



REPUBLIC OF RWANDA

National Broadband Policy for Rwanda

Kigali, October 2013

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1 INTRODUCTION

1.1 BACKGROUND

Rwanda is committed to the transformation of its socio-economic landscape from an agrarian economy into a knowledge-based economy. In order to achieve this, it is imperative that all Rwandan communities have access to broadband services based on a sustainable infrastructure of Information and Communications Technologies.

Today one of the limiting factors to broadband rollout by operators, which has led to high costs of broadband access to end-users, is the duplicated cost of deployment of nationwide broadband infrastructure to rural and underserved areas. To rectify this market failure, GoR has opted to restructure the sector under an infrastructure-sharing regime by way of a wholesale-only, open-access network as a means to accelerate rollout of broadband network and services, and eliminate duplicated investments – thus availing affordable broadband for all. This Broadband Policy plays a critical role in the revision of Rwanda’s ICT regulatory framework, to facilitate the transition to a wholesale-only broadband regime.

Low broadband penetration can also be ascribed to the cost of devices and prevalence of digital illiteracy: by putting in place policy directives to guide initiatives to drive down the cost of end-user equipment; stimulate the development and uptake of relevant content; and driving aggressive digital awareness campaigns, GoR seeks to propose an integrated approach to promote digital inclusion.

Even though GoR recognizes the vital role of the public and private sectors in the provision of broadband infrastructure and services, Rwanda is yet to reap the benefits of thriving PPPs at various levels of the broadband ecosystem: this necessitates policy intervention to support calculated investment and articulate the government’s commitment to letting the private sector take the lead in the development of an Information society.

Rwanda recognizes broadband as the capability to deliver data and foster innovation, rather than a specific data transfer speed or a specific technology. By preparing this broadband policy, the

government of Rwanda seeks to address these gaps in the broadband market by putting forth structural reforms that will position broadband as a driver of economic growth, social cohesion, productivity and innovation across all sectors of the economy.

1.2 CONTEXT

Rwanda's leadership has recognized that in order to achieve its target to become a middle-income, knowledge-based economy, it is imperative that great importance is attached to the efficient handling of knowledge and information; in recognition of Rwanda's limited resources, ICT was identified as the driver to achieve this socio-economic transformation across all sectors, between citizen, government and business.

The Rwandan Government (GoR) has a dedicated and strong public policy towards the development of the country, utilizing ICT as one of the crosscutting enablers:

Vision 2020: Adopted in 2000, Vision 2020 gives the overall vision for Rwandan development and establishes a goal to move Rwanda from an agrarian economy to information-rich, service-oriented, knowledge-based economy by 2020. This vision is the driving force for policy development and outlines the role of ICT in leapfrogging key stages of industrialization.

NICI Plan: The National ICT strategy and plan outlines a four-phase approach to achieving Vision 2020 through ICT. Phase I (2000-2005) focused on creation of an enabling institutional, legal and regulatory environment for ICT development; Phase II (NICI I-2010) concentrated on development of critical national ICT infrastructure; Phase III (2011-2015) is focused on leveraging the existing infrastructure and environment to improve service delivery to Rwandans.

EDPRS Strategy: The Economic Development and Poverty Reduction Strategy guides Rwanda's medium-term plans to drive sustainable economic growth and fast poverty reduction under five thematic areas: Economic Transformation, Rural Development, Productivity and Youth Employment, and Accountable Governance.

Despite the rich public policy to achieve economic development, the potential of the ICT sector is yet to be fully exploited. This policy framework should provide the foundation required to ensure that initiatives by public and private within the ICT sector continue to enjoy consistent and undiminished support throughout the coming years, up to realization of the visions encompassed in the strategy documents above.

1.3 CURRENT STATUS OF BROADBAND

The implementation of different government projects, especially the projects implemented under the framework of NICI II have allowed Rwanda to achieve a considerable step towards the transformation of the country's economy towards becoming a knowledge-based economy.

1.3.1 INFRASTRUCTURE

Under the NICI II framework, GoR deployed a national high-speed fibre-optic backbone that spans all thirty districts and connects eleven border posts. In Kigali, the government has deployed the Kigali Metropolitan Network, which interconnects all government institutions. In addition, GoR has also constructed a state-of-the-art national data centre with the capability to leverage the capacity of cloud computing.

Rwanda also has access to 2.5Gbps international capacity through the SEACOM and TEAMS submarine cables.

In addition to government-funded infrastructure, private sector operators have contributed significantly to the development of telecommunications infrastructure nationwide.

1.3.2 CONNECTIVITY

The gaps in the Broadband market are reflected in the fact that even if mobile penetration is currently 60%, Internet market penetration of Rwanda stands at 8.5%.

Rwanda dedicated the Universal Access Fund to generate revenues for allocation to projects such as rural infrastructure deployment and the affordability of Internet access.

1.3.3 LEGAL AND REGULATORY FRAMEWORK

Rwanda also has a strong ICT regulatory framework and is in the process of passing a legislative bill for the sector:

The ICT bill that is yet to be passed (as of July 2013), will provide a legal and regulatory framework for the development of the sector and consolidation of ICT infrastructure;

Major policy and regulatory actions have so far been taken in the field of infrastructure sharing by operators with guidelines for siting and infrastructure sharing of telecommunication base station infrastructure and for fiber passive elements.

1.4 OBJECTIVES OF THE BROADBAND POLICY

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

The policy aims to:

1. Facilitate migration from infrastructure-based competition to service-based competition (based on quality of services and efficiency) in the Broadband market sector, in a timely manner;
2. Establish essential consumer safeguards and enhance the market structure through PPPs;
3. Boost Broadband coverage and speed and strengthen the Broadband access regime through open access to wholesale infrastructure;
4. Achieve affordability and adoption of Broadband by decreasing costs to end-users and supporting innovative forces that create the relevant content and applications that drive increased usage;
5. Align initiatives by various public and private institutions such that a clear institutional framework is in place to efficiently implement the outlined Broadband policy measures.

1.5 BENEFITS OF BROADBAND

Broadband as a tool to deliver data and foster innovation, will surely serve as one of the main drivers to achieving Rwanda's goal to become a knowledge-based economy. Studies have demonstrated that investments in increasing Broadband penetration generate positive returns with

significant economic growth and development; the World Bank has estimated that a 10% increase in Broadband penetration yields a 1.38% increase in GDP per capita growth for developing countries.

By viewing Broadband as a utility, GoR seeks to utilize Broadband to improve the life of every Rwandan household. Investment in Broadband in underserved areas of the country will play a role in bridging the digital divide between rural and urban areas thus creating social equity, and ensuring equal access and connectivity for all.

Some of the benefits of Broadband to Rwandans include:

1.5.1 SOCIAL BENEFITS

1.5.1.1 IMPROVED QUALITY AND ACCESS OF HEALTHCARE SERVICES

The enhanced communication between healthcare centers through Broadband will enable the use of advanced medical applications like telemedicine and remote diagnosis; in addition the electronic records systems will improve patient care.

1.5.1.2 IMPROVED GOVERNMENT SERVICE DELIVERY

Access to Broadband will greatly enhance the government's capability to communicate within government institutions, and with its citizens. The power of citizens to access service online for informational and transactional purposes will drive down the cost to government, of service delivery.

1.5.1.3 IMPROVED QUALITY OF EDUCATION

Broadband will improve the education system by enabling delivery of digital content for instruction, no matter their location; it will also facilitate the relationship between institutions. In addition, citizens will have ready access to information through research and team efforts, increasing their value in the job market.

1.5.1.4 ARTS, CULTURE AND ENTERTAINMENT

With increased access to Broadband, citizens will experience an evolution in the entertainment scene: this will play a role in improving and expanding channels of knowledge dissemination.

1.5.2 ECONOMIC DEVELOPMENT AND GROWTH:

1.5.2.1 REDUCED COST OF COMMUNICATIONS AND IMPROVED MARKETABILITY FOR INVESTMENT

Broadband creates an environment that stimulates economic growth due to the lower cost of communications that attracts businesses to all parts of the country, and the streamlined distribution of products and services to all corners of the nation. With the improved access to the rest of the country and the world through Broadband, all areas of the country will be able to increase their marketability, and therefore attract more investment.

1.5.2.2 INCREASED EMPLOYMENT AND GROWTH OF SMES

The use of Broadband towards economic activity plays a crucial role in unlocking the potential increase in employment. In line with this, SMEs gain a competitive edge from Broadband as it provides wider access to market in terms of supply and demand and facilitates in the assessment of market trends.

1.5.2.3 IMPROVED HOSPITALITY

The availability of high-speed, reliable and secure Broadband will stimulate the Tourism and Hospitality sectors, by attracting more visitors to the country drawing increased foreign exchange, and thus create a heavy impact on the economy.

2 THE NATIONAL BROADBAND POLICY FOR RWANDA

2.1 VISION

The vision of this Broadband policy is to ensure the transformation of Rwanda into an Information society driven by universal access to high speed, reliable, affordable and secure Broadband infrastructure and services by 2020.

2.2 DEFINING BROADBAND FOR RWANDA

2.2.1 THE GLOBAL ORIENTATION OF BROADBAND AS A UTILITY

According to the International Telecommunication Union (ITU), in the 21st century, affordable and ubiquitous Broadband networks will be as critical to social and economic prosperity as those for transport, water and power and can thus be viewed as a foundation for economic growth, job creation, global competitiveness and a better way of life. It is strongly believed that once Broadband networks are built, everything else will follow, such as:

- The ability to control and use energy more efficiently;
- The ability to manage healthcare to both urban and rural populations;
- The ability to deliver the best possible education to future generations;
- The ability to support research and innovation for development;
- The ability to streamline transport networks; and
- The ability to accelerate progress towards the Millennium Development Goals (MDGs).

It is now a global trend to define Broadband beyond the traditional notion of a specific type of network connectivity or minimum transmission speed, but rather in line with the new orientation as an ecosystem that includes its networks, the services that the networks carry, the applications they deliver, and users whose way of lives improve as a result of increased uptake and usage of Broadband services.

2.2.2 THE BROADBAND DEFINITION FOR RWANDA

As a result of the new orientation of Broadband as a **utility** and as a platform for ICT-led socio-economic development, Broadband is defined as an interconnected multi-layered ecosystem of

high-capacity communications networks, services, applications and users. The ecosystem includes the **networks** that support high-speed data communication and the **services** these networks provide. It also includes the **applications** provided by these services and the **users** who are increasingly creating applications and contents.

By defining Broadband in this way, to include both **the supply and demand sides** of the Rwandan market, it is time to rethink approaches to spur Broadband access and use. It is therefore critical to create both an enabling environment for supply-side growth in terms of access to networks and services and to facilitate demand for and adoption of Broadband.

On the supply side, Broadband is driven by technical requirements for **high speeds, high bandwidth capacity** as well as network **reliability** to meet the increasing end users' quality of experience expectations.

From a demand perspective, the key drivers that influence the definition of Broadband for Rwanda are Rwanda's Vision 2020, as well as the National Information and Communication Infrastructure (NICI) plans (*see Section 1.2*).

Consequently, the Broadband definition for Rwanda is as follows:

“A network connection that is always on, available at home, at work and on the move, that delivers progressively higher bandwidths that are capable of supporting innovative and interactive content and services, as to enhance the user-experience.”

For purposes of monitoring the progress, the regulatory authority shall publish, on an annual basis, technical characteristics that take cognizance of relevant technological advancements for a network connection to be deemed a Broadband service.

2.3 KEY POLICY AREAS

2.3.1 INFRASTRUCTURE AND CONNECTIVITY

The government prioritizes the need to implement the interventions aimed at strategic positioning of Broadband infrastructure as a catalyst for social and economic growth and enhance universal access.

To this end, government will continue to encourage and support investment in Broadband infrastructure thereby increasing the uptake and usage of Broadband services for the following key areas:

2.3.1.1 ACCESS TO INTERNATIONAL CONNECTIVITY

Access to reliable, affordable and secure international backbone infrastructure is critical for supporting the growth of the Rwanda economy and providing international connectivity. Alternative routes will be explored to ensure multiple backhaul interconnecting routes via other neighboring countries including the use of Satellite links for international backhaul.

All market players, in the provision of international bandwidth capacity, shall collaborate to ensure adequate redundancy and sufficient international bandwidth capacity to meet growing demand as more individuals and enterprises would be connected to the Broadband grid.

The Government shall ensure transparent, fair and non-discriminatory access to international bandwidth capacity to all service providers.

2.3.1.2 ACCESS TO NATIONAL BACKBONE

In the current telecommunications value chain, operators undertake all the roles from network deployment to service delivery, which has resulted in limited access and low uptake of Broadband services.

To increase uptake, the government will restructure the Broadband telecommunications infrastructure through functional separation of Broadband networks and services in the supply chain.

To this end, the government shall introduce a wholesale-only, open-access regime to allow innovation and service-based competition. This restructuring of the Broadband telecommunications infrastructure will deliver outcomes that are in the interests of consumers, business and the economy as a whole.

2.3.1.3 LAST MILE CONNECTIVITY

Rwanda recognizes Broadband as a utility that should be made available to all parts of the country. In a bid to promote the extension of last mile technologies, the rollout of Broadband Network will aim at extending FTTx as well as wireless Broadband to serve businesses, colleges, schools, health centres, government establishments and agencies across the nation.

The ICT authority shall develop appropriate guidelines for the implementation of extension of last mile technologies.

2.3.1.4 INFRASTRUCTURE-SHARING/OPEN-ACCESS

Deploying Broadband backbone infrastructure has proven to be capital intensive and as such, investment decisions tend to be based on potential Return on Investments (ROI).

In order to facilitate service-based competition, the mobile broadband infrastructure operated by the wholesale-only provider will allow access to retail providers, including current players, as well as Mobile Virtual Network Operators, on fair, transparent and non-discriminatory basis.

National and private-owned fiber infrastructure shall be open-access to all players with regards to managed transmission services (backhaul) as well as dark fiber access.

The ICT regulatory authority shall develop regulatory guidelines to address:

- The mechanisms by which price and non-price terms of access will be determined; and
- The principles upon which access prices for using the wholesale network will be determined

To facilitate accelerated Broadband infrastructure rollout in the urban, rural and under-served areas, guidelines shall be put in place by the ICT regulatory authority in order, to eliminate unnecessary infrastructure duplication that negatively affects retail prices.

2.3.1.5 INTERCONNECTION

An interconnection framework shall be put in place by the ICT regulatory authority to ensure that the functional separation between the wholesale-only provider and retail providers does not affect affordability and quality of services.

2.3.1.6 MARKET STRUCTURE

In order to address the current gaps in the Broadband market, and to ensure that the targets for Vision 2020 are met, GoR has opted to reform the market structure:

For the provision of 4G LTE (and subsequent mobile broadband technologies) network services, the mobile wireless broadband market shall allow only one wholesale-only provider for 4G LTE infrastructure (and subsequent mobile broadband technologies), with a retail open-access model for new and existing retail providers.

The fixed wireless broadband market shall allow only the existing Internet Service Providers (ISPs), whereas the FTTx market shall be open to new and existing providers.

The ICT regulatory authority shall develop regulatory guidelines to address the nature of service provided by all the operators within the market framework.

2.3.2 CONTENT, APPLICATIONS AND DEVICES

To achieve a knowledge-based economy using ICT as a tool for development individuals, households and businesses should continuously be exposed to the use and benefits of ICTs and particularly Broadband services.

The increase of uptake and usage of Broadband services will require relevant Authorities to develop strategies to address the following:

- Development of relevant Content and Applications
- Access to end-user equipment
- ICT Literacy and Awareness

2.3.2.1 CONTENT AND APPLICATIONS

The development, availability and use of relevant digital content will foster adoption of Broadband services and enable a competitive local content industry, playing a critical role in the

socio-economic development of the country. The content providers and citizens should be encouraged to develop content in local language so as to encourage uptake and employment.

The government shall devise strategies to provide, amongst others, e-health, e-education and e-government services to all citizens.

In the education sector, the provision of Broadband services shall assist in strengthening instruction and learning creating equitable access to online education resources and strengthening administrative process with the aim of improving the quality of education in the country.

In the health sector, the provision of the Broadband services shall create more online access to quality health services, improve health data capturing and use as well as the dissemination of such information.

Government-to-Government (G2G) and Government-to-Citizens (G2C) service delivery shall be streamlined by the use of Broadband services.

Research institutions, universities and innovation centres, as well as the private sector, will be encouraged to spearhead the development of innovative and local content and applications. ,

2.3.2.2 ACCESS TO END-USER EQUIPMENT

The deployment of backbone infrastructure will require affordable end-user equipment such as mobile devices, computing devices and digital set-top-boxes that connect to the Broadband services provider networks thereby enabling online access.

High tax duties on this equipment contribute to high cost of the equipment, making them unaffordable to the majority of people. Relevant Authorities should setup incentives to allow the availability of affordable end-user equipment.

The availability of affordable end-user equipment, as well as providing support to consumers is fundamental to spur the demand for Broadband services in Rwanda.

2.3.2.3 ICT LITERACY AND AWARENESS

Digital literacy to allow citizens to understand the use and benefits of Broadband services for their daily needs is critical for the increase of uptake and usage of Broadband services.

To build confidence in the use of Broadband services and increase uptake, the government shall conduct campaigns to educate and create awareness regarding the benefits of Broadband.

2.3.2.4 CYBERSECURITY

Security of Broadband services and applications is addressed in the National Cybersecurity Policy.

2.3.3 LEGAL AND REGULATORY ENVIRONMENT

For the successful implementation of this Broadband Policy, Rwanda's existing Telecommunications legislations will be reviewed and new ones developed to create conducive policy frameworks and laws that are applicable to Broadband service delivery. These legislations shall define the framework for the delivery of Broadband services by the Wholesale-only operator by ensuring non-discrimination, transparency and competitive Open Access. The required legislations must address the following key points:

2.3.3.1 SPECTRUM MANAGEMENT

The different technologies that deliver Broadband capacity require larger blocks of frequency to be able to deliver higher data throughput rates.

In order to attain a high Broadband throughput, the identified frequency bands for Broadband service delivery shall not be fragmented into many assignments but assigned to a single Wholesale-only operator to provide Broadband services on open access basis.

The frequency spectrum released by Analogue Terrestrial Television, in the 700 MHz and 800 MHz shall be availed to the Broadband Wholesale-only operator to promote the availability of Broadband services especially in rural and remote areas.

The ICT authority shall identify and re-farm frequency bands to allow efficient deployment of technologies with high data throughput capabilities.

2.3.3.2 TECHNOLOGY NEUTRALITY

Rwanda recognizes that products that are deployed en masse globally are designed to exacting international standards and with architectures that are adapted to match the dominant market requirements of a supplier.

Rwanda has adopted a technology neutral licensing regime, to enable implementation of a variety of successful global solutions that are appropriate, available and affordable.

The ICT authority shall ensure that the licensing framework and regulations observe the technology neutrality principle and enforce efficient deployment of Broadband networks.

2.3.3.3 LICENSING FRAMEWORK

The ICT authority shall review and update the licensing framework to reflect developments in the new Broadband delivery value chain. This licensing framework shall ensure that there is a clear separation between the Wholesale and Retail of the Broadband capacity.

The ICT authority shall be responsible to ensure that the pricing of the Broadband access at wholesale level is controlled using the most appropriate pricing methodologies.

2.3.3.4 STANDARDS

In an open access infrastructure, multiple operators, service providers and stakeholders are involved. This practice makes the end-to-end network more complex.

In order to ensure compatibility and interoperability between different players in the Broadband service delivery value chain, the ICT authority shall issue guidelines that are based on national and international standards.

2.3.3.5 COMPETITION

The Government of Rwanda recognizes that service-based competition will lead to affordability of Broadband services. The Government shall license a single operator to deploy and operate a Wholesale-only network. Access to the Wholesale network by Retail service providers shall be

on an open-access and non-discriminatory basis to ensure competition and innovation in the Broadband service delivery.

The ICT authority shall also review existing regulations and guidelines to ensure fair competition in the provision of Broadband services.

2.3.4 FINANCING AND INVESTMENT

The deployment of Broadband infrastructure is capital intensive: private investors are not incentivized to deploy infrastructure in rural and underserved areas that are not deemed commercially viable.

To achieve the government objective of extending Broadband coverage to all parts of the country, the government took the first step heavily investing in the deployment of initial Broadband infrastructure; the presence of infrastructure lowers private investment risks and increases incentives for private sector to shift focus to service delivery. For the sustainability of the Broadband market, GoR will endeavour to stimulate private sector investments within the ICT sector.

2.3.4.1 UNIVERSAL SERVICE

Access to Broadband services shall be delivered countrywide as a universal service.

For Broadband to effectively contribute to the social and economic development of the country, the Government shall devise mechanisms to support Broadband utilization uptake and development of content and applications relevant to Rwanda.

The utilization of the Universal Service Fund shall be reviewed and re-aligned to facilitate Broadband service usage and uptake.

3 INSTITUTIONAL FRAMEWORK

3.1 INSTITUTIONAL FRAMEWORK FOR IMPLEMENTATION

The deployment of Broadband requires that various key players are coordinated and work together to deliver an efficient Broadband solution. It requires periodic assessments of Broadband deployment, adoption and utilization; competition across service providers; and how effectively Broadband contributes in achieving national development programs.

Recognizing the important role that the private sector plays in the establishment of Broadband infrastructure and services, a joint Government/Private Sector Steering Committee will be established to oversee the implementation of Broadband development activities. This committee shall be co-chaired by the Ministry responsible for ICT, and the Private Sector Federation ICT Chamber.

It is necessary to distinguish the roles of the Government, the 4G LTE wholesale-only provider and the retail service providers:

INSTITUTION ROLE SPECIFICATIONS

3.1.1 GOVERNMENT

GoR will promote access to rural areas and bridging of the digital divide by investing, in partnership with the private sector, in the provisioning of nationwide Broadband infrastructure towards increasing access to and improving affordability of Broadband services;

GoR will foster the development of local content relevant to socio-economic development, and take the lead in Broadband literacy and awareness to support uptake as well as usage of Broadband services specifically in rural areas;

In order to effectively utilize existing Broadband infrastructure in a complementary manner, GoR will ensure that all Broadband assets developed using public funds will be consolidated and managed by a single entity charged with management of the shared broadband infrastructure.

3.1.2 THE ICT REGULATORY AUTHORITY

The ICT regulatory will ensure the availability of different types of licenses necessary for the achievement of the Broadband vision including licenses for wholesale-only and retail broadband service provision;

The ICT regulatory will regulate the wholesale prices and monitor the fairness of retail prices to ensure affordability of Broadband services to consumers;

The ICT regulatory will facilitate the monitoring and measurement of Broadband penetration in Rwanda and be responsible for the reporting thereof;

The ICT regulatory authority shall conduct periodic survey on the current status of Broadband in Rwanda as well as the relevant market players in the industry. The ICT regulatory authority will develop new licensing framework to reflect the changes that this policy institutes;

The ICT regulatory authority will develop the measurement criteria of Broadband penetration. In partnership with the private sector, Government shall make necessary investment for the establishment of a Wholesale only operator;

The ICT regulatory authority shall advise key stakeholders on emerging and new affordable technologies to inform annual action plans.

The ICT regulatory authority shall, where appropriate, collaborate with REMA to ensure that the formulation and implementation of policies follow the Strategic Environmental Assessment (SEA) procedures and guidelines.

3.1.3 RWANDA BUREAU OF STANDARDS

Rwanda bureau of standards will work with the ICT regulatory authority to ensure that devices imported into the country meet technical and quality standards, as specified by RBS.

3.1.4 4G LTE WHOLESALE-ONLY PROVIDER

The Wholesale-only provider shall manage the Broadband infrastructure for the provisioning of nationwide Broadband;

The wholesale-only provider shall be responsible for providing Broadband services at

wholesale price to private service providers licensed by the ICT authority who will be responsible for serving the retail market;

The wholesale-only provider shall facilitate the transportation of Broadband services from retail operators to the intended end-users;

The wholesale-only provider shall offer guaranteed performance and Service Level Agreements that are transparent, neutral, fair and non-discriminatory;

The wholesale-only provider shall ensure non-discriminatory and fair access, as well as quality of service, to all wholesale customers.

3.1.5 RETAIL SERVICE PROVIDERS

The role of retail service providers as included here, does not provide an exhaustive list of functions but merely seeks to establish the general concept;

Retail service providers will ensure they have appropriate licenses for their operations;

Retail service providers will adhere to the provision of Broadband as defined in this policy;

Retail providers shall manage the customers, undertake billing, facilitate roaming, provide call center support, and network monitoring etcetera.

The retail service providers will invest in the development of local content and broadband awareness to support uptake and usage of Broadband.

4 IMPLEMENTATION PLAN

The table overleaf presents details of the proposed Action Plan to initiate the implementation of an Broadband Policy in Rwanda. The table specifies activities, targets, responsible institution, the estimated timing of the activity and estimated costs. Short-term measures are proposed to take place during a 24 month period, while intermediate and long- term measures are planned for the coming 5 years. The Action plan is proposed to be updated annually, revisions to be based on the actual progress made every year.

The timing of the input has been based on the assumption that the preparation for the implementation will start immediately upon approval of the policy.

The cost estimates are based on the experience the ministry has gained from running similar programs and negotiations that have been held with potential investment partners in the Public Private Partnership of the Wholesale-Only joint venture. Most of these costs will be covered by the operational budget of the government and the normal duties of its staff.

Monitoring of the progress of the activities will be made against performance indicators and preferably via monitoring by the ICT regulator body. For most of the targets indicated in the table overleaf the performance indicators are self-explanatory, e.g. license issued, new licensing framework developed, communication program developed and so forth.

| No | Activity | Timeline | Responsible | Estimated cost |
|----|---|---|-------------|-------------------------------|
| 1. | Creation of PPP (JV) wholesale company <ul style="list-style-type: none"> • JV and share holding negotiation and agreement • Business plan development • Company registration • Appointment of Company management and board of directors | Ongoing | RDB, MYICT | Existing operational expenses |
| 2. | Review of the current legal and regulatory framework <ul style="list-style-type: none"> • Develop the whole-sale license framework • Negotiate the terms and conditions of the whole-sale license • Develop and publish detail regulatory guidelines, and pricing model • Review the existing licenses issued to align them with the broadband policy • Publish on an annual basis, technical characteristics for a network connection to be deemed a Broadband service • Review guidelines for the implementation of extension of last mile technologies. • Issue guidelines to ensure all Broadband assets developed using public funds will be consolidated and managed by a single entity charged with management of the shared broadband infrastructure | Ongoing Ongoing November 2013 December 2013 January of every year January 2014 Feb 2014 | RURA | Existing operational expenses |

| | | | | |
|-----|---|---|---|----------------------|
| 3. | Issuance of the whole-sale license | Ongoing | MYICT, RURA | Operational expenses |
| 4. | Review frequency bands to allow efficient deployment of technologies | October 2013 | RURA | N/A |
| 5. | Network Rollout (construction and operational): <ul style="list-style-type: none"> • Phase 1-40 % coverage • Phase 2-60% coverage • Phase 3 -85% coverage • Phase 4- 95% coverage | June 2014 March 2015 June 2016 June 2017 | Whole-sale company | 200 Million USD |
| 6. | Develop and implement a digital literacy and awareness program to take maximum advantage of broadband services | 3Yrs program | MYICT, RDB, MINEDUC, HLI, Whole-sale company and retail service providers | 800 million Frw |
| 7. | Establish a program to connect all public entities in rural (local administration entities, schools hospitals and health centers | June 2015 | MINEDUC, MINASANTE, MINALOC, MINECOFIN | Annual |
| 8. | Program to promote broadband services to SMEs, hospitality entities and other private organisations | June 2015 | MYICT, PSF, RDB | 300 Million Frw |
| 9. | Establish a program to provide affordable end user equipment to low income citizens and relevant Content and Applications | June 2014 | RURA, MYICT, BRD, PSF | 1 Billion Frw |
| 10. | Government Infrastructure consolidation and management framework | | | |
| 11. | Monitoring and Evaluation Review the progress of broadband policy implementation | | Steering committee | Operational expenses |