika@isoc.org / mwangi@isoc.org / chege@isoc.org

Steve Song (Rhizomatica)
steve@rhizomatica.org

Josephine Miliza (Tunapanda)
josephine@tunapanda.org

Mwendwa Kivuva (KICTANET)
lordmwesh@gmail.com

RE: Public Consultation on National Broadband Strategy

Thank you for the opportunity to provide comment on the important topic of a national broadband strategy. We have done the best we can within the short consultation period afforded. We would like to request a longer consultation period in order to make an additional contribution.

Pervasive, affordable access to broadband has become the sine qua non of a thriving modern economy. However, affordable access strategies that do not target everyone can end up magnifying the digital divide: those with affordable phone/internet services have access to ever increasing education resources, opportunities, services, and social safety nets such that the unconnected fall further behind just by standing still. This represents a challenge because, in

spite of the phenomenal spread of mobile and now mobile broadband infrastructure in the last 20 years, network growth is now slowing¹ as the economic models of large mobile network operators fail to match the economics of poorer more sparsely populated rural areas. According, there is a need to enable alternative approaches to broadband delivery that can complement existing network operator models.

We commend you for the strong approach you have outlined in your report with regard to the role that the “bottom up model²” could play in closing the “Infrastructure and Connectivity” gaps identified³. Case studies from around the world^{4 5 6} provide convincing evidence of the positive impacts of bottom-up approaches to access infrastructure. The ITU Development Bureau has recommended that governments support small and non-profit community operators⁷. We believe there is no doubt that the answer to the question the proposed National Broadband Strategy poses itself “Do we also see the scope to support local bottom-up citizen initiatives?” (page 51) is an emphatic yes.

Having recognized the value of the bottom-up model, we have the following recommendations for the text that we believe will improve its impact:

- Improve the consistency in the terminology when referring to initiatives following the local bottom-up citizen model. In the current text references to: community broadband model (page 53), community broadband initiatives (page 110), community broadband access networks (page 113), and community networks (page 137) seem to be used interchangeably. Additionally, this model is also implied as part of the strategies (which we commend) to support Community Based Organizations (CBOs) (page 79). Harmonizing the terminology to refer to them will facilitate its implementation. Additionally, there should be a difference between the recognized potential for

¹ Universal internet access unlikely until at least 2050, experts say. The Guardian. 10 January 2019. <https://www.theguardian.com/technology/2019/jan/10/universal-internet-access-unlikely-until-2050-experts-say-lack-skills-investment-slow-growth>

² Ref page 51: “ Bottom-up model. The bottom-up, or local community, model involves a group of end users organizing themselves into a jointly owned and democratically controlled group (frequently a co-operative) capable of overseeing the contract to build and operate their own local broadband network.”

³ Ref page 33: “Rural areas are seriously lacking in coverage” & “Low geographical coverage of broadband services; for example, 50% of locations have no 3G services; further, 83% of the land mass lacks broadband services. In addition, fiber optic cables only cover 60,000 km (17% land coverage)”

⁴ Global Information Society Watch 2018: Community Networks. <https://www.giswatch.org/community-networks>

⁵ Supporting the Creation and Scalability of Affordable Access Solutions: Understanding Community Networks in Africa. Carlos Rey-Moreno. 2017 <https://www.internetsociety.org/resources/doc/2017/supporting-the-creation-and-scalability-of-affordable-access-solutions-understanding-community-networks-in-africa/>

⁶ Community Networks in Latin America: Challenges, Regulations and Solutions. Carlos Baca, Luca Belli, Erick Huerta & Karla Velasco 2018. <https://www.internetsociety.org/resources/doc/2018/community-networks-in-latin-america/>

⁷ Recommendation ITU-D 19. Telecommunications for rural and remote areas (Pages 630 - 635) https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC17/Documents/WTDC17_final_report_en.pdf

communities to become both “Physical Infrastructure Providers”, “Network Providers” and “Service Providers”, to other references in text referring to infrastructure deployed in the communities but operated and owned by external players. That is the case with references to “community access networks” (page 59 & 60), “community network hubs” (page 60), community access centres/points (page 109, and references to CAPs). The extension by communities of these CAPs, as in the example provided in page 113 should be encouraged.

- Place more emphasis on the role that communities can play as “Strategic key stakeholders in Broadband Value chain”. As such, we recommend the role defined for them in Page 60 to be redefined as a more active one, particularly around Connectivity along the lines of the bottom up model definition but also with regard to Capacity Building, see below.
- Include support for the creation of operators following this model as part of the “Strategy for Policy, legal and Regulatory Environment” in the Sub-issue “Broadband coverage in rural and Underserved areas e.g. slums” sub-issue. The strategies outlined for CBOs (page 79), as well as others included throughout the document such as tax and licensing incentives, access to Universal Service Funds, and others described below should be considered as part of the support of this model.
 - Additionally, we recommend this support to take the form of:
 - A review of cooperative legislation in Kenya from the point of view of enabling telecommunications cooperatives.
 - Establishment of financing mechanisms for telecommunications cooperatives
 - Establishment of dedicated human resources within the regulator to facilitate and support applications from community networks, ideally decentralised to regions.
 - Consideration of license exemption or reduced regulatory fees for non-profit telecommunications cooperatives.
 - Increase ways for community based initiatives to access funding programs e.g. through simplifying the application process
 - Adapt regulatory administrative and financial burden to the scale and scope of the operators. For instance, consider waiving fees for non-profits and/or ISPs with turnover below a threshold amount per year

Capacity building and innovation (Page 39) should adopt a bottom-up model so that local communities can be actively involved in deploying broadband infrastructure and the creation of locally relevant content. This can be achieved through:

- Actively involving community leaders, champions and members who understand local perspectives in creating ICT training programs and curricula that support development of talent within communities for broadband deployment.
- Have mechanisms that promote peer to peer learning opportunities to facilitate knowledge exchange among communities. We recommend the establishment of a national community networks development program in collaboration with strategic partners to develop the capacity, provide guidance, mentorship and handholding for startup community networks to lower the risk factors.
- Create strategies to encourage local businesses especially in rural and underserved areas to adopt use of ICTs. This can be done through harnessing the power of community led initiatives to help spread interest and uptake.

Below, there is a further set of more general recommendations that would have relevance for bottom-up community owned models but also for small-scale commercial operators attempting to provide affordable broadband coverage in rural and underserved areas:

Spectrum

Section 3.2 on Infrastructure and Connectivity (page 33) recognises that “This notwithstanding, spectrum costs and the process of acquiring can constitute big barriers to the roll out of wireless infrastructure and need to be addressed.” We believe this is a fundamental issue that may require new approaches to address adequately.

The economics of rural access are not improved by high license fees for spectrum access. License-exempt WiFi infrastructure has shown its potential to address access challenges. Kenya is home to the largest public WiFi network in Sub-Saharan Africa⁸ but license-exempt spectrum represents a tiny fraction of the available frequencies for wireless broadband. We encourage the creation of spectrum policies and regulation that specifically target affordable access in rural areas. We encourage the following strategic innovations in spectrum management that could improve affordable access to rural broadband.

⁸ Kenya's BRCK Acquires Surf To Become The Biggest Public WiFi Network In Sub-Saharan Africa. Forbes Magazine 15 February 2019
<https://www.forbes.com/sites/tobyshapshak/2019/02/15/kenyas-brck-acquires-surf-to-become-the-biggest-public-wifi-network-in-sub-saharan-africa/>

- Specific set-asides of IMT spectrum on a primary or secondary basis for use by social-purpose service providers in rural areas⁹.
- Expansion of the license-exempt WiFi frequencies, in line with good practice in other countries, to expand opportunities for WiFi service provision¹⁰.
- Adoption of dynamic spectrum licensing such as TV White Space technology or LTE services such as Citizens Broadband Radio Service¹¹ (CBRS)

This opens up the potential for small operators and community networks to access spectrum in order to deliver access to underserved (or unserved) communities.

Backbone

Table 13: Strategy for Policy, Legal and Regulatory Environment (page 82) of the strategy addresses the issue of broadband as a utility with the stated objective “To elevate broadband status to that of utilities such as electricity and water”. We commend this objective and encourage the strategy to explicitly address the economic nature of **utility infrastructure**.

Recognising broadband backhaul as infrastructure, acknowledges value that accrues from the positive externalities of the network infrastructure far exceed the value generated by direct revenues or taxes generated specifically from the network infrastructure itself. That is to say that the wealth generated by the growth in social and economic activity enabled by the network infrastructure will be far greater than any revenue from network traffic charges.

Accordingly, it is of national strategic interest to make the cost of broadband utility backhaul infrastructure as low as possible in order to generate the maximum amount of traffic on backhaul networks.

We commend the strategy for its emphasis of the importance of Open Access networks which afford fair access to network infrastructure for all players.

We encourage the establishment strategic interconnection points in rural and underserved communities where community network providers can access the national open access networks such as NOFBI.

⁹ Programa Anual de Uso y Aprovechamiento de Bandas de Frecuencias 2015. Instituto Federal de Telecomunicaciones.

<http://www.ift.org.mx/industria/espectro-radioelectrico/programa-anual-de-uso-y-aprovechamiento/programa-2015>

¹⁰ FCC Notice of Proposed Rulemaking In the Matter of Unlicensed Use of the 6 GHz Band. 2 October 2018. <https://docs.fcc.gov/public/attachments/DOC-354364A1.pdf>

¹¹ Wikipedia entry for Citizens Broadband Radio Service as implemented by the US communication regulator https://en.wikipedia.org/wiki/Citizens_Broadband_Radio_Service

In order to reduce the cost of civil works involved in infrastructure build and to avoid duplication of infrastructure, we encourage a “*Dig once*” approach to infrastructure planning and the provision of ducts during road, rail, and utility construction.¹²

Lastly, a broadband strategy might include a set-aside of capacity on the NOFBI network which makes capacity available to bottom-up rural broadband initiatives.

Transparency and Open Data

In section 5.5 (page 67) on Collaboration, the strategy recognises the collaborative, open, ecosystemic nature of internet infrastructure.

“In its Global Internet Report 2014, the Internet Society notes that “Internet ecosystem” is characterized by the involvement of a broad range of stakeholders and the use of services and infrastructure with dispersed ownership and control and operates on the basis of openness, transparency and collaborative process to guide the functionality and development of the technologies and infrastructure that comprise the global internet”. In this regard, the spirit of collaboration, consultation, stakeholder involvement, public participation and inter-disciplinary engagement will be upheld at all times in order to ensure smooth realisation of the broadband vision for Kenya.”

As access to digital communication becomes more strategically valuable and as the importance of ensuring that everyone has affordable access to it increases, the need for transparency also increases. In order to have accurate data on progress, to ensure fairness, and to identify opportunities for the future, there is a need for public information regarding the availability of ICT resources and how they are currently utilised or not utilised. Kenya has been a champion of Open Data in government for several years¹³. We encourage the national broadband strategy to embrace open government data principles with regard to telecommunications and internet infrastructure. Specifically, publicly available data on network infrastructure including fibre networks and tower locations as well as detailed information on spectrum licensing including specific frequencies assigned, license terms, and duration would enable a more public discussion of infrastructure gaps and the means to address them.

Additionally, we recommend that increasing transparency on the Universal Service Fund - of fund financing, disbursements and operations- leverage open data to avail insights around contributions, disbursements, and project design and selection available to the public, and that this data is disaggregated by gender and other factors (e.g., age, income), where possible. Public consultations on use of USF resources could also facilitate innovative ways for bottom-up initiatives to leverage them to initiate and sustain context-appropriate methods of advancing affordable access and meaningful use of internet, including reaching marginalised groups.¹⁴

¹² <https://a4ai.org/research/ghana-infrastructure-sharing-and-open-access-study/> page 41/53

¹³ <https://www.opengovpartnership.org/countries/kenya>

¹⁴ <http://webfoundation.org/docs/2018/03/Using-USAFs-to-Close-the-Gender-Digital-Divide-in-Africa.pdf>

Below are a broader set of recommendations beyond those that would directly affect the bottom up model.

Capacity Building and Innovation

Regarding section 3.4.2 (Opportunities for Improvement) we recommend:

- Re-skilling the existing workforce on emerging technologies, ***trends and Open Internet Standards***.
 - Introduction of courses at higher education institutions that teach and promote the development and use of Open Internet Standards so as to encourage adherence to globally accepted standards in innovation and design of devices or software.
 - Courses can include introduction to Open Internet Standards bodies such as the Internet Engineering Task Force (IETF), the IEEE and the W3C¹⁵
- Skilling of policymakers as well, through inter-ministerial/agency cooperation, in partnership with private sector and civil society, to ensure that public servants are able to engage and implement recommendations arising from the growing evidence-base of challenges and opportunities to realise this strategy's objectives, and a vibrant digital economy in Kenya overall.
 - This is important for policy, legislative and regulatory coherence, since access to and appropriation of ICTs (broadband and devices) affects all aspects of efficient government service delivery and meaningful engagement of citizens as digitalisation becomes a mainstay of economic, sociocultural and political lives.
- Gender-responsive approaches to capacity building and innovation should be mainstreamed. There are gendered differences in access and meaningful use of ICT devices and internet, as various reports indicate.¹⁶ ¹⁷A number of factors compound to create digital gender divides, notably, adverse social norms that prevent women from, eg owning their own devices, lack of time to explore opportunities - owing to the skewed nature of responsibilities women have to bear in their households and in society, income inequalities (with women generally earning less income than men, therefore unlikely to prioritise ownership of devices and internet).
- Support bottom-up capacity building initiatives by groups and organisations working within communities, who are in a strategic position to design, roll out and implement programs that are context-appropriate. Private sector, developmental organisations and government should take a lead from existing initiatives, support the establishment of others, and collaborate with them to sustain and scale capacity building and innovation

¹⁵ OpenStand - <https://open-stand.org/>

¹⁶ <https://www.gsma.com/mobilefordevelopment/resources/mobile-gender-gap-report-2019/>

¹⁷ http://webfoundation.org/docs/2016/09/WF_GR_Kenya.pdf

that is catalysed by local and unique opportunities and challenges in societies.¹⁸ This approach also has the added benefit of encouraging communities to not only consume but create for the digital ecosystem, for instance, in addressing the gap in relevant content and in local languages, as well as federating research and data collection on impacts of ICTs in communities.

Affordability

Although this is mentioned in various pages of the policy, it is imperative that broadband affordability is anchored in the minimum globally accepted standard ie. entry-level internet available for 2% or less of GNI per capita i.e UN broadband target of “1 for 2”¹⁹.

Cyber Security

Regarding page 42 (Broadband Devices) we recommend the development of a framework for security of IoT devices. This can be guided by reference to existing good practice frameworks such as the Online Trust Alliance’s IoT Framework Document²⁰.

There is much more that we would like to contribute on cyber-security, encryption and privacy issues related to the National Broadband Strategy however the short timeframe for feedback prevents us from making a more complete submission. We respectfully request an extension to the comment period in order to make a more complete contribution.

We thank you for the opportunity to comment on this strategy.

Nanjira Sambuli for the World Wide Web Foundation (www.webfoundation.org) and the Alliance for Affordable Internet (<https://a4ai.org/>)
<nanjira.sambuli@webfoundation.org>

Ephraim Kenyanito for Article 19 - Regional Office for Eastern Africa
(<https://www.article19.org/regional-office/eastern-africa/>)
<ephraim@article19.org>

Carlos Rey-Moreno for the Association for Progressive Communications (<https://apc.org>)
<carlos@apc.org>

¹⁸ <https://webfoundation.org/digitalskillsfund>

¹⁹ <https://webfoundation.org/2018/01/un-broadband-commission-adopts-new-target-for-affordable-int>

²⁰ Online Trust Alliance

https://www.internetsociety.org/wp-content/uploads/2018/05/OTA_IoT_Framework_Overview-EN.pdf

Verengai Mabika, Michuki Mwangi and Kevin Chege (Internet Society)
mabika@isoc.org / mwangi@isoc.org / chege@isoc.org

Steve Song for Rhizomatica (<https://rhizomatica.org>)
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Josephine Miliza for Tunapanda (<https://www.tunapanda.org/>)
<josephine@tunapanda.org>

Mwendwa Kivuva (KICTANET (www.kictanet.or.ke)
< lordmwesh@gmail.com >