



Review of the Regulatory, Policy and Competitive Framework of the ICT Sector In Rwanda

Strengthening Legal and Regulatory ICT Framework and Governmental Institutions



Section 1: Inception Report

By

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Glossary of Terms and Abbreviations

TERM	FURTHER EXPLANATION
EAB	East African Backbone
EASSY	East African Submarine Cable System
GOR	Government of Rwanda
ICT	Information Communication Technologies
KTH	Royal Institute of Technology in Sweden
MININFRA	Ministry of Infrastructure of Rwanda
NICI II	National Information Communications Infrastructure Plan 2
NITC	National Information Technology Commission
OPGW	Optical Ground Wire
PIKE	Predominantly Information and Knowledge Economy
PSCBP	Public Sector Capacity Building Project
PSTN	Public Switched Telephone Network
RB	Regulatory Board (of RURA)
RFS	Radio Frequency Spectrum
RITA	Rwanda Information Technology Authority
RURA	Rwanda Utilities Regulatory Authority
SIDA	Swedish International Development and cooperation Agency
UAF	Universal Access Fund
WB	World Bank

Appreciation

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Summary of Recommendations

RECOMMENDATIONS 1.

RECOMMENDATION	REASONING
<p>Underlying Principles</p> <p>Policies should be focused on ensuring: (1) widespread availability of ICT services, (2) cost effective delivery of services, and (3) offering of high quality products.</p>	<p>While these principles may be taken for granted in the policy documents, the importance of cost effective communications as a development tool is easily lost sight of in the technical analysis.</p>

RECOMMENDATIONS 2.

RECOMMENDATION	REASONING
<p>Close Cooperation</p> <p>There should be ongoing close cooperation and coordination between the various stakeholders for the implementation of NICI II and e-Rwanda.</p>	<p>Many of the success factors in e-Rwanda are dependent upon success by agencies other than RITA. Ongoing close cooperation is essential for project success</p>

RECOMMENDATIONS 3.

RECOMMENDATION	REASONING
<p>Focus on Implementation of the Law</p> <p>Law No 44/201 is able to meet all foreseeable needs in terms of telecommunications regulation and the focus of all agencies should be the implementation of the provisions of the existing law.</p>	<p>In three to five years it will be appropriate to review the law, but until then, the current law is quite adequate to meet all foreseeable needs for telecommunications regulation. Implementation capacity is the biggest single requirement.</p>
<p>Policy Review</p> <p>A number of e-Commerce provisions, mentioned briefly in the current law will soon need elaboration and this would be a highly relevant policy focus for MININFRA's policy work.</p>	<p>Drafting the law should be the "icing on the cake," when all policy decisions of substance have already been resolved. Substantial work is required in the areas of e-Commerce.</p>

RECOMMENDATIONS 4.

RECOMMENDATION	REASONING
<p>Focus on Implementation</p> <p>MINIFRA should focus on ensuring that RURA has the resources it needs for the implementation of the regulatory aspects of e-Rwanda and on enhancing the resources and regulatory capacity of RURA.</p>	<p>In three to five years it will be appropriate to review the telecommunications law but currently all immediately required powers are in the current law. The missing ingredient is effective implementation capacity in RURA.</p>

RECOMMENDATIONS 5.

RECOMMENDATION	REASONING
<p>High Priorities</p> <p>The items listed in paragraph 7.4.3 are critical issues that RURA should be attending to; they should be included in the high priority list for assistance delivered under e-Rwanda and the focus of the assistance delivered should be not less than two years.</p>	<p>The relevant paragraph has outlined the need for assistance in these areas. The primary requirements are: more people and expertise transfer.</p>
<p>Cost Effective Implementation</p> <p>RURA should make greater use of its judicial status and management autonomy to solicit submissions from the private sector and other stakeholders on discharging its core functions in a way that will advance NICI II and e-Rwanda.</p>	<p>All immediately required powers are in the current law. The missing ingredient is effective implementation. This recommendation suggests that RURA should seek the views of the private sector on how best to implement the current law.</p>

RECOMMENDATIONS 6.

RECOMMENDATION	REASONING
<p>Facilities Sharing</p> <p>Regulatory components of e-Rwanda should focus on facilities sharing, efficient and cost effective interconnection, effective regulation, clear process and procedures and removing perceived discrimination against local firms.</p>	<p>Rwanda is a developing country with limited supplies of investment capital, limited borrowing capacity and limited ability to attract capital. It is essential that its capital investment is efficient and infrastructure facilities are used as close as possible to their capacity.</p>
<p>Electrogaz – Wholesale Only</p> <p>Intensive consideration should be given to the effective operation of the Electrogaz fibre optic cables on a wholesale only basis with open access to retail service providers and a common tariff structure.</p>	<p>The operation of Electrogaz fibre on a wholesale only basis with open access to retail service providers and a common tariff structure will facilitate the entry of new retail competitors and ensure efficient use of the available infrastructure.</p>
<p>Electrogaz – Enduring Commitment</p> <p>There should be strong political and legislative commitments to ensuring that the fibre optic cables owned by Electrogaz are by law confined to wholesale only operation and will never be allowed to enter the retail market.</p>	<p>Wholesale only operation of Electrogaz cables will have big benefits for Rwanda. However, private sector parties will need cast iron guarantees that Electrogaz will not enter the retail market if they are to base their businesses on using Electrogaz infrastructure.</p>

RECOMMENDATIONS 7.

RECOMMENDATION	REASONING
<p>Potential for Anti-Competitive Conduct</p> <p>RURA should be aware of the potential for anti-competitive conduct to develop in a duopoly situation and should put in place effective monitoring systems.</p>	<p>Duopolies are not bad per-se, but if they are used for anti-competitive purposes they are harmful.</p>

RECOMMENDATION	REASONING
<p>Commitment to Competition</p> <p>The GOR should acknowledge the commitment to competition by the two principal players and recognise the potential of the Electrogaz fibre capacity to facilitate entry of new competitors.</p>	<p>The GOR should take the major players at their word and work with them to develop a competitive, regulatory environment.</p>
<p>Rwanda ICT Association</p> <p>The commitment of the private sector to work with the government through the Rwanda ICT Association to develop self policing regulatory tools should be accepted as a positive development.</p>	<p>Self regulation has the potential facilitate new entry to the sector, relive the regulatory burden on RURA and provide the GOR with resources and input into regulatory policy making.</p>

RECOMMENDATIONS 8.

RECOMMENDATION	REASONING
<p>ISP Regulation</p> <p>Regulation of ISPs should be confined to registration and registration should be cheap, uncomplicated and speedy.</p>	<p>There is little or no need for ISP regulation</p>

RECOMMENDATIONS 9.

RECOMMENDATION	REASONING
<p>RFS</p> <p>The GOR should be aware of the potential anti-competitive effect of allocation of large blocks of RFS to one or two players, thereby inhibiting the entry of new competitors.</p>	<p>Incumbents can claim a property right over the spectrum they have been allocated and</p>
<p>Leasing Spectrum</p> <p>Whatever allocation method is chosen there should be few if any limits on leasing, subleasing or transferring spectrum in order that the most economic users of spectrum can obtain access.</p>	<p>If RFS is transferable there is the potential for the spectrum to move into the hands of the most economically effective user.</p>

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1. Background to Project

Because it recognizes the importance of ICT as a catalyst to achieving development goals, the GOR requested from the World Bank (WB) support for an ICT project: **e-Rwanda**.

The Project is aimed at successful implementation of the National Information Communications Infrastructure Plan 2 (NICI II) and builds on the ICT component of the WB Supported Public Sector Capacity Building Project. E-Rwanda will strengthen efforts by the GOR and the donor community to speed up and improve the quality of electronic communications development in Rwanda.

2. Objectives

This assignment is aimed at the infrastructure and regulatory aspects of the e-Rwanda Project. It will promote the e-Rwanda objectives by providing assistance to the Rwanda Information Technology Authority (RITA), the Ministry of Infrastructure (MININFRA) and Rwanda Utilities Regulatory Authority (RURA).

This project will help implement e-Rwanda by giving special support to RURA in the development of an institutional strengthening plan that will provide technical assistance to review and enforce the legal and regulatory framework and provide institutional development assistance to RURA by strengthening its technical capacity in the monitoring of operators obligations and its tasks related to the UAF. There are two main subcomponents as they affect RURA:

- (i) Reviewing legal and regulatory framework and promoting e-legislation, to complement ongoing reforms of the telecommunications to create an overall facilitating and enabling environment.
- (ii) Priority Regulatory Issues, to strengthen the legal and regulatory framework and to empower the RURA management and operation skills in the following areas:
 - Propositions and recommendations of refinements to create an overall enabling environment,
 - Implementation of a work program to enforce the specific duties of RURA concerning telecommunications (enforcement of operators' obligations, effective management of the UAF).

These subcomponents aim to identify regulatory gaps (e.g. local loop unbundling, portability, national roaming) and regulatory/policy bottlenecks and propose recommendations on the implementation agenda to establish an enabling environment conducive to the development of the local ICT industry.

3. Scope of Work

The scope of work is outlined in Appendix 1. The Assignment comprises two phases:

Phase 1: Review the legal and regulatory framework currently in place in Rwanda for ICT sector and formulate a precise diagnostic identifying regulatory gaps and bottlenecks:

Phase 2: Design and recommend a detailed implementation agenda finalizing and developing the relevant policies, legislation, regulations and procedures (telecommunications/ broadcasting/ Postal/ e-legislation)

The first two weeks of the assignment comprised a collection phase, where the necessary data is identified and collected. The following weeks will comprise a proposal phase when ideas to address the problems that have been identified are proposed and tested on the government and private sector institutions.

4. Inception Report

This inception report describes the summary of the methodology to be used for carrying out the assignment. The Approach and Methodology was outlined in the proposal to the GOR and as developed into a Work Plan, is attached as Appendix 2. It will also outline background issues that must underpin the whole assignment.

Essentially the Work Plan sees the Inception Report as a precursor. It is designed to stimulate a dialogue in the ICT Sector in Rwanda with a view to drawing on the skills and experience of the local people. It will seek their input into the work-plan and a face to face dialogue arising from orientation meetings with political leadership, officials, relevant private sector stakeholders and other interested parties. It also aims to obtain and analyse relevant material, additional to that already available.

5. Underlying Principles

Because Telecommunications Regulation is an important subject, it is easy to overlook the fact that the principal regulator of economic activity is competition. The goal of telecommunications regulation is to induce firms involved in the provision of telecommunications facilities, and/or services to serve the public interest (as defined by their government), where there is insufficient competition.

5.1 Policy

While many different views may be held as to what “the public interest” should be, this assignment assumes that the public interest is best served when the regulator implements government policy to ensure that the ICT sector is run to meet consumers’ requirements for cost effective, high quality services available widely across Rwanda, in an economically efficient and financially sustainable fashion.

5.2 Fundamental Conditions

Fundamental conditions for an economy to function include: peace, stability, the rule of law and respect for property rights. In developing countries an operating licence is an important form of property right. However, competition among firms regulates many aspects of market behaviour, because in a competitive environment transactions only take place if both parties believe they will be better off.

- competition requires that there are many firms in the market (or where an activity's cost structure cannot sustain enough firms to maintain proper competition, regulation may be called for to ensure that costs and prices are reduced towards efficient levels, and that appropriate standards of service are maintained,
- firms must be free to enter or exit a competitive market, so that better technologies, managers and business models to replace those that fail to perform adequately, competition also ensures that where incumbent firms are making excessive profits, new entrants can step in to provide better service and/or lower prices.
- for competition to function there must be adequate information flows so that consumers can make informed choices and potential entrants and incumbents can identify commercial opportunities to offer better serve customers.

- competition also requires that firms have clear commercial objectives, to drive firms to cut costs, set prices below their competitors' and strive to meet consumer demands.

Regulators can foster competition by promoting transparency. Transparency helps subscribers to hold telecom managers responsible for meeting consumers' objectives. Transparency therefore shifts the focus to consumers' objectives from those of managers towards consumers. With these points in mind the initial findings are now assessed:

6. Findings

A number of important findings have been identified and these will need to be addressed during the assignment in order to produce useful recommendations for change.

6.1 Policy

The GOR has articulated a clear policy set out in Appendix 3. ICT is seen as a tool enabling Rwanda to overcome many of the difficulties that have held it back in the past. The policy principle is that if Rwanda is to take full advantage of the opportunities of the information age and develop a vibrant multi-sectoral information and knowledge economy, it should not as a nation just consume of ICT goods and services, but should also produce and develop the technology.

However, Table 1 provides a reality check. Although the statistics are not up to date, in both fixed and mobile lines and in internet usage, Rwanda is below some countries that are significantly poorer. For example, Malawi had 25 lines per 1000, compared with Rwanda's 18, and Eritrea and Guinea Bissau had more internet users.

Table 1: Statistics for Incomes and ICT Usage

Income Per Head		Fixed and Mobile Phones per 1000 Population			Internet Users per 1000 population		
Country	Most Recent US\$	Country	Fix and Mob	Latest Year	Country	Internet Users	Latest Year
Burundi	90	Liberia	2.7	2000	DRC	0.1	2000
Congo, Dem Rep-DRC	110	Ethiopia	7.8	2003	Liberia	0.2	2000
Ethiopia	110	Guinea-Bissau	8.1	2000	Ethiopia	1.6	
Liberia	120	Burundi	12.5	2003	Sierra Leone	1.9	
Guinea-Bissau	160	Niger	13.0		Niger	2.0	
Malawi	160	Eritrea	14.0		CAR	2.3	
Eritrea	190	Chad	14.4		Burundi	3.4	
Niger	210	CAR	17.6		Malawi	3.7	
Rwanda	210	Rwanda	18.0		Rwanda	4.0	
Sierra Leone	210	Madagascar	19.5	2003	Madagascar	5.0	
Chad	250	Malawi	25.0		Chad	6.4	
Uganda	250	Mozambique	27.0	2003	Mozambique	7.1	
Mozambique	270	Sierra Leone	27.2		Uganda	7.2	
Gambia, The	280	Gambia, The	30.0	2002	Tanzania	8.9	
Madagascar	290	Tanzania	32.2	2003	Eritrea	12.0	
CAR	310	DRC	37.0		Guinea-Bissau	17.0	
Togo	310	Uganda	44.4		Gambia, The	33.0	
Tanzania	320	Togo	48.1	2003	Togo	37.0	

Source: World Bank Internet Database 2006

Policy implementation will be achieved through the four 5 Year National Information Communication Infrastructure (NICI) Plans. The 1st, 2nd and 3rd NICI Plans lay emphasis on the exploitation and utilization of ICT products and services to support the delivery of

government services and the activities of various sectors of the economy. The 4th NICI will lay emphasis on the production, development and delivery of ICT products and services for export.

6.2 Second NICI Plan

The Second NICI plan is based on a Vision with three components: (1) "To improve the quality of life of the people of Rwanda by enriching their social, economic and cultural well-being through the modernization of the economy and society," (2) "developing Rwanda into a middle income country by Year 2020," and (3) modernize the Rwandan economy and society using information and communication technologies (ICTs) as an engine for accelerated development, economic growth, national prosperity and global competitiveness.

- eight strategies are articulated to implement the mission and sub-missions of the policy:
 - transform Rwanda into an IT literate nation,
 - encourage the deployment and utilization of ICTs within the economy and society,
 - improve the efficiency of the Civil and Public Service,
 - improve the information and communications infrastructure of Rwanda,
 - transform education using ICTs to improve accessibility, quality and relevance,
 - improve human resource capacity to meet changing needs of the Rwanda economy.
 - develop the laws, institutions and regulations to support wide use of ICTs,
 - facilitate national reconciliation and reintegration through ICT interaction.
- the expected quantifiable results from these strategies are that there will be:
 - a progressive reduction in the contribution of agriculture to the economy, from the current 75 percent to about 50 percent by 2015 and 40 percent by 2020,
 - at the same time an increased contribution of services and industrial sectors, (the ICT sub-sector was estimated in 2000 at about 10 percent of the economic contribution of the industrial sector).

The aim is that Rwanda will be a PIKE nation (Predominantly Information and Knowledge Economy), the role of the agriculture sector as a major contributor to the economy will be reduced.

6.3 Laws

6.3.1 Law N° 44/2001 of 30/11/2001 Establishing Telecommunications,

The current Telecommunications Law in Rwanda was passed by the Transitional National Assembly in 2001. This Law is comparable with laws in many other countries passed at or close to that time. It grants the Republic the authority to regulate Telecommunications and sets up a regulatory board to carry out that function. It requires all operators of telecommunications services to be licensed and creates individual licenses and standard licences. Significantly, it allows the regulatory Board to make alterations and additions to licences and notes that some services do not need licenses.

The Law requires operators to provide any natural person with connection to a public telephone service, and sets a deadline within which connections must be provided. Tariffs must by law be cost based transparency is the predominant control mechanism. Rules are set out relating to the setting of tariffs and the Regulatory Board does have powers to intervene. Ongoing tariff control is confined to the dominant operator.

The Law makes provision for essential provisions in telecommunications such as licensing radio communications, equipment, leased lines (including and obligation to lease), interconnection (including standard reference interconnection offers) and measures to ensure that interconnection is effective, terminal equipment, numbering (including an

investigation of number portability), standards, rights over land, obligatory facilities sharing, accounting standards, a ban on cross shareholding and data protection.

6.3.2 Law N° 39/2001 of 13/09/2001 creating l'Agence de Régulation des Services d'Utilité Publique (RURA),

Passed by the Transitional National Assembly in July 2001, this law established the Rwanda Utilities Regulatory Agency (RURA). RURA must ensure that utilities¹ provide goods and services throughout the country, meet reasonable demands, can finance their activities, promote the interest of users through effective competition and protect users from abuse of monopoly positions, where monopolies are unavoidable.

RURA is required to encourage private investment in public utilities (including telecommunications) and ensure compliance by utilities with the law. To carry out these large tasks, RURA has the power to hold or dispose of property, enter into contracts and impose sanctions for violation of regulations.

RURA is governed by a Regulatory Board (RB) which must be knowledgeable collectively, but no individual member should have worked as a member of the management staff of any public utility in the three years before his or her appointment.

The RB, of its own volition, or on request of any Minister, responsible for any of the utilities, provide advice to that Minister on any matters concerning that utility. The Board also has the right to make proposals to a Minister for a new legislation for any utility sector. Ministers also consult with the RB on policy for his public utility sector.

In one interesting provision the Minister has the power to rescind any decision of the RB if it appears to him/her that the security of Rwanda or relations with any foreign country may be adversely affected. The RB can appeal the Ministers decision to the courts.

Chapter V specifically requires the Regulatory Board to concentrate promoting competition within each sector, terminating and imposing sanctions in respect of anti-competitive conduct and informing the Minister of any anti-competitive conduct and sanctions imposed.

Decisions or practices which fix (allegedly competitive) tariffs, prices or other market arrangement that control markets, technical development, apply anti-competitive, discriminatory conditions to equivalent transactions, are void.

Any conduct by one or more dominant organizations in a public utility sector in the country is prohibited if it amounts to an abuse of the dominant position.

6.3.3 Law N° 32/2002 of 02/10/2002 creating the Rwanda Information Technology Authority (RITA).

This Law has but two operative Clauses. Article 4 sets out RITA's Objectives. In 4 (1) RITA is responsible for coordination of activities and programmes aimed at setting up and promoting the Government Policy and strategies in matters relating to information technology and communications. In 4 (2) RITA is responsible for the implementing of National Programmes in information and communication technology and setting up the State web-site and gov-net.

6.4 Institutions

The principal official institutions in the telecommunications sector in Rwanda are:

¹ Utilities includes: telecommunications networks and/or telecommunications services, electricity, water, the removal of waste products from residential or business premises, the extraction and distribution of gas, persons and goods transport.

6.4.1 MININFRA

From November 15, 2002 to date the GOR ministry with responsibility for telecommunications has been known as the Ministry of Infrastructure (MININFRA). Among other functions it has responsibility for the laws relating to posts and telecommunications. Law N° 44/2001, is analysed above and the following are being sought:

- Law N° 2/92 of 11 March 1992 creating National Poste Office (ONP),
- Law N° 18/99 of 30 August 1999 ending the monopoly of ELECTROGAZ (Electrogaz has the potential to enter the telecommunications market by wholesaling the spare capacity in its SCAD fibre optic cables).

MININFRA advise that their main priority in 2006 will be a review of the Telecommunications Law of 2001.

6.4.2 RURA

RURA was set up under Law N° 39/2001. It has judicial status and management autonomy. It has the mission to regulate services that supply telecommunications networks and / or services, power, water, waste drainage in residential and/or commercial buildings; gas extraction and distribution as well as passengers and goods transportation.

The Agency aims² to improve consumers' service quality, promote efficiency in service providing and thus contribute to the development of sectors. In the telecommunications sector RURA has been consolidating regulation through the telecommunications law and its accompanying decrees and through decisions by the RURA Regulatory Board.

RURA notes that the GOR legislation on the liberalization of the telecommunications sector must facilitate competition promotion and inspire confidence to investors. During 2004, RURA sought a transparent license granting procedure that meets the needs of the communications sector, while allowing good management of scarce resources such as the radio communications frequencies spectrum.

The RURA Board's activities in ICT have been associated with issuing radio communications and telecommunications licenses, tariff regulation, as well as analysis of the interconnection between MTN RWANDACELL and RWANDATEL. The RURA Board played a mediator's role so as to help the two operators to find an intermediate solution to that problem. The RURA Board made some decisions among which the most important are:

- Decision n°01/2004 of 31 March 2004 on the contribution to the Universal Access Fund (UAF): the Board fixed the amount of this contribution for exercise 2004 at 2 percent of the operator's turnover,
- Decision n°02/2004 of 9 September 2004 on dominant organizations: declared RWANDATEL the dominant operator in the field of fixed telephony and RWANDACELL in the field of mobile telephony,
- Decision n° 03/2004 of 3 December 2004 relating to the interconnection between RWANDATEL and MTN RWANDACELL: aimed at a short term solution to the cost of interconnection while waiting for a decision based on a real cost study.

In the 2004 report the RURA notes that RURA's activities have been conducted not only thanks to Government support, but also thanks to the support of international organizations. RURA has extensive and critically important functions, but is not well equipped to discharge them. For more that 12 months it had only one person working on telecommunications

² Republic of Rwanda, Rwanda Utilities Regulatory Agency, Annual Report 2004, APRIL 2005, Para 3.1

issues. It not only needs more people, but people with a wider range of backgrounds. These should include accountants, lawyers and economists, as well as engineers.

6.4.3 RITA

The Rwanda Information Technology Authority (RITA) was designed to serve as the national coordinating body to support the development and the implementation of the NICI Plan. It replaced Rwanda's National Information Technology Commission (NITC), and the Board of RITA assumed these functions. RITA operates autonomously, with linkages to the IT Divisions/Directorates of the Ministries as well as with other ICT-related organizations in the public and private sector.

RITA also has the responsibility for co-ordinating other National ICT initiatives and projects, facilitating the implementation of NICI Plan programmes, facilitating the work of the NICI, the NICI-Working Groups, as well as IT Division/Directorates of Government Ministries, providing advisory and technical support services to the public and private sector organizations.

RITA also has the responsibility for developing National ICT Standards and Guidelines and has the ICT Consultancy role as well as public awareness and education role in the area of information and communications technologies.

6.5 Other Stakeholders

Telephone services in Rwanda are supplied by three operators: TERRACOM (formerly the incumbent fixed line operator RWANDATEL, since 1993), MTN RWANDACELL (supplying mobile telecommunication services since 1998) and, ARTEL providing satellite communication network (VSAT) in the rural areas since 2002.

6.5.1 TERRACOM

Privatization of Rwandatel to a private company TERRACOM took place in late 2005. Terracom Communications, an American base company is laying fibre optics across the country and has installed wireless internet in many schools and communities. It is currently preparing to roll out a nationwide CDMA network.

6.5.2 MTN RWANDACELL

MTN – Rwandacell, was the first mobile operator in Rwanda and is a joint venture between Rwandatel and MTN International, (owned by the MTN Holdings, part of the M-Cell Group South Africa). MTN International has 40 percent of the stocks of MTN – Rwandacell. MTN is currently offering internet services via its cell phone network and is ready to begin a nationwide rollout of wireless broadband data services. Its fixed line licence has been approved by the government but has not yet been issued.

6.5.3 ARTEL

Artel was launched in October 2002, introducing VSAT services in the rural areas. Artel has a technological partnership with Gilat Satellite Networks from Israel and has deployed 250 VSATs across Rwanda. It has interconnections with Rwandatel and MTN – Rwandacell.

New services are regularly being introduced in the market. These include prepaid cards for fixed telephones and public mobile phone commonly known under the name of "TUVUGANE" (Let's talk).

In rural areas international calls originated by ARTEL are transmitted through TERRACOM. Users buy prepaid card units in local grocery stores, community centres, etc, to make their calls.

The most recent figures on the increase in the number of subscribers are:

Table 2: Increase in the number of subscribers

Company	Service	2001	2002	2003	2004	2005
Rwandatel	Fixed Lines	21,458	25,105	25,565	22,972	23,903
	Public Telephones				3,933	
MTM Rwandacell	Mobile Lines	44,117	82,391	97,261	137,271	219,657
	Public Mobile phones				1,457	
ARTEL		0	60	304	452	490
TOTAL		65,575	107,556	123,130	166,085	244,050

Source: RURA Annual Report 2004

Teledensity is estimated at 2.09 per 100 people

For the fixed network: 0.3 per 100.

For the mobile network: 2.9 per 100.

The Rwandan telecommunications market has been characterized by a duopoly with one fixed and one mobile company. TERRACOM originally planned to be a network only organisation but has now absorbed RWANDATEL. At the same time the GOR, through RURA, has initiated the process of issuing a mobile licence to TERRACOM and a fixed licence to RWANDACEL, opening up the possibility of competition in both markets. RURA is responsible for the technical preparation of these licences but they are awarded by the Minister of Communications on behalf of the GOR.

6.6 ISPs

Currently, there are at least five ISPs are operating in Rwanda:

6.6.1 TERRACOM

TERRACOM (as RWANDATEL) was the only official commercial ISP in the country until end 2000. It currently provides ADSL and dial up internet connection and wireless connection.

6.6.2 National University of Rwanda (NUR) and Kigali Institute of Science, Technology and management (KIST) (www.kist.ac.rw)

The National University of Rwanda (NUR) and the Kigali Institute of Science, Technology and management (KIST) started the Internet service provision at the beginning of 2001. Since February 2004, KIST is getting the Internet services from TERRACOM. KIST uses both Dial up and Wireless technology to provide Internet connectivity to its customers while NUR uses Dial up and Fibre optic to serve its customers.

6.6.3 Mediapost

MEDIAPOST started Internet provision in 2003 and obtained international bandwidth through the use of VSAT dishes and through TERRACOM as well. It used dial up technology to serve its customers and is now out of business.

6.6.4 ARTEL communication (www.artelcommunications.com)

ARTEL started in 2003 and use VSAT to provide both Internet and telephone access in rural area.

RURA note³ that there are other operators but these have not been able to give to the Regulatory Agency the statistics relating to years 2001 and 2002. These data do not reflect an accurate picture of the internet services penetration rate because Internet cafés (Cyber cafe) users are not listed.

The key players in the Wireless internet business are: TERRACOM (former RWANDATEL and Mediapost. The 2004 figures show Rwanda with a low Internet penetration: 0.3 percent.

Table 3: Increase in the number of Internet Subscribers

Company	2001	2002	2003	2004	2005
RWANDATEL	1,482	2,047	2,378	2,497	2,484
MEDIAPOST	0	0	114	130	*
ARTEL	0	0	12	28	28
TERRACOM	0	0	0	220	**
OTHER	0	0	0	0	
TOTAL	1482	2047	2504	2875	2,512

Source: RURA Annual Report 2004

* No longer in operation as an ISP

** No data available for Terracom in 2005

2005 Data is preliminary

Subscribers and users are not necessarily the same thing. In 2000 there were only 5 000 Internet users with one Internet Service Provider, RWANDATEL. By 2004 the number of Internet user has increased from 5000 to a reported 25000.

The use of the Internet for educational purposes is currently limited to the NUR and KIST. Computers and the Internet remain underused in school system. While many schools now have computers most schools have no reliable electricity or telephones.

The GOR started to provide telephone and internet connectivity from 2004. Access to electricity remains a problem.

6.7 PROJECTS

6.7.1 RINEX

The high cost of international bandwidth to Internet has limited the growth of Internet in developing countries. At the same time the quality of Internet services is undermined by traffic delays. One reason is ISPs in developing countries use international bandwidth for their national as well as international traffic.

If there is local interconnection, where traffic originating from one local ISP intended for another local ISP does not have to leave the area or country to reach its destination the problem is resolved. This switch is referred to as the Internet Exchange Point (IXP).

RINEX was a project to establish an Internet Exchange Point in Kigali, Rwanda and connect as many ISPs as possible. By peering between ISPs without passing through international links, it would enhance the quality of Internet services and saving bandwidth and money.

It was implemented successfully as part of the Communication Systems Design 2004 course at the Royal Institute of Technology (KTH) in Sweden and sponsored by the Swedish International Development and Cooperation Agency (SIDA). All the local ISPs in Rwanda are connected and a full mesh has been implemented. A sustainability plan has been produced and the ISPs staff has been trained to manage the IXP.

³ Annual Report, Page 15

6.7.2 Proposed Projects

Currently, two important projects in the development phase may significantly affect the market structure and have dramatic impact in the telecommunications sector in Rwanda.

- **KARISIMBI Project** – Rehabilitation of the existing tower at Karisimbi to prepare it for being used in efficient way by different stakeholders and operators, mainly Orinfor (ex: usage of Orinfor tower at Karisimbi as CDMA and transmission site).
- **ELECTROGAZ** – Extension and electrification of the communication system of the national electricity transmission grid – Implementation of an Optical Ground Wire (OPGW) Scada control system on the entire 110 kV and 70 kV transmission system with extensive excess capacity.

6.8 Regulation

As was noted in paragraph 5.2 that regulation is only required when competition in the private sector is failing to serve the public interest. Rwanda has the basic conditions for competition: while there are not “many firms” there is more than one, entry and exit is relatively easy, provided infrastructure can be shared, information is available and all firms have commercial objectives.

The WTO Basic Agreement on Telecommunications is generally and widely accepted as standard against which competitive regimes for telecommunications may be measured. Rwanda’s law regulations and practices compare well as can be seen in Table 4. The fact that the current law provides many of the critical aspect of a competitive telecommunications regime must a factor in the absence of criticism of the legal provisions.

6.9 Policy Implementation

In June 2005 the GOR approached the World Bank to fund an E-Rwanda programme, designed to help implement components of the NICI II Plan. It was decided that a stand alone project was preferable because of special skills required. Accordingly, the Bank has agreed to fast-track the project provided the GOR can provide the necessary counterpart resources. The Project has been refined to five components:

1. Strengthening Government Effectiveness

This component is designed to modernise government internal systems and processes and to develop a common IT architecture.

2. Service delivery improvement for citizens and the private sector

The first set of activities related to sector applications such as in health, education, agriculture and the environment. These will be selected from priority applications from NICI plan already underway. They will be processed in a way that involves government stakeholders, the private sector and civil society.

The second set of activities relate to applying project content to rural communities. This is in the context of a reduction in the number of districts in Rwanda and the location of staff in district offices. The project aims to strengthen the use of ICT products at district level.

3. Telecom Issues

Section 3 aims to strengthen the policy and regulatory framework and empower RURA by:

- (i) developing and finalising policies, laws, regulations procedures,
- (ii) support to enforcement, and

- (iii) fair open access regime for infrastructure sharing at the national and regional level

In addition this component will finance service delivery in some areas and assist in the formation of a national infrastructure network by using an Objective Based Assessment (OBA) method of selecting appropriate partners.

4. Private Sector Development

This original component focused on strengthening the legal and regulatory framework for IT private sector development. However, this element has been dropped from the e-Rwanda Project.

5. Institutional Arrangements

This is related to the implementation of the above components and calls for a full time team to devote themselves to providing input to the project preparation process. The operational committee will report to the Minister of Infrastructure and through him to the Cabinet.

6.10 Postal

Postal services are not the primary focus of this assignment. However, Rwanda has adopted the approach of treating postal services as an aspect of communications.

Unlike almost every other country in the World postal and telecommunications services in Rwanda have never been united in the same organization.

The postal service's independent operation over a long period of time will make the commercialisation of the Post Office simpler as being responsible for the progress that has been made in the telecommunications sector.

6.11 Conclusion

The above are the basic findings of the inception phase. While excellent progress has been made in many aspects of telecommunications in Rwanda and there is a strong political commitment to make progress, a number of issues do need urgent attention and these will now be discussed.

Table 4: Rwanda and WTO Basic Agreement

WTO Agreement Principles and Application	LEGAL PROVISION	ISSUE	CURRENT STATUS
1. prevent anti-competitive practices, to facilitate entry of new competitors and ensure fair competition			
no limit on the number of licences	Article 5	Generally, the market is best equipped to determine the appropriate number of licences. After 3-4 have been issued, examining the new features on offer may be appropriate.	Not a problem at present. The importance of facilities sharing for new licences in Rwanda cannot be overemphasised. Separate FACILITIES licence and SERVICES licence are possible.
PSTN connection guaranteed by law	Article 15	Interconnection is accepted. The price and conditions of interconnection can determine the effectiveness of competition.	No model in Rwanda. Singapore offers a good case of interconnection process that allows negotiations the major role with arbitral and regulatory backup
access guaranteed	Article 23	Access to networks is essential. The article lays down conditions where access may be restricted for legitimate reasons.	As this article relates mainly to catastrophic conditions situations of maintenance, safety etc, it is a reserve power only to be used when needed
tariff dumping prohibited	Article 29	An incumbent cuts prices so that new entrants that depend on cash flow to finance network roll out, is put out of business. When the new entrant has gone, prices are raised again.	Currently, prices are high and should be high enough to attract new companies to the sector. If there is not a lot of interest, there must be problems other than the incumbent pricing.
controls confined to dominant organisations	Article 30	Competition is the most efficient regulator of prices. In highly competitive locations (e.g. Hong Kong) prices may be so low they are uneconomic.	Currently prices controls are confined to dominant organisations. However, both companies have now been designated as dominant organisations.
fair allocation of numbers	Article 45	Fair numbering is a critical element of competition. If new entrants cannot get good numbers, easily this serves to keep them out.	So far this has not been raised as an issue. When more providers enter the market a good numbering plan is essential.
obligatory facilities sharing	Article 48	Facilities sharing helps keep down the investment in capital. Capital is critical to costs. If capital costs double unit costs double.	Prices are high in Rwanda because at the moment critical infrastructure is under the control of one company or the other.
regulation of accounting standards	Article 51	Company accounts kept on a comparable basis makes comparisons possible. Separate accounting for network operation and service provision makes regulation simpler.	Currently, no standards are mandated in Rwanda. Terracom and MTN are both international companies and use international standards.

WTO Agreement Principles and Application	LEGAL PROVISION	ISSUE	CURRENT STATUS
ban on cross shareholding	Article 53	This provision is designed to make it more difficult to evade regulatory controls by setting up paper companies.	So far has not been raised as an issue. Could be important in takeover battles in the future.

2. allow non-discriminatory interconnection, to facilitate new entry

access guaranteed	Article 23	Mandatory to interconnect. Interconnection is also in the best interests of all players. Problems relate to cost of interconnection.	This Article mainly relates to circumstances when denial of access may be appropriate.
obligation to lease lines	Article 37	The law is designed to facilitate new entry by making ensuring new entrants can enter the market.	Despite the law, the incentive that operates is for the incumbent to make excuses to refuse to lease.
mandatory interconnection	Article 39	Interconnection is in the interests of both companies but the price of interconnection is critical.	RURA tried to resolve a dispute, but issues remain unresolved.
standard reference interconnection offer	Article 40	Makes the terms of interconnection transparent; required by law as a means to facilitate new entry.	No indication of offers being advertised but may be available on request.
standard charges	Article 41	Requires that all operators charge themselves the same as they would charge another operator.	No information available. The ongoing interconnection dispute suggests that this provision is not effective.

3. apply universal service obligations neutrally, and be imposed non-discriminatorily, to ensure fair competition

universal access fund (UAF)	Article 40	Existing operators are levied to provide a fund for universal access, rather than one company being obliged to provide it. Funds should be used fairly.	Currently the fund is accumulating but it is not being used because policy decisions still have to be made. The law is silent on distribution rules.
effective interconnection	Article 41	Requires that all operators charge themselves the same as they would charge another operator.	Would be essential to a UAF but so far no action.

4. make licensing criteria publicly available, (so that everyone knows what new entrants need to do to obtain a licence, customers know their rights and service standards

licensing	Article 5	The idea is to make it clear to potential new entrants what they must do if they wish to enter the sector and which rules they must comply with.	Law requires that all licenses must be granted on an open and objective basis, without discrimination. So far not a large number of applications to judge if this is complied with.
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WTO Agreement Principles and Application	LEGAL PROVISION	ISSUE	CURRENT STATUS
standard format	Article 33	Requires that all licences be in a standard form	Licences are standard when issued. Vary over the years.

5. ensure that regulation separated from incumbent enterprises, to minimise conflicts of interest and

independent regulation	RURA Law N° 39 / 2001	Independent regulation with the regulator separated from the formerly bundled enterprise (with regulation, policy, business and ownership all in the same entity).	This aspect of the WTO principles has been fully complied with.
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6. Ensure the allocation of scarce resources, objectively, promptly, transparently and without discrimination

fair allocation of spectrum	Article 32	Requires the development of a Frequency Spectrum Allocation Policy.	Article 33 carries penalties for the misuse of the spectrum but there is no policy specified in the law. RURA indicates that it does not have the time or expertise to develop the policy unaided.
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Areas where RURA should be active but currently lacks capacity.

7. Issues

7.1 Policy

Policy documents recognise the need for policy implementation. NICI Plans 2 and 3 are the spearheads of implementation. NICI does not include detailed analysis of implementation of NICI I. Comment from stakeholders suggest that not all of NICI I was implemented. The support of the World Bank for e-Rwanda will give additional impetus to the implementation of NICI II.

The policy documents are clear on objectives, but less specific on means. Underlying all policy for telecommunications must be the realisation that telecommunications are a means to an end. They enable people to communicate quicker and more cost effectively, but are seldom final products in themselves.

The fact that telecommunications are a means to an end suggests that the future policy papers should emphasise more strongly that all implementation of policies should focus on: (1) widespread availability of service, (2) cost-effective delivery of (3) quality products. As an intermediary service it is essential that telecommunications services are available and cost effective, in order to promote other aspects of the economy. A clear focus on these issues will give strong operational guidelines to regulators implementing government policy, laws and regulations.

7.1.1 RECOMMENDATIONS 1.

RECOMMENDATION	REASONING
Underlying Principles Policies should be focused on ensuring: (1) widespread availability of ICT services, (2) cost effective delivery of services, and (3) the offering of high quality products.	While these principles may be taken for granted in the policy documents, the importance of cost effective communications as a development tool is easily lost sight of in the technical analysis.

7.2 Second NICI Plan

The e-Rwanda project is targeted at the implementation of the NICI Plan II. This assignment is an aspect of e-Rwanda targeted at identification of the regulatory, legal and other steps that should be taken to strengthen RURA as part of ensuring implementation.

The formation of RITA ensures that an organisation exists with a clear mandate for implementation and which can be held accountable for achieving plan targets. It also means that there is a need for RITA to carry out its coordination mandate.

7.2.1 RECOMMENDATIONS 2.

RECOMMENDATION	REASONING
Close Cooperation There should be ongoing close cooperation and coordination between the various stakeholders for the implementation of NICI II and e-Rwanda.	Many of the success factors in e-Rwanda are dependent upon success by agencies other than RITA. Ongoing close cooperation is essential for project success

7.3 Law No 44/201

Paragraph 11 highlighted the provisions of the current law and Table 4 shows how core provisions of the law dovetail with the WTO basic Agreement on Telecommunications. While the practices in relation to telecommunications law are moving fast, initial work suggests that almost all the essential regulatory aspects of implementation of e-Rwanda can be achieved within the current law.

The law imposes no upper limit on the number of licences (Article 5), so there is no legal limitation to the scope for competition (there may be economic or financial limitations). Connection to the PSTN is guaranteed by law (Article 15), although in practice the availability of lines in the particular location may be the limiting factor.

Access is guaranteed (Article 23) and Tariff dumping is prohibited (Article 29), ensuring that new entrants cannot be eliminated by the incumbent organisations. Price controls are currently limited to dominant organisations (Article 30) and these, in practice are TERRACOM and RWANDACELL. The law provides for fair Allocation of Numbers (Article 45).

In the light of the growing international interest in wholesale / retail separation in telecommunications it can be seen that Rwanda is ahead of many countries in that it already provides for obligatory facilities sharing (Article 48). Rwanda's law also already provides for the regulator to lay down appropriate Accounting Standards (Article 51) and this can include accounting separation between infrastructure operation and telecom services.

The existing ban on cross shareholding (Article 53) could be essential to ensure ongoing competition and prevent anti-competitive consolidation of the sector. The guarantee of access (Article 23), obligation to Lease Lines (Article 37) and mandatory interconnection (Article 39) are all tools to ensure ongoing competition in the sector. Similarly, standard Reference Interconnection Offers (Article 40) are designed to make it easier for new entry to the sector as is the regulation of effective Interconnection (Article 41).

Accordingly, this analysis suggests that the focus of all agencies should be the effective implementation of the existing law, rather than its replacement. Any review of the law should be based on a clear analysis of the objectives of the review. However, there are a number of e-Commerce provisions, mentioned in passing in the current law that will soon need elaboration and this would be a highly relevant focus for MININFRA's policy work.

In addition, if there were to be a renewed emphasis on the facilities sharing or a wholesale / retail split in the sector the decision on moving in that direction should be the subject of a policy review before any effort is made to redraft the law. The law draftsmen should not be required, by default, to make policy decisions.

7.3.1 RECOMMENDATIONS 3.

RECOMMENDATION	REASONING
<p>Focus on Implementation of the Law</p> <p>Law No 44/201 is able to meet all foreseeable needs in terms of telecommunications regulation and the focus of all agencies should be the implementation of the provisions of the existing law.</p>	<p>In three to five years it will be appropriate to review the law, but until then, the current law is quite adequate to meet all foreseeable needs for telecommunications regulation. Implementation capacity is the biggest single requirement.</p>
<p>Policy Review</p> <p>A number of e-Commerce provisions, mentioned briefly in the current law will soon need elaboration and this would be a highly relevant policy focus for MININFRA's policy work.</p>	<p>Drafting the law should be the "icing on the cake," when all policy decisions of substance have already been resolved. Substantial work is required in the areas of e-Commerce.</p>

In some cases the law will need to be supplemented by the adoption, and publication of operational procedures and practices, particularly by RURA. The paragraph 7.4.3 suggests how this may be done.

7.4 Institutions

7.4.1 MININFRA

Currently the major telecommunications project planned at MININFRA is a review of the Telecommunications Law. At this time it has not been possible to identify the need for an urgent review of the law as proposed, except in the areas of e-Commerce.

It would be beneficial if MININFRA could focus on the implementation of current law by RURA. There is an urgent need to find additional resources to develop RURA's capacity to be more proactive in discharging its regulatory mandate. At the moment many of the provisions of the law exist on paper only and need to be supplemented by procedures, process and trained people to operate the. Implementing the existing law is the priority.

7.4.2 RECOMMENDATIONS 4.

RECOMMENDATION	REASONING
<p>Focus on Implementation</p> <p>MININFRA should focus on ensuring that RURA has the resources it needs for the implementation of the regulatory aspects of e-Rwanda and on enhancing the resources and regulatory capacity of RURA.</p>	<p>In three to five years it will be appropriate to review the telecommunications law but currently all immediately required powers are in the current law. The missing ingredient is effective implementation capacity in RURA.</p>

7.4.3 RURA

In Table 4 the current status of the regulatory issues raised by the WTO basic agreement are mentioned. Many of these require actions by RURA but currently it does not have the capacity to address them. The following elaborates some of the issues identified in that table, where RURA will need support.

- Number of licences (Article 5):

Imposing an upper limit on the number of licences is not a problem at present. However, the fact that there are not many companies seeking entry raises the issue: why? The cost of rolling out a new network must be one of the main factors. Accordingly, the importance of facilities sharing for new licensees in Rwanda cannot be overemphasised. In some jurisdictions separate FACILITIES and SERVICES licences are issued (Malaysia) and these have been considered elsewhere (Uganda, Cambodia and Mongolia). This enables the rules relating to the operation and access to the network to be different to those relating to services. This potentially makes it more acceptable to share facilities. The issuing of separate licences for facilities and services should be given consideration in Rwanda.

- Guaranteed Connection (Article 15):

No model for interconnection currently exists in Rwanda. Singapore offers a good model of an advertised⁴ interconnection process. It accords negotiations the major role in resolving interconnection issues, with arbitral and regulatory backup should interconnection negotiations fail. It avoids political intervention as much as possible. This should be given urgent consideration by RURA with a view to adoption of a similar process. Assistance may

⁴ <http://www.ida.gov.sg/idaweb/pnr/infopage.jsp?infopagecategory=&infopageid=1161&versionid=1>

be required in the setting up of a consultative process to gain the support of the private sector.

- Tariff Dumping Prohibited (Article 29):

This is a useful provision in the law, but the current problem is that prices are too high not that they are too low! Prices are currently high enough to attract new entrant companies to the sector. However, as there is not a lot of interest in entry, there must be problems other than the incumbent pricing. RURA needs to analyse the current regulatory barriers to entry and move to remove them if that is possible. It will need e-Rwanda's support in this possibly complex task.

- Obligatory Facilities Sharing (Article 48):

One reason why prices are high in Rwanda at present is that at the moment critical infrastructure is under the control of one company or the other. While all companies have indicated support for a policy of facilities sharing and currently share some infrastructure, it is not happening to the extent necessary to bring down the cost of origination, the average cost of minutes of transmission or the cost of call termination. This is another area where separate facilities and services licences, separated accounting and even separation of wholesale and retail operations could bring enormous benefits to Rwanda in terms of capacity utilisation and lower unit costs. These issues need to be examined by RURA and it will need some assistance. RURA will need assistance to work through a policy of institutional changes of this order.

The same principles should be applied to the Electrogaz fibre optic cables and the East African Backbone (EAB) attached to the East African Submarine Cable System (EASSY). In each case the logic of these investments is that they should be "main highways" open to all potential users on a fair and equal basis.

- Obligation to Lease Lines (Article 37):

Despite this provision in the law, the incentive that operates is for the owner of facilities, in this case lines, to make excuses to refuse to lease. Currently, the owner of facilities sees its ownership of network facilities as its competitive advantage (i.e. as a barrier to competition). What is required is an institutional structure that changes this incentive. The suggested institutional change would be to mandate reorganisation of each company into wholesale and retail divisions respectively. The wholesale division will always have an incentive to offer access if it is possible as any additional revenue will improve its bottom line. Currently, any company proposing to lease lines faces opposition from the sales department of its own company; they will say that their wholesale colleagues are undermining their competitive position in the market. Separation avoids this problem.

- Mandatory Interconnection (Article 39):

Mandatory Interconnection is something that all companies favour, but argue about the price. Currently, while the logic of interconnection is clear, each company will seek to obtain commercial advantages by overcharging its interconnecting competitor-partner for the service. Origination charges are subjected to commercial pressures to keep them down as each company seeks to offer a better customer package. However, each company will seek to enhance margins by blurring the distinction between transmission charges and termination charges. RURA tried to resolve the ongoing dispute between Terracom and MTN in Decision n° 03/2004 of 3 December 2004, but some issues remain unresolved. Wholesale and retail separation again simplifies this problem, by enhancing transparency. Because the wholesale provider has to advertise its charges and charge all parties the same, the division of the charge between transmission and termination is clear. Again this is a matter where some assistance to RURA could offer large benefits to Rwanda.

- Universal Access Fund (Article 40):

Currently the UAF fund is accumulating money, but it is not being used because policy decisions still have to be made on how it will be best used. The law is silent on distribution rules. This is yet another example of a problem that is simplified if the distinction between wholesale and retail is acknowledged. Currently, a barrier to UAF allocation is the suspicion that one or more operators will obtain a competitive advantage by using some of the fund (provided in part by competitors) to enhance services at their competitors' expense. If companies are operating on the basis of wholesale and retail, operationally or organisationally separated the problem is simplified. The UAF can apply solely to the provision of infrastructure. The wholesaler will not mind which traffic is carried as all users pay the same for the use of the facility and all will have uninterrupted access. RURA will need some assistance to develop policies in this area too and to prepare an appropriate allocation system.

- Radio Frequency Spectrum (Article 32):

Article 32 requires the development of a policy on the allocation of the Radio Frequency Spectrum. Article 33 imposes penalties for the misuse of the spectrum but there is no policy specified in the law. RURA indicates that it does not have the time or expertise to develop the policy unaided. Spectrum is a highly valuable natural resource and its careful and economic distribution is essential to the wellbeing of the sector in the future. Assistance to RURA in this area could bring very large future benefits

- Mode of Operation:

In Table 4, point 4, one of the WTO principles of liberalisation listed is to make licensing criteria publicly available. Despite RURA having a web site, these criteria are not published, possibly because they are in the development phase. In several cases RURA has resolved disputes, but there is no published standard practice with respect to dispute resolution.

Progress could be made rapidly if the actual process used were recorded and published on the web site. The page could invite comment and suggestions for improvements and set a deadline for the receipt of suggestions. These could be reviewed by the staff of RURA (assisted by e-Rwanda) and a revised process published. With two or more rounds of consultation, a process that meets the basic needs of all parties could be achieved without the need for substantial outside assistance. Other RURA responsibilities could be advanced by a similar process, on issues such as:

- appropriate processes for seeking interconnection,
- requiring the publication by the private sector of reference interconnection offers,
- draft procedures for resolving interconnection disputes,
- seeking submissions on alterations to the Radio Frequency Spectrum (RFS) allocation regime,
- proposed procedures to investigate alleged-anti competitive conduct, etc
- a call for submissions on the wisdom of offering technology neutral licences,
- a call for submissions on separate licences for services and network facilities,
- mandatory separation of network and services accounting.

RURA has judicial status and management autonomy. There is no obstacle to it seeking submissions from interested parties to enhance its deliberations and operational processes. The proposed process would be cost effective and involve all stakeholders that want to be involved. It would substantially augment the capacity of RURA to manage its own business.

The primary requirements for implementation of all of the suggestions in this paragraph are: more people and expertise transfer. Expertise and capacity building cannot be bought off the shelf, they have to be acquired organically over a number of years. A programme with a focus of not less than two years is required. E-Rwanda is an appropriate source of support for such technical assistance.

7.4.4 RECOMMENDATIONS 5.

RECOMMENDATION	REASONING
<p>High Priorities</p> <p>The items listed in paragraph 7.4.3 are critical issues that RURA should be attending to; they should be included in the high priority list for assistance delivered under e-Rwanda and the focus of the assistance delivered should be not less than two years.</p>	<p>The relevant paragraph has outlined the need for assistance in these areas. The primary requirements are: more people and expertise transfer.</p>
<p>Cost Effective Implementation</p> <p>RURA should make greater use of its judicial status and management autonomy to solicit submissions from the private sector and other stakeholders on discharging its core functions in a way that will advance NICI II and e-Rwanda.</p>	<p>All immediately required powers are in the current law. The missing ingredient is effective implementation. This recommendation suggest that RURA should seek the views of the private sector on how best to implement the current law.</p>

7.5 Facilities Sharing

The five components of e-Rwanda: strengthening government effectiveness, service delivery improvement for citizens and the private sector, telecom regulatory strengthening, private sector development and improved institutional arrangements for rural access, will all have the effect of encouraging organic development of the Rwanda ICT sector.

In paragraph 7.4.3 above the issues of facilities sharing is mentioned as one aspect of the support required for RURA. The discussion related mainly to the sharing of facilities by existing operators. However, the most urgent issue in facilities sharing is an appropriate set of commercial and regulatory arrangements is to accommodate the entry spare capacity of the Electrogaz OPGW cables into the wholesale telecommunications market.

It is appropriate to apply resources from e-Rwanda in this area as the decisions taken on sharing this fibre is likely to be the dominating influence in Rwandan telecommunications for many years to come. Operating this cable on a facilities only, open access, common tariff, wholesale basis will facilitate the entry of new suppliers and simplify the regulatory issues of accommodating new retail players. In one move, Rwanda can address the issues of reducing the costs of existing retail businesses, reducing the cost of new service providers entering the market and providing more effective retail competition. These benefits will only flow if the Electrogaz cables are confined to the wholesale market.

By contrast, if Electrogaz is able to enter the retail market, effectively a government owned organization will be re-entering the telecommunications business. This will create uncertainty among investors in the market already, and they may feel obliged to undertake their own roll-outs of competing fibre, just to be sure they can reach their customers. It will complicate regulatory issues and fail to address the critical issue of facilities sharing. In addition it will create demands for further privatisation with ongoing uncertainty for a number of years.

Accordingly, developing a basis of operation of EElectrogaz OPGW as a wholesale only operation is a high priority.

7.5.1 RECOMMENDATIONS 6.

RECOMMENDATION	REASONING
<p>Facilities Sharing</p> <p>Regulatory components of e-Rwanda should focus on facilities sharing, efficient and cost effective interconnection, effective regulation, clear process and procedures and removing perceived discrimination against local firms.</p>	<p>Rwanda is a developing country with limited supplies of investment capital, limited borrowing capacity and limited ability to attract capital. It is essential that its capital investment is efficient and infrastructure facilities are used as close as possible to their capacity.</p>
<p>Electrogaz – Wholesale Only</p> <p>Intensive consideration should be given to the effective operation of the Electrogaz fibre optic cables on a wholesale only basis with open access to retail service providers and a common tariff structure.</p>	<p>The operation of Electrogaz fibre on a wholesale only basis with open access to retail service providers and a common tariff structure will facilitate the entry of new retail competitors and ensure efficient use of the available infrastructure.</p>
<p>Electrogaz – Enduring Commitment</p> <p>There should be strong political and legislative commitments to ensuring that the fibre optic cables owned by Electrogaz are by law confined to wholesale only operation and will never be allowed to enter the retail market.</p>	<p>Wholesale only operation of Electrogaz cables will have big benefits for Rwanda. However, private sector parties will need cast iron guarantees that Electrogaz will not enter the retail market if they are to base their businesses on using Electrogaz infrastructure.</p>

7.6 Regulatory Bottlenecks and Overlap

Table 5 illustrates the functions of the institutions with telecommunications regulatory responsibilities. It shows that there are a number of potential overlaps and sources of institutional conflict and confusion.

The main problems seem to be at the policy level and at the market coordination level. It is not clear that these potential overlaps have yet caused problems, but the fact that the potential is there is a possible source of confusion and dispute. The GOR is aware of the problem and has commissioned a report into how these problems may be overcome. The report is not yet available.

7.7 Other Stakeholders

With the intervention of the ICTA Africa Investment Summit (Kigali) it has only been possible to meet some of the smaller private sector players. The fact that they two largest companies now aim to offer fixed, mobile and internet services means that Rwanda is potentially heading into a duopoly.

A duopoly is where there are two companies of a similar size dominating the market. There is nothing wrong with a duopoly in principle, but problems arise when rather than competing they act in an anti-competitive monopolistic fashion, particularly aimed at keeping out other potential competitors.

Rwanda is fortunate in that both of the large companies are committed to a competitive environment and currently share infrastructure. This helps make all services more cost effective. In addition, there is the potential entry of Electrogaz into the wholesale market. Early indications are that both of the large companies are interested in the potential of this capacity and small competitors are interested too.

Table 5: Mapping Regulatory Functions of Rwandan Agencies

Regulatory Issues	MININFRA	RURA	RITA
POLICY AND LEGISLATION			
Sector Policy Analysis	policy– principal adviser to the minister	can give advice on policy, or be asked to	policy coordination
Sector Legislation	policy papers and prepares legislation		policy coordination
Sector Law Application Monitoring		principal monitoring agency	monitoring of programmes
LICENSING – Property Issues			
Issuing Licences	GOR issues licences through MOI and MOJ	RURA issues ISP licences	
Policing of Licences		license monitoring agency	
Radio Frequency Spectrum Allocation	policy advice	research and allocation method	policy comment
Numbering Plan		responsible agency	
Domestic Project Management (e.g. ER)	projects with policy implications		e-Rwanda project
International Project Management			
TRANSPARENCY + Consumer			
Accounting Separation	policy advice	policy implementation	
Structural Separation	policy advice	policy implementation	
Publicity ad a Regulatory Tool		policy implementation	policy coordination
Emergency Numbers	policy advice	policy implementation	
Type Approval	policy advice	policy implementation	
Information Gathering		information requirements of licenses	
Publication Requirements	policy advice		
Consumer complaint investigation		no other body available	
Justified complaint enforcement		enforcement powers weak / draconian	
Number Portability	policy advice	policy implementation	policy coordination

Regulatory Issues	MININFRA	RURA	RITA
Consultative Processes		responsible	

ACCESS ISSUES – Availability

Universal Access Policy	strong government policy		e-Rwanda project / computers schools
Universal Access Administration			

ACCESS to FACILITIES; Competition

Access to shared facilities	policy decision	policing and enforcement	policy coordination
Access to outside plant	policy decision	policing and enforcement	
Access to proprietary lines	policy decision	policing and enforcement	
Domestic Roaming	policy decision	policing and enforcement	policy coordination
International Roaming			
Anti-competitive conduct investigation	policy advice to minister	investigation and recommendation	
Anti-competitive conduct enforcement		recommendation and action	

MARKET SUPERVISION

Performance Standards	policy advice	policing and enforcement	policy coordination
Private Sector Monitoring	policy related monitoring	major regulatory function	policy coordination
Interconnection Negotiations	advice to government role	mediation and arbitration role	
Incumbent Tariff Investigation		investigation function	
Incumbent Tariff Determination		determination function	

	Potential For Overlap
	No Clear Responsibility

A further promising development is the setting up of a Rwanda ICT Association. This Association is designed to create a forum in which players can talk about issues in a cooperative environment. In reality there is a recognition that RURA is still developing the capacity it needs to fulfil its regulatory mandate and in the meantime if the private sector is proactive there is potential for the sector to be in some part self regulatory.

In other words if the private sector can find an alternative route to promote the public interest, some of the traditional regulatory functions RURA does not have the resources to carry out, will be redundant. This is a promising approach and e-Rwanda will benefit greatly be using this organisation in a proactive way.

7.7.1 RECOMMENDATIONS 7.

RECOMMENDATION	REASONING
<p>Potential for Anti-Competitive Conduct</p> <p>RURA should to be aware of the potential for anti-competitive conduct to develop in a duopoly situation and should put in place effective monitoring systems.</p>	<p>Duopolies are not bad per-see, but if they are used for anti-competitive purposes they are harmful.</p>
<p>Commitment to Competition</p> <p>The GOR should acknowledge the commitment to competition by the two principal players and recognise the potential of the Electrogaz fibre capacity to facilitate entry of new competitors.</p>	<p>The GOR should take the major players at their word and work with them to develop a competitive, regulatory environment.</p>
<p>Rwanda ICT Association</p> <p>The commitment of the private sector to work with the government through the Rwanda ICT Association to develop self policing regulatory tools should be accepted as a positive development.</p>	<p>Self regulation has the potential facilitate new entry to the sector, relive the regulatory burden on RURA and provide the GOR with resources and input into regulatory policy making.</p>

7.7.2 ISPs

It is widely recognised now that there is virtually no need for regulation of ISPs. They represent no threat to competition, the business is highly competitive and their potential for other forms of social harm (such as pornography) are highly site specific. The only form of regulation required is registration and registration should be cheap, uncomplicated and speedy.

7.7.3 RECOMMENDATIONS 8.

RECOMMENDATION	REASONING
<p>ISP Regulation</p> <p>Regulation of ISPs should be confined to registration and registration should be cheap, uncomplicated and speedy.</p>	<p>There is little or no need for ISP regulation</p>

7.8 RFS Regulation

Possible approaches to regulation have been foreshadowed above. The principal issue that has not been addressed is management of the RFS. This is discussed in the law but currently there is a policy vacuum in the area with a shortage of expertise and knowledge. The often expressed fear is that large blocks of spectrum are allocated, without proper

consideration, to one or two players inhibiting the entry of new competitors as the incumbents can claim a property right over the spectrum they have been allocated. In Rwanda, as it most of Africa, this is unlikely to be a critical issue for 5-10 years. However, good policy now will ensure a smooth evolution in years to come.

The private sector is knowledgeable in this area and it is important that a consultative process be engaged in to develop policy. Using the Rwanda ICT Association as a sounding board would be a very appropriate approach and e-Rwanda could support with the provision of resources.

Whatever allocation method is chosen there should be few if any limits on leasing, subleasing or transferring spectrum in order that the most economic users of spectrum can obtain access. The main regulatory requirement should be that RURA is kept informed and the current user of spectrum should be recorded officially.

7.8.1 RECOMMENDATIONS 9.

RECOMMENDATION	REASONING
<p>RFS</p> <p>The GOR should be aware of the potential anti-competitive effect of allocation of large blocks of RFS to one or two players, thereby inhibiting the entry of new competitors.</p>	<p>Incumbents can claim a property right over the spectrum they have been allocated and</p>
<p>Leasing Spectrum</p> <p>Whatever allocation method is chosen there should be few if any limits on leasing, subleasing or transferring spectrum in order that the most economic users of spectrum can obtain access.</p>	<p>If RFS is transferable there is the potential for the spectrum to move into the hands of the most economically effective user.</p>

8. Cross Cutting Issues

In the subsequent reports the consultant will examine in more depth the functions of RURA, as well as the practices that have evolved there. Distinguishing the formulation of policy directions by the MININFRA and regulatory functions of the RURA are distinction functions and measures will be suggested to ensure that these are correctly allocated.

Where possible, the consultant will introduce international examples of successful implementation of measures similar to those proposed. This will allow benchmarking of regulatory activities in the ICT sector, based on the structures and practices of other similar agencies in charge of comparable functions;

Several critical regulatory and policy issues to ensure open access to the national backbone infrastructure have already been identified. Emphasis will be placed on reviewing the approaches to interconnection/unbundling, licensing, numbering, frequency management, regimes.

9. Conclusions

This project has an ambitious agenda but potential solutions are now beginning to present themselves. The most encouraging aspect of the work so far is that all the parties spoken to, are talking along the same lines. The rest of the assignment will be directed to bringing these discussions into a strategic dialogue that will benefit the whole sector.

Appendix 1: Project Terms of Reference and Scope of Services

1. Introduction

Rwanda has recognized the importance of ICT as a catalyst to achieving other development goals, not just in sectors such as health, education and environment, but also in promoting good governance and transparency and economic growth. In such a context, the Government of Rwanda (GOR) has been requested from the World Bank an e-government project e-Rwanda, which is a subset of the NICI II plan and builds on the ICT component of the Public Sector Capacity Building Project. In strong collaboration with other development projects, such as those in energy, rural development and capacity building, e-Rwanda will strengthen cross cutting efforts by the government and the donor community.

As a driver for improved social and economic conditions, the GOR wishes to harness ICT to educate its young and energetic citizenry as well as stimulating development of the ICT private sector. Specific income generating projects targeted towards women genocide survivors and their families, as well as content geared towards governmental services for citizens, will focus on issues related to family health and well-being, protection of the environment, and peace initiatives.

One of the objectives of the e-Rwanda Project is to support the MINIFRA in Enabling ICT policy, regulatory, and institutional development by:

1. Reviewing the legal and regulatory framework currently in place in Rwanda
2. Finalizing or developing the relevant policies, legislation, regulations, and procedures (telecommunications/ broadcasting/ postal/ e-legislation);
3. Developing high-level capacity among government officials to implement ICT programs; and (iii) disseminating ICT policies and initiatives to a large stakeholder audience both in Rwanda and at the regional level.

2. Objectives

The main objective of the present assignment is to provide assistance to MININFRA and RURA to:

1. Review the current policy and regulatory regime in Rwanda;
2. Assess the current status of the provision of regulatory functions in the telecommunications and ICT sector;
3. Make propositions and recommendations of refinements to create an overall enabling environment.

Specifically the assignment will allow the consultants to:

1. Assist MINIFRA and RURA in reviewing policies, regulations and procedures to create a conducive environment for ICT sector;
2. Identify regulatory gaps (e.g. local loop unbundling, portability, national roaming) and regulatory/policy bottlenecks;
3. Propose recommendations on the implementation agenda to establish an enabling environment conducive to the development of the local ICT industry.

3. Scope of Work

The consultancy will be developed in two phases

Phase 1: *Review the legal and regulatory framework currently in place in Rwanda for ICT sector and formulate a precise diagnostic identifying regulatory gaps and bottlenecks.*

1. Examine the functions of RURA, as well as the practices that have prevailed in distinguishing formulation of policy directions by the MININFRA and regulatory functions of the RURA;
2. Provide elements of international comparison and benchmark for regulatory activities in the ICT sector, based on the description of the structure and practices of other agencies in charge of comparable functions;

3. Identify key regulatory and policy issues to ensure open access to the national backbone infrastructure, putting particularly the emphasis on in the interconnection/unbundling, licensing, numbering, frequency management, regimes.
4. Review, with MININFRA, RURA, and the e-Rwanda project preparation team, the initial findings and agree on proposed way forward for Phase 2 prior to work on the second phase.

Phase 2: Design and recommend a detailed implementation agenda finalizing and developing the relevant policies, legislation, regulations and procedures (telecommunications/ broadcasting/ Postal/ e-legislation)

Telecommunication legislation package:

Define a clear, transparent and non discriminatory regime:

- (a) promoting facilities based competition,
- (b) adopting various technologies options, and
- (c) considering existing and prospective alternative telecom and network operators to share capacity and costs;

e-legislation package:

Initiate work on e-legislation to create an enabling environment for ICT-led and knowledge-based growth, and centre attention current issues pertaining to e-Government: Government to government, government to citizens and, government to business;

Design both a detailed implementation plan and capacity building and supporting knowledge management plan for

- (a) the Ministry of infrastructure (MININFRA) coordination of ICT-led GoR initiatives and
- (b) the regulatory authority (RURA).

4. Outputs, Deliverables and Administrative Arrangements

The work involved in this consultancy requires 40 working days and is scheduled to be completed within 8 weeks from the date of signing the contract.

The consultant will provide the following deliverables:

Inception report: to be produced at least one week after commencement

This initial report will describe the approach and methodology, summary of proposed methodology intended to be used for carrying out the assignment

Review and diagnostic report: to be produced after 3 weeks

This report will propose a review of the legal and regulatory framework currently in place in Rwanda for ICT sector and will formulate a precise diagnostic identifying regulatory gaps and bottlenecks

Final Recommendation Report: five weeks after commencement

The consultant will produce specific recommendations concerning (a) the detailed implementation agenda finalizing and developing the relevant policies, legislation, regulations and procedures (telecommunications/ broadcasting/ Postal/ e-legislation) and (b) and capacity building and supporting knowledge management plan for MININFRA and RURA.

The consultant will report to the e-Rwanda Project Manager for project preparation, and through him, to MININFRA and RURA.

Administrative and support services would be provided by the MININFRA and RURA.

Appendix 2: Approach and Methodology

Work Plan

REVIEW OF THE REGULATORY, POLICY AND COMPETITIVE FRAMEWORK OF THE ICT SECTOR IN RWANDA

Strengthening Legal and Regulatory ICT Framework and Governmental Institutions

Approved:

Dr Raphael Mmasi

Objective	Activity	Target Date	Resources Required International	Resources Required Local	Comments
INCEPTION REPORT	FROM TOR: "This initial report will describe the approach and methodology, summary of proposed methodology intended to be used for carrying out the assignment"	10-05-2006	Statistics TOR, EOI, Proposal	Telecom Law Statistics Regulatory Information	
Simulating a Dialogue	<p>Work Plan</p> <p>The inception report will aim to stimulate a dialogue among the ICT community in Rwanda with a view to drawing on the skills and experience of the local people by:</p> <ul style="list-style-type: none"> comprehensive work-plan, face to face strategic dialogue, obtaining and reading relevant information 	10-05-2006	Work Plan Meetings Reports and Information		
REVIEW AND DIAGNOSTIC REPORT a precise diagnostic identifying regulatory gaps and bottlenecks.	FROM TOR: "This report will be a review of the legal and regulatory framework currently in place in Rwanda for ICT sector and will formulate a precise diagnostic identifying regulatory gaps and bottlenecks"	31-05-2006			
Policy and Regulatory Clear understanding of: policy / regulatory process, any overlap and measures taken to avoid overlap	Background and Functions Map RURA and MININFRA Functions, practices that prevail in formulation of policy directions by the MININFRA and regulatory functions of the RURA;	31-5-2006	Reports Policy Papers	Reports Decisions Organisation Charts	

Objective	Activity	Target Date	Resources Required International	Resources Required Local	Comments
Obtain a clear view of the problems from the senior officials and stakeholders	<ul style="list-style-type: none"> comprehensive briefings from senior officials of MININFRA and RURA, 	From 10-5-2006	Reports Policy Papers	Reports Decisions Organisation Charts	
Clear view of RURA's, staffing and operations	<ul style="list-style-type: none"> obtain information and comment on organizational structure and activities of RURA and its work program, 	From 10-5-2006	Reports Policy Papers	Reports Decisions Organisation Charts	
Clear view of MININFRA's staffing operations and policy work	<ul style="list-style-type: none"> obtain information and comment on organizational structure and activities MININFRA and the government policy work it undertakes, 	From 10-5-2006	Policy Papers on Privatisation of Rwandatel	Policy Papers on Privatisation of Rwandatel	
Review the respective work programs	<ul style="list-style-type: none"> review all relevant aspects of the respective work program and policy work, 	From 10-5-2006		Forward work program	
Preliminary assessment to provide a basis of discussion	<ul style="list-style-type: none"> prepare a paper and presentation to share with MININFRA and RURA, 	From 10-5-2006			
Initiate a strategic dialogue	<ul style="list-style-type: none"> seek feedback from officials and the private sector. 	From 10-5-2006		Comment from officials verbal and written	
International Comparison	Trends and Comparisons	31-5-2006			
(i) comparisons to benchmark regulatory activities in the ICT sector of Rwanda.	Analyze trends in comparable countries to serve as a readily available benchmark for fresh policy thinking in Rwanda.				
Benchmark neighboring countries against Rwanda	<ul style="list-style-type: none"> identify comparable countries and identify telecommunications policies and statistics, 	From 10-5-2006	Information on neighboring countries	Information on local costs etc	
Ensure Rwanda's approach is in harmony with best practice	<ul style="list-style-type: none"> research and summarize objectives of comparable developing country regulatory regimes, particularly in Africa 	From 10-5-2006		Clear information on local practices	

Objective	Activity	Target Date	Resources Required International	Resources Required Local	Comments
Ensure that legislation in Rwanda takes account of changing circumstances	<ul style="list-style-type: none"> summarize trends in regulation: move of voice from fixed line to wireless and data from wireless to fixed; the effect this is having on ICT in developing countries, 	From 10-5-2006	International comment on trends	Local legislation	
Ensure that Rwanda's approach is based on good economics	<ul style="list-style-type: none"> address issues of access, coverage, affordability and economizing on capital, 	From 10-5-2006	Economic analysis	Access to information	
Ensure that Rwanda's approach is based on what stakeholders want.	<ul style="list-style-type: none"> prepare an issues and options paper, presentations and seek feedback from officials, private sector and political leadership. 	From 10-5-2006	Examples	Local opinions	
Access to Infrastructure (ii) ensure policy allows open access to the national backbone infrastructure,	Open Access Policy Work towards guidelines for appropriate regulation of interconnection / infrastructure unbundling, licensing conditions, numbering plans, access to radio frequency spectrum	31-5-2006			
Identify what it is we are seeking access to	<ul style="list-style-type: none"> list and classify core components of the national backbone infrastructure, 	From 10-5-2006		Companies' view of backbone	
Identify current obstacles to access	<ul style="list-style-type: none"> identify obstacles to its use by existing and new telecommunications providers, 	From 10-5-2006		Feedback from Companies	
Identify strengths and weaknesses of the existing regulatory regime	<ul style="list-style-type: none"> review current regulatory regimes and the effectiveness of provisions designed to promote competitive behavior and access to essential infrastructure, 	From 10-5-2006		Regulatory details from Rwanda	
Identify policy priorities	<ul style="list-style-type: none"> identify regulatory policy priorities and report these to officials for discussion and review, 	From 10-5-2006	International Guidelines	Prioritized concerns	
Obtain a consensus	<ul style="list-style-type: none"> seek an agreed position. 	From 10-5-2006		Local commitment	

Objective	Activity	Target Date	Resources Required International	Resources Required Local	Comments
Way Forward	Review Findings	From 31-5-2006			
(iii) agree with MININFRA, RURA and the eRwanda project a Phase 2.	Phase One will serve as a guideline the forward work program. The goal will be a shared view of what is achievable.				
Identify feedback from parties	<ul style="list-style-type: none"> Collate feedback from interested parties 	From 31-5-2006		Brief statement of feedback	
Ensure the work plan incorporates stakeholder views	<ul style="list-style-type: none"> discuss, consolidate and, if necessary, revised, the work plan will be reviewed. 	From 31-5-2006		Local commitment and opinions	
FINAL RECOMMENDATION REPORT	FROM TOR: The consultant will produce specific recommendations concerning (a) the detailed implementation agenda finalizing and developing the relevant policies, legislation, regulations, procedures (telecommunications / broadcasting/ Postal/ e-legislation) and (b) and capacity building and supporting knowledge management plan for MININFRA and RURA.	07-06-2006			
e-legislation package:	E-legislation	From 31-5-2006			
(i) Define principles and philosophy of e-legislation to create an enabling environment for ICT/ knowledge-based growth.	Reviews e-legislation available, identify in principle the most helpful role governments can play. Identify the systems the government will need to cope with e-commerce, governance and government processes.				
<ul style="list-style-type: none"> identify legislative or administrative barriers to electronic delivery of government services, 	<ul style="list-style-type: none"> the consultant will identify any legislative or administrative barriers to the development of electronic delivery of government and business services, 	From 31-5-2006	International experience	Information on local work and achievements	
<ul style="list-style-type: none"> identify 2-3 approaches countries have adopted to e-legislation. 	<ul style="list-style-type: none"> examine the approaches countries have adopted to e-legislation and identify critical principles. 	From 31-5-2006	International Research	Apply principles to local work	
evaluate the e-program in operation and planned in Rwanda,	obtain a briefing on e-programs currently planned and in operation in Rwanda; evaluate them against principles identified,	From 31-5-2006		Local plans and information	

Objective	Activity	Target Date	Resources Required International	Resources Required Local	Comments
<ul style="list-style-type: none"> identify ways to increase the effectiveness of e-commerce/government 	<ul style="list-style-type: none"> review e-commerce and government programs and identify possible improvements 	From 31-5-2006	International approaches	Compare local efforts with international	
Detailed Plan (ii) capacity building and knowledge management plans / implementation: (a) MININFRA (b) (RURA).	Implementation Plan Seek implementation of measures appropriate to the situation. Where there is a consensus in their favor and there are organizations and officials prepared to promote them with decision makers.	From 31-5-2006			
<ul style="list-style-type: none"> draft roadmap for addressing barriers to ICT development 	<ul style="list-style-type: none"> prepare the draft roadmap for removal of barriers to ICT development: legislative administrative etc, 	From 31-5-2006		Local support	
<ul style="list-style-type: none"> identify legislative and administrative changes, capacity building and a knowledge management to address barriers to ICT, 	<ul style="list-style-type: none"> prepare the draft roadmap for addressing and removing barriers to ICT development, including legislative and administrative changes, capacity building and a knowledge management plan, 	From 31-5-2006		Local legislation and proposed legislation	
<ul style="list-style-type: none"> plan to meet needs of ICT work of MININFRA, RURA and the eRwanda project. 	<ul style="list-style-type: none"> ensure that the plan addresses the needs of the ICT work of MININFRA, RURA and the eRwanda project. 	From 31-5-2006		Feed back from local partners	
<ul style="list-style-type: none"> Identify the views of all interested stakeholders 	<ul style="list-style-type: none"> discuss the roadmap with all interested stakeholders and revise the roadmap where necessary 	From 31-5-2006		Feed back from stakeholders	

Appendix 3: GOR ICT Policy

GOR ICT POLICY⁵

The ICT-2020 Policy, sets out the orientation of the Government's ICT Policy and Strategies within context of the GOR's broad socio-economic development objectives within the Vision 2020 time frame of 20 years.

The Government in formulating its ICT-2020 Policy is guided by the principle that if Rwanda is to take full advantage of the opportunities of the information age and develop a vibrant multi-sectoral information and knowledge economy, it should not as a nation be just a consumer of ICT goods and services but also a producer and developer of the technology.

The GOR believes that development of a local ICT production industry and service sector is as equally important as the deployment, exploitation and utilization of the technology to support the activities of various sectors of the economy and society.

The GOR as part of its ICT policy and strategy is therefore fully committed to simultaneously pursuing both ICT Exploitation and Production policy involving: the utilization and exploitation of ICTs to support the delivery of government services and the activities of various sectors of the economy as well as the production, development and delivery of ICT products and services i.e. towards the development and promotion of an ICT industry and service sector.

The GOR will implement this ICT Policy over a period of twenty years up to the Year 2020 through the implementation of four 5 Year NICI Plans with the 1st, 2nd and 3rd NICI Plans laying emphasis on the exploitation and utilization of ICT products and services to support the delivery of government services and the activities of various sectors of the economy and the 4th NICI Plan laying emphasis on the production, development and delivery of ICT products and services.

Each of the NICI Plans will therefore have elements of ICT Utilization and Exploitation as well ICT Production and Development. But the 1st, 2nd and 3rd NICI Plans will be designed to lay emphasis on programmes, projects and initiatives that promote the utilization and exploitation of ICTs in the society and economy with the 4th NICI Plan laying emphasis on programmes, projects and initiatives targeted at accelerating the development of the ICT Production Sector to facilitate the development and production of ICT goods and services for the domestic and the export market.

The Development of the Rwandan Information Society and Economy

The adoption of the socio-economic development policy in conjunction with the ICT-2020 policy framework will facilitate the process towards the realization of the Missions of the Vision for Rwanda --- to develop Rwanda's Information Society and Economy.

The GOR is therefore fully committed to implementing this integrated socio-economic development and ICT policy within the context of the Vision for Rwanda to by the year 2020 transform Rwanda's predominantly agricultural economy into:

- A high income economy dominated by the trading in ICT products and services
- An economy characterized by a large commercial service sector with a reasonably large and vibrant, ICT service sub- sector and industry
- An economy in which the majority of the working population are either directly or indirectly involved in information and communications related activities
- An economy in which a reasonable large proportion of the population has access to information and communications technology products and services.

⁵ Obtained from http://www.rita.gov.rw/laws/ict_policy.html

- An economy in which the provision and delivery of goods and services of the key sectors of the economy are to a large extent facilitated by information and communications technologies
- An economy in which the provision and delivery of services by government and its administrative machinery are to a large extent facilitated by information and communications technologies
- A economy based on an advanced and reliable national information and communications infrastructure
- An economy based on a literate society with a high proportion of computer literate

Appendix 4: List of Principal Meetings

Date	Person	Position	Organisation
02-05-2006	Peter Fullarton	Acting Executive Director	RITA
02-05-2006	Innocent Muhizi	Deputy Executive Director	RITA
02-05-2006	François Zimulinda	Managing Director	RURA
02-05-2006	Raphael Mmasi	Director	e-Rwanda
02-05-2006	Jean Baptiste Mutabazi	Director of Communications	RURA
03-05-2006	RURA and RITA	Abortive	
08-05-2006	Jean Baptiste Mutabazi	Director of Communications	RURA
08-05-2006	RURA and RITA	Abortive	
09-05-2006	Baloko Makala	ICT	MININFRA
09-05-2006	Peter Mardadi	CEO	ISPA
10-05-2006	Jerome Bezzina	CITPO Global	World Bank
11-05-2006	Andrew Rugege	Manager	ASRTEL
11-05-2006	George Mulamula	Director	KIST ICT Center
12-05-2006	Gary Clark	COO	TERRACOM
12-05-2006	World Bank Mission		
15-05-2006	François Zimulinda	Managing Director	RURA
17-05-2006	Per Erikson	CEO	MTN
18-05-2006	John Mirenge	CEO	Electrogaz
18-05-2006	Francis Rugambwa	Chief of Dispatch	Electrogaz