
Rwanda Peering Day Meeting

Meeting Report

September 13, 2017

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2 Summary

On the 13th day of September 2017, Rwanda Information Communication and Telecommunication Association, a not-for-profit organization representing the Rwanda Internet community. It comprises different ICT institutions and individuals convened an internet stakeholders meeting with an aim to develop local internet community.

The meeting brought together stakeholders from both the public and private sectors to raise awareness as well as to share progress on maximum use of infrastructure such as the local exchange point and increased use of the Rwanda (RW) Internet domain name.

The meeting which was held at the Kigali Convention Centre and had over 50 participants despite having a target of 50 stakeholders.

This brief report highlights of what transpired at the meeting including the key outcomes. In addition, in the Annex, there are different presentations that were used for the whole event.

3 Key deliberations

The half day meeting featured three key presentations and three topical themes in the lines of:

- Rwanda Peering day introduction and update - facilitated and moderated by Nkeramugaba G., CEO, RICTA
- The internet/Digital market in Rwanda – by Nkeramugaba G., CEO, RICTA
- How to acquire IP resources - by Mrs. Madhvi Gokool, Registration services Manager, AFRINIC
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3.1 Rwanda Peering Day - Introduction and Update

The session largely covered RICTA's activities and initiatives in its role to develop the local internet sector. Among the major activities and initiatives highlighted, we can mention:

RwIGF: Rwanda Internet Governance Forum (RwIGF), an annual public forum that brings together all key stakeholders to discuss issues pertaining to Internet governance. The next RWIGF will be held later this year involving partners such as RICTA, RURA, ISOC, ICANN, ISPs, Rwanda ICT Chamber among other players.

RwNOG: Rwanda Network Operators Group (RwNOG) is an event targeting the Internet technical community

RwWH Project: Rwanda Web Hosting (RWH) Project aiming at developing local content.

EACO: RICTA regularly participates in the East Africa Communication Organization (EACO) activities. EACO plays a significant role in harmonizing ICT in the East Africa region.

EAPIF: East Africa Peering and Interconnection Forum, an event organized on the side of EACO Congress to promote Peering and Interconnection in the East Africa region (<http://www.eapif.org>)

Local CDN Caches: RICTA facilitates the localization of CDN (Content Delivery Networks) caches. Currently available local caches are: Google-YouTube and AKAMAI. RICTA is currently working on bringing a Facebook Cache and Cloudflare.

Private CERT: RICTA is working and planning to run a private CERT (around RINEX services).

Rwanda Peering Day: RICTA shall run the Rwanda Peering Day as an event to promote the development of peering (i.e. local Internet development) in Rwanda.

3.2 The Internet/Digital market in Rwanda

3.2.1 Rwanda RW Internet domain name registry

At the moment, RICTA uses the 3R Models: Registry, Registrar/Reseller and Registrant. There are about 3,300 RW Internet domain names (including gov.rw) which is quite low given the internet activity in the country. Apart from government domain names and a few private firms and non-government organizations, a majority of them are hosted overseas.

According to RDB statistics, there are around 89,000 companies and firms registered at the Company Registrar's office, whereas there are around 3,300 RW Internet domain names, which represent approximately 3.7% when comparing the two (2) numbers.

Among the top benefits of local web hosting include:

Quick loading time: Websites that are hosted in Rwanda, and that are serving content to the local users, in ideal situation, would load very quickly, compared to websites hosted a far off.

Better Search Engine Rankings: The local websites (i.e. with Rwanda (RW) Internet domain name) stand a better positioning in Search Engine because of their unique domain name in a specific country/region.

Support: One of the most important benefits of hosting with a local provider will be the availability of local support. When there is local support, the owner of the website feels a little bit more confident.

RICTA is keen on continuously engaging stakeholders to increase the number of locally hosted websites which will eventually increase the sector's contribution to the local economy.

3.2.2 Rwanda Internet Exchange

An internet exchange point is a hub where you have a high concentration of networks, that are interconnecting with each other.

RINEX has been operational since 2004 as a project under former RITA. The initiative is headquartered at Telecom House building which acts as the Virtual Landing Point.

Currently, there are 12 peers with 8 of them being local. These mostly comprise Internet service providers as well as mobile network operators.

Among the key challenges enabling and growing the local Internet include:

- Cost of IP transport: to join an IX, a network needs to lease IP capacity links from point A to B (RINEX)
- Availability of Carrier Neutral Datacenter (How easy can acquire land?)
- Cost of location space (Can host my rack and not run bankrupt?)
- Cross-border fiber (How easy is it to cross the border?)
- Policies on infrastructure (How easy is it to lay/lease fiber, put poles?)

4 How to acquire IP resources & AFRINIC Update

- AFRINIC is the Regional Internet Registry for Africa with a core mandate of allocation and management of IP Number Resources (unique identifiers on the internet) - IPv4, IPv6 & ASN.
- The organization services the African region as well as the Indian Ocean islands
- Currently the organization has 1,523 Resource Members
- Who can get IP Number resources?
- Any institution that has a network and accessing the Internet
- Banks – Interconnection of branches, consolidation of services in datacenters, provision of internet banking, uptime of online services
- Education Institutions – Interconnection of universities/schools, e-learning, use of technological tools to enhance education at all levels – primary, secondary and tertiary
- Corporates
- Governments – e-government, e-health initiatives, extension of services to remote areas (mobile internet)
- Further readings and documentations can be found on <https://www.afrinic.net>

5 Conclusion and Recommendations

The Rwanda Peering Day Forum was a successful event in terms of interactions, knowledge sharing, and insights. However, it was noticed that there is a need to continue to promote and discuss about matters related to Internet peering.

Below are some of the challenges that hinders the development of Internet peering:

- Cost of IP transport (or backhaul or local loop circuit): to join an IX, a network needs to lease IP transport capacity links from point A to B (RINEX). In the case of Rwanda, IP transport is still high, and this hinders the networks to join and connect to RINEX.
- During the meeting, the operators mentioned that the Cost of IP transport is high because of the high cost of maintaining the physical fiber (network) infrastructure.
- The lack of Carrier Neutral Datacenters, and subsequently the lack of affordable colocation space for hosting, contributes to slow development of Internet (both from a connectivity and content perspective). Some efforts have been achieved to promote the development of datacenters in Rwanda, this includes the reduction of cost of power for datacenter operators.
- The absence of policies that facilitate cross-border can hinder the development of an Internet ecosystem. With good Cross-border policies, it is easy for regional and national operators to cross the borders and either buy or sell capacity or content in the neighboring countries.
- The lack of adequate Policies and/or regulations on infrastructure deployment, usage or sharing can hinder the development of an Internet (peering) ecosystem.

6 Appendix

6.1 Concept Note for the Rwanda Peering Day

In a bid to develop the local internet community, the Rwanda Information and Communication Technology Association (RICTA) is organizing a RINEX peering session for stakeholders in the internet sector on Wednesday 13th September.

The session will be geared at ensuring that stakeholders in the internet sector make maximum use of infrastructure such as the local exchange point and increased use of the .rw domain name. The lunch session will also be a platform to raise awareness on the existence of facilities and infrastructure set up to offer stable, fast and cost-effective Internet services but also improved performance and redundancy and reduction of upstream connectivity costs, to its members.

At the session, stakeholders will also have a chance to brainstorm on possible ways to improve the local internet ecosystem with the available infrastructure.

Participants will also gain first-hand accounts of experiences and benefits of connecting to the internet exchange point from representatives of corporates who have been members of the point.

The highlight of the session will be a talk and Question and Answer session by a representative of The African Network Information Centre (AFRINIC). AFRINIC is the Regional Internet Registry for Africa and is responsible for the distribution and management of Internet number resources - IP address space (IPv4 and IPv6) and Autonomous System Numbers (ASNs) - in its service region, which includes Africa and the Indian Ocean region.

The talk will focus on how to acquire IP resources though participants will be free to engage on other matters and subjects.

6.2 Presentations

Attached below