



NORTHERN CORRIDOR INTEGRATION PROJECTS (NCIP)

REGIONAL BROADBAND STRATEGY

APRIL 2016

[Handwritten signatures in blue ink]

Table of contents

- 1. Introduction3
 - 1.1. Background3
 - 1.2. Context3
 - 1.3. Vision4
 - 1.4. Definition of Broadband4
 - 1.5. Objectives of the Broadband Strategy5
 - 1.6. Benefits of Broadband5
- 2. Key policy areas7
 - 2.1. Infrastructure and connectivity7
 - 2.2. Content, applications and devices8
 - 2.3. Legal and regulatory framework9
 - 2.4. Financing and investment10
- 3. Implementation institutional framework10
- 4. Implementation plan11



1. Introduction

1.1. Background

The Northern Corridor Integration Project Partner States, namely: Kenya; Rwanda; Uganda and South Sudan, are committed to the transformation of their socio-economic landscape through infrastructure development. One of the major infrastructure initiatives that is earmarked for implementation is the regional broadband ecosystem. This will ensure that all Partner States communities have access to broadband services based on a sustainable infrastructure of Information and Communications Technologies.

Currently access to broadband in the NCIP Partner States is limited due to low coverage, high cost of broadband services and devices, and low digital literacy among others. To improve this, the NCIP Partner States agreed to come together to undertake joint infrastructure projects. To ensure implementation of integration projects, The Heads of State directed that a regional broadband strategy be developed to guide the rollout of broadband. The strategy provides policy proposals aimed at enhancing infrastructure; reducing cost of end user devices; stimulating the development and uptake of relevant content; and driving digital awareness and literacy campaigns using an integrated approach that promotes universal digital inclusion.

The Partner States recognize the vital role of the public and private sectors in the provision of broadband infrastructure and services, and seek to reap the benefits of Public Private Partnerships (PPP) at various levels of the broadband ecosystem. Thus, this necessitates policy intervention to support private investments in the development of the ICT sector.

This broadband strategy seeks to address existing regional gaps in the provision of broadband through structural reforms in order to contribute to economic growth, social cohesion, productivity and innovation across all sectors of the economy.

1.2. Context

In order to realize the socioeconomic transformation and competitiveness of the region, efficient handling of knowledge and information is inevitable. Broadband provides conduits where knowledge is shared and therefore enables transformation across all sectors, between citizen, government and business.

This strategy is informed by the National Broadband strategies of the Partners States where emphasis is to utilize opportunities presented by the use of broadband. Partners States are



3



encouraged to dedicate a strong public policy towards utilization of broadband as a critical enabler for socio-economic development.

1.3. Vision

Realize social-economic growth and competitiveness of the region through broadband.

1.4. Definition of Broadband

1.4.1. Defining Broadband as a utility

According to the ITU, in the 21st century, affordable and ubiquitous broadband networks will be as critical to social and economic prosperity as transport, water and energy and can be viewed as a foundation for economic growth, job creation, and global competitiveness. Therefore broadband is no longer defined by data rates but by how it is used to improve the lives of people.

1.4.2. Defining Broadband for the region

Recommendation I.113 of the ITU Standardization Sector (ITU-T) defines broadband as a transmission capacity that is faster than primary rate ISDN, at 1.5 or 2.0 Mbps.

Consequently, broadband can be defined as connectivity that is always on and that delivers minimum of 3.0 Mbps to end users for high speed access to meet the increasing demand for internet applications and services.

From a regional perspective, broadband is a strategic infrastructure and services with the potential of boosting social and economic development.

1.4.3. Status of Broadband in the region

Kenya, Rwanda and Uganda have developed their National Broadband Strategies and are being implemented. To date, the Republic of South Sudan is in the process of developing its National Broadband strategy and at the same time implementing some fundamental projects.

Infrastructure

Member states have rolled out their National Backbone Infrastructure connecting all major towns and some border points. The region is served by four international sub-marines



cables through the port of Mombasa. In addition, there has been deployment of broadband networks across the region.

Connectivity

Member states have made tremendous effort to improve access to broadband. With the low connectivity in the region, partner states have an established Universal Access Fund to generate revenues to cater for marginalized and underserved areas.

Legal and regulatory framework

Most NCIP partner states have established ICT regulatory frameworks that guide the operations of the sector. These regulatory frameworks continue to be reviewed to provide for the changing market environment and technology. Major policy and regulatory measures have been taken to cater for regional integration, infrastructure sharing, cyber security and protection of ICT infrastructure.

1.5. Objectives of the Broadband Strategy

The primary objective of the policy is to facilitate the increase of accessibility, affordability, availability, reliability and usage of Broadband services throughout the region as a means to foster socio-economic development.

The strategy aims to:

1. Attain 100% of regional e-services and 70% of partner state services delivered on-line through a regional portal by 2020
2. Attain 70% of regional traffic through a regional exchange point(s) by 2018
3. Develop and implement regional BB network security framework by 2017
4. Attain 70% of BB device penetration by 2018
5. Connect 70% of schools, health care and government institutions by 2020
6. Have 50% of digital literate citizens by 2020
7. Attain 50% reduction of broadband end user cost by 2018 and at least 5% GNI by 2020

1.6. Benefits of Broadband

1.6.1. Socio-economic development and growth

There is a significant proven correlation between broadband access and economic growth and development. Ubiquitous broadband services lower the cost of communication and can



attract investment, thereby stimulating local economic environments and increasing economic growth. This has been emphasized by the World Bank study that a 10% increase in broadband penetration results in a 1, 38% growth in GDP. Below some benefits are highlighted:

Employment opportunities

Broadband networks have been shown to have a direct impact on employment. Therefore, an increase in broadband penetration would result in additional jobs.

Promotion of IT enabled services

The development of broadband infrastructure and ICT skills within the Region will directly impact the success of the IT enabled services

Business opportunities and investment competitiveness

Broadband will enhance both backward and forward linkages. Forward linkages will be enhanced through access to new regional and international markets. Businesses will also benefit from enhanced backward linkages, especially in the rural context, by gaining access to more suppliers and more competitive inputs subsequently increasing the competitiveness of their products. Further, a well-established ICT sector provides a conducive environment for business incubators. Business incubators nurture the development of entrepreneurial companies and those that are ICT-oriented would provide the region the opportunity to ascend to the level of a technological hub.

E-Services

Access to broadband in the region is an important enabler to the successful development and uptake of e-services across the region. The regional Broadband Strategy effectively addresses key related issues such as efficient backhaul, last mile broadband networks and end user devices to support efficient e-services.

Efficient frequency spectrum use

Frequency spectrum is a natural scarce resource that is required for broadband services. A coherent broadband strategy for the region would greatly derive maximum benefits from efficient utilization of frequency spectrum



Broadband for digital inclusion

Broadband provides a platform for equal opportunities to persons with special needs (PwDs, elderly, etc) in the region.

Universal access

Universal access to broadband services depends on the level of deployment of broadband infrastructures in the region. An optimal broadband infrastructure forms the basis of integrated cost effective technologies across the region.

Convergence of technologies

Convergence of technologies has resulted into optimization of broadband infrastructure by using a common infrastructure. Broadband connectivity will enhance delivery of multi-media content over a common medium.

National safety and security

Interoperable broadband networks within the country and the region shall support security agencies in the region to respond faster to emergencies and natural disasters to protect the public.

2. Key policy areas

2.1. Infrastructure and connectivity

Partner states prioritize the need to implement initiatives geared towards strategically positioning broadband infrastructure as a catalyst for social and economic growth and enhance universal access.

Partner states should, in collaboration with all stakeholders, support the development of regional broadband infrastructure to foster regional development with emphasis on the following;

2.1.1. Access to international connectivity

Accessibility to affordable and secure international backbone infrastructure is critical to supporting regional growth and providing international connectivity.



Partner states should work towards enabling regional access to quality, affordable, reliable and equitable international bandwidth capacity that meets the growing market demand and matches international standards.

2.1.2. Infrastructure sharing and open-access

In order to reduce infrastructure duplication and improve the optimization of broadband infrastructure, Partner states should ensure that broadband access and use are availed on shared platform(s) and open access principles and should encourage service based competition amongst players.

2.1.3. Interconnectivity

Partner states to facilitate interconnection of national networks in order to ensure cross border and international connectivity aimed at achieving ubiquitous broadband services in the region.

2.2. Content, applications and devices

Partner states should encourage the development of relevant content and applications aimed at increasing the utilization of broadband services and promoting a competitive local content industry with emphasis on the following;

2.2.1. Content and applications

Partner states should boost the development and uptake of e-services and content relevant to demand in order to accelerate economic development and create employment.

2.2.2. Access to end-user devices

Partner states together with stakeholder should establish incentives to allow the availability of affordable end-user devices to spur the development and demand for broadband services and applications.

2.2.3. ICT literacy and awareness

Partner states, together with stakeholders, should embark on training programmes and awareness campaigns about existing and emerging technologies to allow citizens to understand the use and benefits of broadband services and applications.



2.2.4. Cybersecurity

Partner states, together with stakeholders, should create an environment that enables delivery of secure and highly available broadband services.

2.1.5. Research and innovation

A sustainable, smart and inclusive growth in ICT can be realised through investment in efforts aimed at creating new as well as improving existing knowledge to promote resource efficiency while yielding relevant solutions for society and the market.

Partner states should play a key role in establishing the best possible environment in which best practices and promising thoughts are identified, shared, supported and nurtured in order to develop or improve user centred ICT solutions. This will amongst others promote efforts towards developing the manufacturing industry as well as ensure appropriate recycling and re-use of technology.

2.1.6. Capacity building

The issue of capacity building has become a major priority world-wide.

There is a need for the development of abilities in users and developers of e-services to critically evaluate, use, and contribute to development options and outcomes. This includes capacity in terms of resources, technical skills, knowledge content and institutional ability.

Partner states, together with stakeholders, should implement initiatives aimed at equipping end-users with the capacity needed to succeed as they embrace the adoption and use of technologies while developers and administrators should be provided with the requisite skills to enable them build and maintain e-services.

2.3. Legal and regulatory framework

A successful implementation of the regional Broadband Strategy requires the harmonization of the existing policy, legal and regulatory frameworks to address broadband interconnectivity and interoperability across the region. The regulatory regimes should compel for broadband infrastructure development and sharing, an open and competitive market structure that supports the uptake of e-services and foster the region integration agenda.



2.3.1. Spectrum management

Partner States to review and/or develop policies to enforce the harmonization and smart utilisation of the spectrum resources.

2.3.2. Technology neutrality and standards

Partner states to adopt technology neutrality, to enable implementation of a variety of successful global solutions that are conditionally efficient, interoperable, and affordable for socio-economic transformation.

Partner states to harmonize standards and compel for their adoption across the NC Partner States.

2.3.3. Fair competition

Partner states shall work to promote fair competition to ensure accessibility, affordability, quality of service and optimization of resources.

2.4. Financing and investment

The development of Broadband infrastructure requires intensive capital; the Governments of Partner States should take the lead to invest in broadband infrastructure in order to stimulate the private sector participation.

3. Implementation institutional framework

The deployment of broadband requires that various key players are coordinated and work together to deliver efficient broadband solutions across the region. It requires periodic assessments of broadband deployment, adoption, utilization; competition across service providers in the region; and how effectively broadband contributes in achieving regional socio-economic transformation.



The table below specifies the different roles and responsibilities of key stakeholders:

No	Entities	Roles and Responsibilities
1	Governments	<ul style="list-style-type: none"> ✓ To review policy, regulatory and legal framework. ✓ Coordination and supervision of strategy implementation. ✓ Identification and mobilisation of investors and development partners in the implementation of broadband strategy. ✓ Development and implementation of broadband infrastructure plans. ✓ Financing and investing in broadband infrastructure development. ✓ To establish or reform existing institution responsible for coordinating and oversight of the implementation of the broadband strategy.
2	ICT Regulatory Authorities	<ul style="list-style-type: none"> ✓ Regulators within the Partner States should align their regulations to ensure successful implementation of the strategy.
3	Standards compliance bodies.	<ul style="list-style-type: none"> ✓ To harmonise and enforce interoperability and conformity to agreed standards.
4	Private Sector	<ul style="list-style-type: none"> ✓ To harness the potential of the available opportunities to drive the implementation of the broadband strategy.

4. Implementation plan





No	Key Policy Area	Program	Activity	Timeline	Responsible	Estimated cost	Source of Funding
1.	Infrastructure and Connectivity	Broadband Infrastructure development and management plan	<ul style="list-style-type: none"> Develop a regional broadband infrastructure blueprint (map of all countries infra and required capacities) Engage infra developers (i.e. roads, pipelines etc.) to develop a common strategy for provision of broadband infrastructure. Develop common criteria and specifications for regional broadband infrastructure Identify connection points and add infrastructure needed Ensure security framework is adhered to in the development of the plan Develop and share national plans for connecting schools, health care, and government institutions Adopt a harmonized spectrum plan for the digital dividend Establish redundancy at the international gateway and 	Mid 2017	Government/PPP		Government/PPP






			landing stations and optimise cost					
2.		Design and develop regional IXP	<ul style="list-style-type: none"> • Each country establish at least 1 national IXP • Interconnect existing national IXPs • Develop standards and guidelines for interoperability of IXPs 	2017 (for South Sudan)	Government/PPP		Government/PPP	
3.		Develop regional Broadband Infrastructure resource plan	<ul style="list-style-type: none"> • Develop cost, funding, and management model • Implement plan 	2017	Government/PPP		Government/PPP	
4.	Content, Devices and Applications	Innovation Centres	<ul style="list-style-type: none"> • Government invest in incubation centres • Enhance research, innovation and development on ICTs 	2018	Government and Industry partners		Government and Industry partners	
			<ul style="list-style-type: none"> • Regional information management system (enable sharing of information regionally) 	2018	Government		Government	
			<ul style="list-style-type: none"> • Development of localised ICT applications and content 	2018	Industry and Government		Government and Industry partners	
			<ul style="list-style-type: none"> • Certification and accreditation of ICT applications 	2018	Government		Government/Industry	





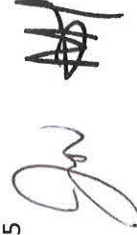

	<ul style="list-style-type: none"> Establish and enhance Intellectual Property laws Facilitate venture capitalists 	2018	Government	Government	Government
	<ul style="list-style-type: none"> Harmonize and promote local manufacturing and assembling of ICT equipment for the region Government partner with private sector to reduce cost of devices and increase adoption 	2018	Industry	Industry	Industry
Device affordability programs	<ul style="list-style-type: none"> Government partner with private sector to reduce cost of devices and increase adoption 	2017	Industry and Government	Industry and Government	Industry
	<ul style="list-style-type: none"> Tax waivers 	2017	Government	Government	Government
	<ul style="list-style-type: none"> Government subsidies to increase affordability 	2017	Government	Government	Government
	<ul style="list-style-type: none"> Facilitate specialized financing programs 	2017	Government/Industry	Government/Industry	Industry/Government
	<ul style="list-style-type: none"> Review of existing policies and regulatory frameworks: <ul style="list-style-type: none"> Licensing frameworks; Spectrum management; Device standardization; Interconnection; Cybersecurity; Universal Service and 	2017	ICT	ICT policymakers and Regulatory authorities	

5.

ep *AR* *JW* *HP*

6.	Policy and regulatory Framework	Development of additional harmonized policies	<p>Access Fund (to support content, infrastructure and connectivity, devices and applications);</p> <ul style="list-style-type: none"> ○ Consumer protection and competition principles; <ul style="list-style-type: none"> ● Development of additional regulatory measures including: <ul style="list-style-type: none"> ○ ICT infrastructure deployment; ○ Infrastructure sharing; ○ Secure critical ICT infrastructure; ○ E-services strategies ○ Mutual recognition of regional device type approval 	2018	ICT policymakers, Regulatory authorities and stakeholders		
7.		Promote and coordinate harmonized regional cybersecurity framework	<ul style="list-style-type: none"> ● Development of additional measures (non-exhaustive list): <ul style="list-style-type: none"> ○ Data protection; ○ Ensure data integrity; ○ Child online protection; ○ E-commerce; 	2017	Regulatory authorities and policymakers		(Recommend to end to the Cyber Security sub-cluster)





8.	Capacity Building and Awareness	ICT Technical expert training	<ul style="list-style-type: none"> Develop curricula that aligns skills to industry demands and global standards Integrate ICT curricula at all levels of education Train citizens on industry relevant skills Centre of Excellence for certification and accreditation (software, apps, skills) to help promote and monetize local content. Media campaigns 	2017	Industry and Government, MoE, MICT	Industry and Government
9.		Awareness Program	<ul style="list-style-type: none"> Develop a communication strategy to promote uptake, utilization and management of ICTs Enhance access to ICT facilities through One Stop Centres, Digital buses and mobile ICT centres, etc. 	2018	MoE, MICT	Government and development partners
				2018	MoE	Government and development partners
				2018	MICT	Government

Done on this 23rd day of April 2016



 16







Joe Mucheru, MBs

Cabinet Secretary

Ministry of Information, Communication and Technology

Republic of Kenya



Hon. Minister Philbert Nsengimana

Ministry of ICT and Youth

Republic of Rwanda





Hon. John Nasasira
Minister of ICT

Republic of Uganda



Hon. Rebecca Joshua Okwaci
Minister of Telecommunication and Postal Services
Republic of South Sudan