



2012 Annual Report

**AFRINIC - the Regional Internet
Registry for Africa and the Indian Ocean**



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Badru Ntege, talks at a Press Conference at NTC Tower, Sudan

From the Chairman

It is my great honour, as Chair of Afrinic, to present the 2012 Annual Report. 2012 was a memorable year as it signalled not only my return to the board but also my election as AFRINIC Chair.

The Internet has evolved over the last thirty years, from a network that was connected only to big computers, to the infrastructure of the information society today that everyone in the world relies on. For Africa, this evolution creates both a challenge and an opportunity to change and impact the lives of a billion people. That opportunity, is what our community saw almost ten years ago when we organised to establish a regional internet registry for Africa.

AFRINIC performs a key role in our region and shoulders the responsibility of **ensuring the sustainability and growth of Internet**. To perform these responsibilities the organisation has to maintain structures that can support the call of duty and the bottom up process. It starts with the community as our key stakeholders, who elect a board which is tasked with the oversight for the organisation that does the work.

In 2012 the board evolved with the election of new members at the meeting that was held in the Gambia. We also worked on the amendment of our bylaws following a call for comments. A Council of Elders was introduced with the six former chairpersons of AFRINIC as the initial members of the council.

AFRINIC is growing as an organisation. We implemented a new structure. This brought our staff compliment to 34 members who are given opportunities to be trained in new skills or reinforce present ones. We are presently working on ISO certification.

Operatons-wise, the trend over the last two years highlighted a drop in allocations from 2011 though there was an increase in new members. We also witnessed an increase in the number of IPv6/48 prefixes issued.

The number of countries with IPv6 grew from 38 to 43.

Our training department continued to wave the AFRINIC flag by having our training programme certified by the IPv6 Forum **to give us IPv6 Forum Certified (Gold) Engineer and Trainer.**

As we continue to evaluate our service delivery, a customer satisfaction survey conducted in 2012 provided AFRINIC with valuable insights into the expected level of services by our members. 71 per cent of AFRINIC members declared to be satisfied with AFRINIC services. The feedback also highlighted service areas where AFRINIC needs to focus namely Internet number statistics, Training services, Root server deployment in the region and DNSSEC. These services are highly valued by Members. In light of the findings, AFRINIC will adequately plan for resources in its next budget.

Following our rebranding exercise, we launched the new visual corporate identity in Gambia, during the AFRINIC-16 meeting with our new website and logo. Gambia also witnessed the birth of the Africa Internet Summit (AIS) which will aim to bring together all the Af*s enabling a meeting place for the entire continent to share knowledge across a number of spectrums in the Internet space.

We continued our global outreach through participation in a number of events like our peer Regional Internet Registries (RIR) meetings, ICANN, the African Union and African Telecommunication Union (ATU), the Global IGF, Baku, Azerbaijan, 3rd African Peering and Interconnection Forum (AfPIF), Commonwealth Telecommunications Organisation (CTO) during its 10th Annual Forum in Mauritius, IPv6 World Launch to name but a few. **AFRINIC also signed an agreement with ICANN to help expand root servers in Africa. We also helped with the deployment of an L-root server in Côte d'Ivoire.**

On the infrastructure front, AFRINIC approved Resource Public Key Infrastructure (RPKI) certificate requests and also signed its zones and went live on 10 May 2012 with DS records published in ip6.arpa and in-addr.arpa zones by IANA.

Finally for the first time in the history of AFRINIC, we reported a deficit for 2012. This deficit resulted out of re-aligning our reporting standards whereby historically we were not writing off bad debt.

Badru Ntege

“AFRINIC performs a key role in our region and shoulders the responsibility of ensuring the sustainability and growth of Internet.”

Word from the CEO



Adiel A. Akplogan,
CEO AFRINIC,
speaking at
AFRINIC-17
Meeting.

“ Our efforts to increase participation and work with our community has led, this year, to the launch of the Africa Internet Summit (AIS) in cooperation with the African Network Operators’ Group (AfNOG) and the other AF* ”

Dear members and colleagues,

It is again an honour and a pleasure for me to share with you, through this report on our eighth year of operations, an overview of our achievements.

This year we can again proudly report that we have achieved our goals despite the challenges that we face operating in our region. One of these challenges that became noticeable over the year was the ability of our members to pay their membership fees in a timely manner. In 2012, we had to write-off more than US\$ 200,000 from our books, which represented the past three years' unpaid membership renewal invoices. While this combined write-off has led to a deficit in our 2012 account it has also given us the opportunity to implement a series of measures to help members pay their fees on time. This included dedicating more resources to fee collection and billing management. We expect to see the positive effects of these measures in 2013.

Despite the situation described above, we were able to visit 13 countries in our service region to deliver our recently IPv6 Forum-certified training course to more than 500 engineers and ICT decision-makers. As part of our commitment to effectively diversify the language offering of our training courses, we also brought a French-speaking trainer on board to help us improve our coverage in French speaking countries.

Meanwhile, the number of organisations using public IPv4 addresses distributed by AFRINIC increased by 13% in 2012. At the same time the ratio of members with an IPv6 address allocation increased by 14%: a good sign for the region. This continues to show that capacity building and awareness are key for IPv6 adoption in an emerging region like Africa.

Our efforts to increase participation and work with our community has led, this year, to the launch of the Africa Internet Summit (AIS) in cooperation with the African Network Operators' Group (AfNOG) and the other AF* (read AF Star) organisations. We expect to make this event, which includes the AFRINIC Meetings, the main annual gathering of all self-formed, community-led organisations that are active in promoting and carrying the flag of Internet technology usage and Internet governance in Africa. AFRINIC is committed to supporting the AIS and will use it as a platform to improve participation in the Internet Number Resources Policy Development Process.

As part of our engagement to strengthen Internet infrastructure reliability in the region, **we continued to invest in support projects and initiatives such as RPKI, Anycast root server copy, DNSSEC support (on our reverse zones) and DNS support to ccTLDs.** These projects are getting huge interest from our community and we will focus our attention further on this in coming year with the creation of a dedicated Research and Development Department.

We at AFRINIC firmly believe that the exposure and the experience we get from the management of Internet number resources needs to be shared more actively throughout the region. This is something



Adiel A. Akplogan,
CEO AFRINIC.

that was strongly requested in the first community-wide survey that we conducted at the end of 2012. The success of this survey, the first that was conducted for the wider community, means that we will make surveys a priority in our coming budgets.

This 2012 community survey was also a source of satisfaction for AFRINIC, as the overall outcome recognised the effort that all of our team is putting into delivering a high quality service. Such outcome however is not a reason for us to declare victory, but rather an encouragement to continue improving our services while addressing some of the concerns that were also raised. We will integrate the survey as a continuous community feedback tool that will be run every two years.

As we head into 2013, we are expecting some serious paradigm shifts in terms of IPv4 usage in our region. With APNIC, the RIR for the Asia Pacific region, and the RIPE NCC, the RIR for Europe, the Middle East and parts of Central Asia, already having exhausted their reserves of free IPv4 address space, we are committed to continuing providing all the necessary support to our community to be well prepared for an IPv6 Internet. **There is no doubt that IPv6 is the only long term solution for an Internet that is connecting more and more devices worldwide and where mobile Internet is allowing millions of new users in Africa to come online.**

I would like to conclude this foreword by thanking you all for supporting our activities throughout 2012, through sponsorship of, participation at or contribution to our events. This journey is a collective one and without you we cannot achieve a sustainable and successful AFRINIC.

Adiel A. Akplogan

About AFRINIC

The African Network Information Centre (AFRINIC) is the Regional Internet Registry (RIR) for Africa. It is responsible for the distribution and management of Internet number resources (IPv4 and IPv6 addresses) and ASN (Autonomous System Numbers) for the African and Indian Ocean region. It was founded in 2004 and has 34 employees.

A non-governmental, not-for-profit, membership-based organisation headquartered in Mauritius,

AFRINIC's role is to promote the fair distribution and responsible management

of Internet Protocol (IP) addresses and Autonomous System Numbers (ASN).

AFRINIC provides services to its members, mostly Internet Service Providers (ISPs) and end-users within its geographical region which covers the African continent and Indian Ocean. Its service region is divided into six sub-regions: namely Northern Africa, Western Africa, Central Africa, Southern Africa, Eastern Africa, and the Indian Ocean. The policies governing the distribution of Internet number resources are defined by the AFRINIC community and ratified by the Board of Directors.



AFRINIC Service Region

AFRINIC's core activity is to service its Members on the assignment and allocation of Internet resources. AFRINIC members include Internet Service Providers, Governments, Telcos and academic institutions operating in the African and Indian Ocean region. Additionally, AFRINIC interacts with its larger community by organising bi-annual Meetings and Trainings.

Aside from its core function, AFRINIC:

- Provides training and education services to its members to promote capacity building throughout the region
- Collaborates with other regional and international organisations on Internet related matters.
- Develops and promotes basic technical and business practice standards related to Internet number resource distribution
- Promotes and Supports a stable, secure and resilient Internet through technologies like RPKI, DNSSEC, Anycast usage

Vision, Mission and Values

Vision

Spearheading Internet technology and policy development in the African region.

Mission

To serve the African community by providing professional and efficient management of Internet number resources, supporting Internet technology usage and development, and promoting a participatory and multi-stakeholder approach to Internet self-governance.

Values

We operate with transparency, professionalism and efficiency.

We recognise and value individual contribution and teamwork.

We recognise cultural and language diversity in our region.

We are a technology-driven organisation that encourages continuous learning and innovation.

We are committed to integrity in all that we do, always and everywhere.

We value collaboration and cooperation with related organisations.

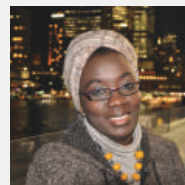
The Board of Directors

AFRINIC's activities are administered by a Board of Directors and managed by an appointed Chief Executive Officer. In 2012, new Primary and Alternate Board members were elected for the Eastern Africa and Southern Africa regions: Mr Badru Ntege and Mr Paulos Nyirenda for the Primary positions and Mr John Walubengo and Mr Mark Elkins for the Alternate position respectively. The election procedure and responsibilities of the Board are described in Article 13 of the current bylaws which can be found online at:

<http://www.afrinic.net/en/about-us/bylaws>



Nezar N. Sami



Ndeye Maimouna Diop Diagne



Janvier Ngnoulaye



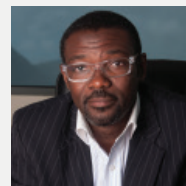
Badru Ntege



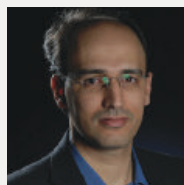
Paulos Nyirenda



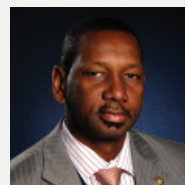
Lala Andrianamampianina



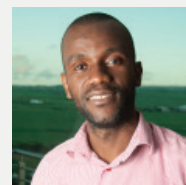
Adiel Akplogan



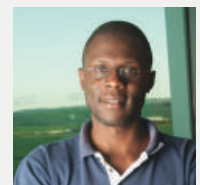
Khaled Koubaa



Alioune B. Traore



Christian Bope



John Walubengo



Mark Elkins



Krishna Seeburn

Board Composition

Primary

Name	Region	Terms
Nezar N. Sami	Northern Africa	07/2010 - 06/2013
Ndeye Maimouna Diop Diagne	Western Africa	07/2010 - 06/2013
Janvier Ngnoulaye	Central Africa	07/2011 - 06/2014
Badru Ntege (Chair)	Eastern Africa	07/2012 - 06/2015
Paulos Nyirenda	Southern Africa	07/2012 - 06/2015
Lala Andrianamampianina (Vice chair)	Indian Ocean	07/2011 - 06/2014
Adiel Akplogan	CEO	Appointed

Alternates

Name	Region	Terms
Khaled Koubaa	Northern Africa	06/2010 - 05/2013
Alioune B. Traore	Western Africa	07/2010 - 06/2013
Christian Bope	Central Africa	07/2011 - 06/2014
John Walubengo	Eastern Africa	07/2012 - 06/2015
Mark Elkins	Southern Africa	07/2012 - 06/2015
Krishna Seeburn	Indian Ocean	06/2011 - 07/2014

Legal Framework

AFRINIC is governed by a set of bylaws developed and approved by the community. In 2012, AFRINIC revisited its legal framework and issued a call for comments to the community to review the current bylaws. The discussions revolved around the composition of the Board of Directors, new Membership categories, the implementation of a Council of Elders, a mechanism for e-voting and a General Assembly for Members during AFRINIC's Annual Meeting. More details about the Council of Elders can be found online at:

<http://www.afrinic.net/en/about-us/our-structure/council-of-elders>

The current bylaws can be found online at:

<http://afrinic.net/en/about-us/bylaws>



Community member voting during elections.

Registration Services



Our IP Resource Analysts hard at work during the AFRINIC -17 Meeting.

As the Regional Internet Registry for Africa, the allocation and assignment of Internet number resources is AFRINIC's core activity. All information related to IPv4 and IPv6 addresses, AS numbers and reverse delegations are registered and made publicly available through our Whois database.

The Registration Services Unit primarily handles IP Resource Management. Its key role is to:

- Manage the AFRINIC membership process.
- Manage requests for Internet number resources (IPv4, IPv6 and ASNs) and to distribute them according to community developed policies.

Registration Services is also responsible for providing support to members and the community at large for technical matters related to the RIR function, such as reverse DNS and help with the WHOIS database. Find out more about Registration Services online at:

<https://my.afrinic.net/registration>

Three Year Overview of key services

	2010	2011	2012
New members	134	120	141
IPv4 addresses allocated	8,451,328	9,160,704	7,943,680
IPv6 /48 prefixes allocated	6,553,601	10,092,839	275,447,865
Countries with IPv6 footprint	31	38	43

In 2012, we reviewed our membership application process and plans are underway to automate some aspects of the application process. As a result, new member registration and member queries are being dealt with more smoothly and faster in general.

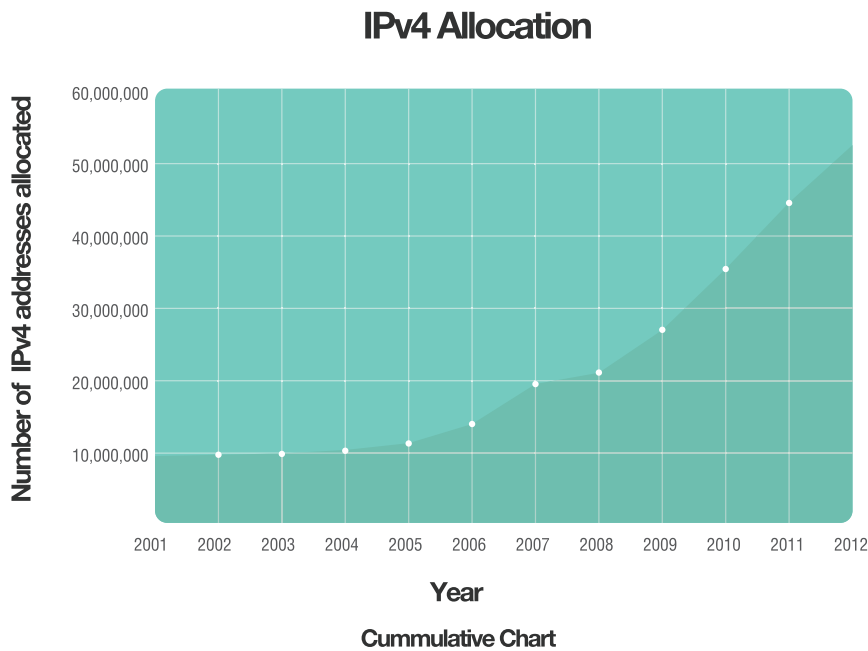
The team also produced and published a Member Guidebook that outlines AFRINIC's services, practices and commitments. It provides information on the tools and services offered to members to manage their membership and IP resources more efficiently. This guidebook can be found online at:

http://www.afrinic.net/images/doc/factsheets/ms_guide_book.pdf

Statistics and Data 2012

IPv4

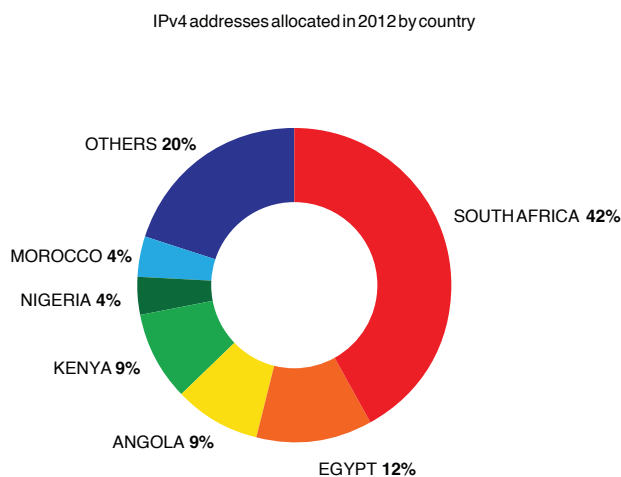
The demand for and consumption of IPv4 address space were consistent with the region's network growth in 2012. A total of 7,943,680 IPv4 addresses were allocated to members, representing a 13% decrease compared to 2011 when 9,160,704 IPv4 addresses were allocated. As of the end 2012, a total of 52.4 million IPv4 addresses have been allocated by AFRINIC since 2001.



Year	Total IPv4 Allocated
2001	9,490,432
2002	9,676,288
2003	9,862,144
2004	10,335,488
2005	11,279,616
2006	13,922,816
2007	19,454,720
2008	21,006,848
2009	269,17,376
2010	35,368,704
2011	44,529,408
2012	52,473,088

Total IPv4 Addresses Allocated in the region: 2001 – 2012

The distribution of address space issued in 2012 per economy follows the usual regional trend, with South Africa allocated the largest amount with 42%. Egypt received 12% of the total. More than 50% of the space was issued to economies in North and Southern Africa. There was an increase in IP resource allocation in the other regions, who received over 40% of the allocated address space compared to 20% in 2011.



IPv4 addresses allocated in 2012 by country

Economy	IPv4 addresses allocated
South Africa	3,380,224
Egypt	918,784
Angola	710,656
Kenya	698,112
Morocco	327,936
Nigeria	327,168
Others	1,580,800

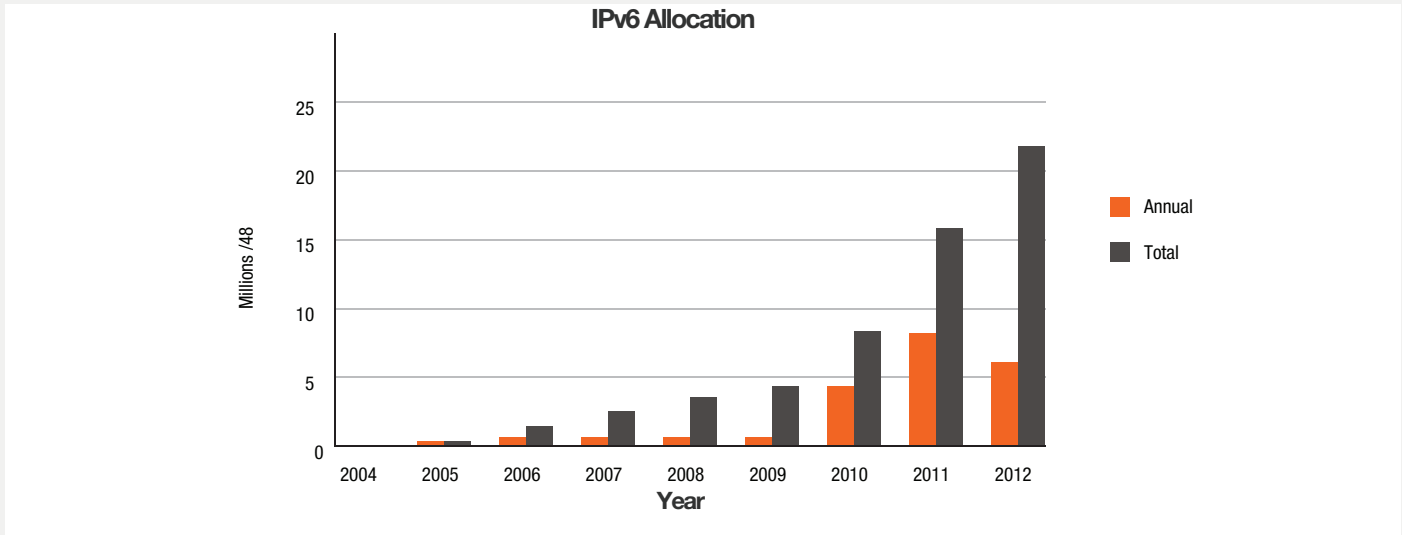
IPv6

The exhaustion of the IANA IPv4 address pool in February 2011 saw an immediate interest and increase in the allocation of IPv6 address space in the region. Looking at the IPv6 consumption rates over a 3-year period (2009–2012), consumption increased tenfold by 2012.

Equally as important, the number of African economies where an IPv6 prefix has been allocated (to an ISP or

end-user) rose to 43 (from 38 in 2011). This translates to a potential IPv6 coverage of 80% in Africa per country, a big leap from 50% in 2009. Find out more about IPv6 in the AFRINIC region on page 15 and at:

<http://afrinic.net/en/services/ipv6-programme>

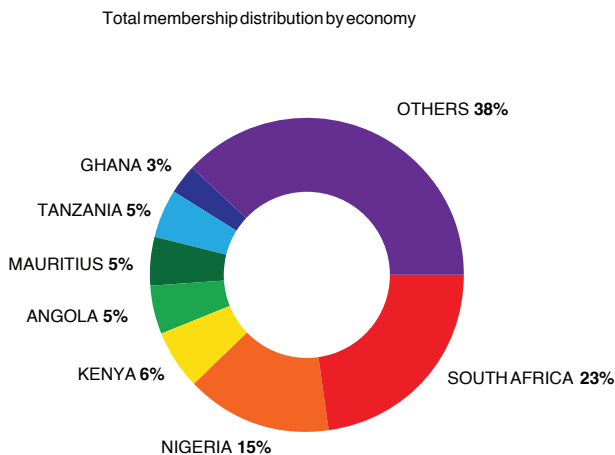


AS Numbers

We assigned 145 ASNs, six of which were 32-bit. From 2011, we removed the option for specifying a 16 or 32-bit ASN from the ASN request forms. We now issue all AS numbers from a common 32-bit ASN pool. However, due to the incompatibility of some equipment with the higher bit order 32-bit ASNs, we allow, on a case-by-case basis, members to swap higher bit with lower bit order 32-bit ASNs.

Membership

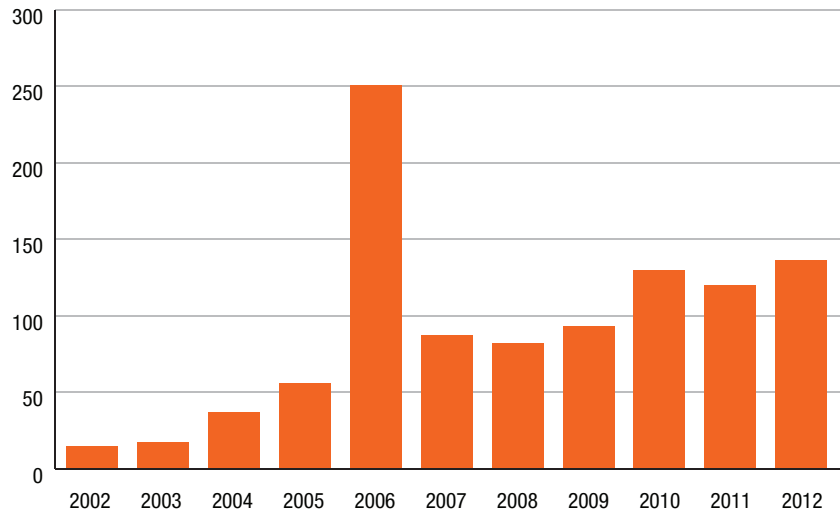
AFRINIC members are Internet Services Providers (ISPs) and End-users within its service region, which covers the African continent and Indian Ocean. One hundred and thirty-six (136) new members signed up in 2012 representing a 13% increase on the 120 who signed up in 2011.



New Members per economy in 2012

Country	New members
South Africa	32
Nigeria	21
Kenya	8
Angola	7
Mauritius	7
Tanzania	7
Ghana	5
Others	49

Membership Growth



Members (Totals)	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Total	136	120	130	93	82	87	251	56	37	17	15

More information about our membership can be found online at:

<http://afrinic.net/en/services/rs>

Membership Survey 2012

TNS Analysis, an external agency, conducted a Member Satisfaction Survey on behalf of AFRINIC in 2012. The survey provided AFRINIC with valuable insights into the level of service expected from its Members.

The survey results showed that 55% of AFRINIC Members are satisfied with AFRINIC services and 16% stated they were very satisfied. The feedback highlighted service areas which include:

- Internet number resource statistics
- Training services
- Root server deployment in the region
- DNSSEC

These services are highly valued by Members. In light of the findings, AFRINIC will adequately plan for resources in its next budget.

For more information about the survey please see:

<http://afrinic.net/en/library/news/792-afrinic-stakeholder-satisfaction-survey-2012>

Capacity Building

AFRINIC has an extensive training program and provides free training on Internet Number Resources Management (INRM) and IPv6 Planning and Deployment to over 600 network engineers in its service region per year. Our training courses are always growing to support the evolving technologies related to Internet resources, including Domain Name System Security Extensions (DNSSEC) and Resource Public Key Infrastructure (RPKI). We conduct trainings in three languages: English, French and Arabic.

Training network engineers in IP number resource management and IPv6 deployment is just one of the ways in which AFRINIC spearheads Internet technology development throughout Africa.

Training

In 2012:

- A new trainer was hired to conduct trainings in French
- The IPv6 training programme was IPv6 Forum Certified
- An AFRINIC Engineer and Trainer got their IPv6 Forum Certified (Gold)
- learn.afrinic.net, our dedicated training website, was launched
- The IPv6 for Systems Administrators programme for the IPv6 Forum was designed. This has now been adopted globally
- We received training equipment worth over \$60,000 (18 Cisco 1941 routers, 4 Cisco 2911 routers and 8 UCS servers)
- We facilitated a strategy and planning session for the IPv6 Task Force of South Africa
- The IPv6 courses were completely redesigned

13

Countries

15

Workshops

+500

Participants

AFRINIC Training Courses 2012

Location		Date	Local Host
Banjul	12-14	May 12	AFRINIC-16
Cairo	28-31	May 12	Egyptian National Telecommunications Regulatory Agency (NTRA)
Cape Town	18-21	Jun 12	ISOC-ZA & Vanila
Ouagadougou	25-28	Jun 12	ARCEP & ONATEL
N'djamena	18-21	Jul 12	AUF & Skyvision
Abidjan	21-24	Aug 12	Initiatives pour la Gouvernance de l'Internet en Côte d'Ivoire (IGICI)
Lome	21-23	Aug 12	ARTP
Nairobi	28-31	Aug 12	Telecommunications Services Providers Association of Kenya (TESPOK)
Lagos	11-14	Sept 12	EKO-KONNECT and the University of Lagos (UNILAG)
Kinshasa	9-12	Oct 12	ISPA-DRC
Mauritius	29 Oct-01	Nov 12	National Computer Board
Cape Town	5-9	Nov 12	Mweb
Kampala	13-16	Nov 12	Ministry of ICT
Khartoum	24-27	Nov 12	AFRINIC-17

Find out more about AFRINIC Training at:

learn.afrinic.net

IPv6 Programme

AFRINIC continues to promote IPv6 deployment in the region through its IPv6 Programme and IPv6 Training. During 2012, the percentage of networks that have IPv6 enabled in the African region increased to 14% from 12% in 2011. Find out more about AFRINIC's IPv6 Programmes at:

<http://afrinic.net/en/services/ipv6-programme>

IPv6 World Launch Day

During the IPv6 World Launch Day, held on 6 June 2012, AFRINIC hosted a regional conference at its headquarters in Mauritius. Speakers from major Internet players across Africa gathered to share their points of view on the future of the Internet through IPv6. More information about IPv6 Launch Day can be found at:

<http://afrinic.net/en/library/news/732-afrinic-celebrates-ipv6-world-launch>



African IPv6 Task Force

AFRINIC has driven the initiative to create the African IPv6 Task Force (AF6TF) dedicated to encourage IPv6 deployment in the African region and to serve as a regional consolidated platform for knowledge and best practice exchange.

AFRINIC's IPv6 Programme volunteered to run all secretariat work for the Task Force, along with providing the hosting platform for the task force's services. More information about this task force can be found at:

<http://www.afrinic.net/en/library/news/press/695--launch-of-the-african-ipv6-taskforce>



IPv6 Webinars

In 2012, AFRINIC, Internet Society and France Telecom teamed up to organise five IPv6 Webinars (three in English and two in French) in an effort to ignite African IPv6 initiatives and activities. Around 250 remote participants took part. The webinars were designed to assist African operators with their adoption plans through sharing best experiences and practices within the Africa region.

The webinars were conducted on a monthly basis and were held from April 2012 to October 2012. Each session, divided into two equal sessions, lasted 90 minutes. The webinars featured expert presentations and experiences as well as open discussion. Find out more about the webinars at:

<http://afrinic.net/en/services/ipv6-programme>

Learn more about the IPv6 training modules at:

<http://learn.afrinic.net/index.php/en/learn-modules/for-system-administrators>

Policy Development

Policy Development Process

The policies governing AFRINIC's activities are developed through an open Policy Development Process (PDP). Elected Board members ratify accepted policies. Policy discussions are conducted via Public Policy Meetings and email discussion lists. Anybody can propose and discuss policy matters related to resource management in the AFRINIC's service region.

Public Policy Meetings are organised twice a year (one back-to-back with the General Assembly). A crucial part of the policy development process is the face-to-face discussions of the proposals during the Public Policy Meetings. At these meetings, consensus on the proposals is sought. If consensus is reached, then a Last Call is issued on the mailing list. The final step is ratification by the AFRINIC Board of Directors.

One of AFRINIC's key activities is providing support to the bottom-up policy development process through the Resource Policy Discussion (rpd) mailing list which was very active in 2012. To participate you must subscribe to the Resource Policy Discussion (rpd) mailing list, which can be found online at:

<https://lists.afrinic.net/mailman/listinfo.cgi/rpd>

Earnest Byaruhanga, AFRINIC's
Policy Liaison Manager

Proposed Policies

In 2012, five policies were discussed.

- **AFPUB2012-V4-002-DRAFT-01** : Redefine Core DNS Service Provider
- **AFPUB-2012-V4001-DRAFT-01** : Anycast Assignments in the AFRINIC service region
- **AFPUB-2012-DNS-001-DRAFT-01** : No Reverse Unless Assigned
- **AFPUB-2012-GEN-001-DRAFT-0** : AFRINIC Whois Database clean up
- **AFPUB-2012-GEN-002-DRAFT-02** : Regional Internet Registry Privacy

None of the above proposals gained consensus during the AFRINIC 17 Public Policy meeting held in Khartoum, Sudan, in November 2012.

Withdrawn Policies

The following proposals were withdrawn by their authors in December 2012:

- **AFPUB012-v4-002-DRAFT01** : Redefine core DNS Service Provider
- **AFPUB-2012-GEN-002-DRAFT-02** : Regional Internet Registry Privacy

Implemented Policies

The policy proposal AFPUB-2010-GEN-006: Abuse Contact Information in the AFRINIC WHOIS database was implemented in March 2012.

This policy documented how members can publish abuse contacts for their Internet number resources in the AFRINIC WHOIS database. This helps the community in knowing where to report network abuse incidents from a particular IP address or network as and when they occur.

More detail about this is available at:

<http://www.AFRINIC.net/en/community/policy-development/policy-support-guides/765-abuse-policy-bcp>

Archives of all policy discussion in 2012 can be accessed at:

<https://lists.AFRINIC.net/pipermail/rpd/2012/date.html>



Dr George Nyabuga, AFRINIC's
Head, Communications and PR

Communications and Public Relations Activities

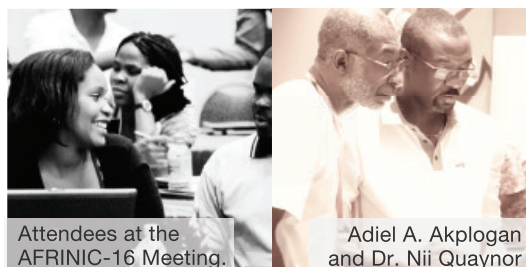
Events

Two Public Policy Meetings were held during 2012. These were very successful meetings and continued to demonstrate and reinforce the fact that AFRINIC continues to play a critical role in Internet development in Africa. The meetings also gave participants the opportunity, both onsite and those who participated remotely, to engage with each other on a range of issues relating to Internet number resources, their use, management, and the overall impact of the Internet and related technologies in Africa and around the world.

AFRINIC-16

The AFRINIC-16 Public Policy Meeting was held in Serekunda, The Gambia from 12 to 18 May 2012. 284 people attended the plenary sessions and approximately one hundred people attended the trainings. Most of the attendees came from the education and telecommunication sectors.

The meeting included trainings and a one-day closed-door meeting for the African Government Working Group (AFGWG). The AFGWG is a group for government officials from several African countries. The AFRINIC-16 plenary sessions discussed policy issues relating to Internet resources, AFRINIC Board of Directors Elections and AFRINIC corporate updates as well as debates on several issues such as IPv6 deployment, Internet governance, E-voting, AFRINIC bylaws, RPKI and DNSSEC deployment amongst others.



Attendees at the AFRINIC-16 Meeting.

Adiel A. Akplogan and Dr. Nii Quaynor

NII Service Award

During the AFRINIC-16 Meeting, the fourth Network Information and Infrastructure Service Award (NI&I SA) was awarded to Alain Aina in recognition for his contribution to improving Internet connectivity, development and sustainability in Africa.

AFRINIC-16 was hosted by QCELL in partnership with GAMTEL, the Gambian Public Utilities Regulatory Authority, the Gambian Ministry of Information and Communication Infrastructure, Internet Society (ISOC), the University of the Gambia, Information Technology Association of The Gambia (ITAG), and ISPAG. Dot Africa, Internet Society, Afiliás, the Gambian Public Utilities Regulatory Authority, Internet Solutions, QCELL, GAMTEL and Unique Solutions sponsored the event.



Alain Aina, winner of the fourth NII Service Award.

More information can be found at:

www.niiserviceaward.org

<http://meeting.afrinic.net/afrinic-16>

Africa Operators Day

The first Africa Operators Day was also held during AFRINIC-16 on May 16. This introduced key issues on technical aspects of the Internet. This event mainly targeted Operators, regulators and decision makers in Africa. The Operators Day provided an open platform to discuss, debate and agree on the way forward with the region on a number of the most essential and critical issues facing our region (IPv6, Cyber security, Peering and Interconnection).

More information on the AFOPs agenda at:

<http://meeting.afrinic.net/afrinic-16/?q=content/session-plan>

The Africa Internet Summit (AIS)

The Africa Internet Summit (AIS) was officially launched at the AFRINIC-16 Meeting. The Africa Internet Summit combines conference, training and networking for the community. The annual Africa Internet Summit is a forum where major development issues faced by Africa are discussed. The forum provides a business-oriented structure bringing together numerous stakeholders including policy-makers, operators, regulators, technical experts, ISPs, government, and civil society representatives.



More information can be found at:

<http://internetsummitafrica.org>

AFRINIC-17

The AFRINIC-17 Public Policy Meeting was held in Khartoum, Sudan, from 24 to 29 November. Over 150 people from 28 countries attended the Meeting. Most of the participants came from education and telecommunications sectors. The meetings included technical trainings and plenary sessions. Policy discussions and presentations on Internet related topics took place. A day was dedicated to operators in Africa where Internet technical issues and various challenges and opportunities in the Africa region were discussed.

The local host for the event was the National Telecommunication Corporation (NTC) of Sudan. The meeting was partly sponsored by DotAfrica, Sudatel, Seacom, Internet Society, and Vision Valley.



More information can be found at:

<http://meeting.afrinic.net/afrinic-17>

AfricaCom 2012

AFRINIC once again participated at the AfricaCom event in Cape Town, South Africa from 13–15 November. AFRINIC's booth attracted hundreds of people. During this event, AFRINIC was awarded the second prize in Best Pan African Initiative category.



More information about this event can be found at:

<http://africa.comworldseries.com>

African Peering and Interconnection Forum (AfPIF)



AFRINIC participated in the 3rd African Peering and Interconnection Forum (AfPIF) in Johannesburg, South Africa, held from 22–24 August. AfPIF is aimed at addressing key interconnection, peering, and traffic exchange opportunities and challenges on the continent and provides participants with global and regional insights for maximising opportunities that will help grow Internet infrastructure and services in Africa. AFRINIC had a booth at the event, and more than 60 people visited the booth during the meeting. More information about the event can be found at:

<http://www.internetsociety.org/events/afpif-2012>

Find out more about the NRO:

www.nro.net

CTO Forum in Mauritius

AFRINIC has been working closely with a number of organisations to promote Internet technology uptake in Africa and capacity building to ensure such technologies are meaningful and helpful to the people utilising them. AFRINIC partnered with the Commonwealth Telecommunications Organisation (CTO) during its 10th Annual Forum in Balaclava in Mauritius to provide IPv6 training to its delegates. The training on IPv6 Strategy and Planning examined the adoption and management of IPv6 as well as its importance for the future of the Internet. The delegates were also taught how to enhance government production of IPv6 strategic plans/roadmaps.

AFRINIC was also a silver sponsor of the meeting and had a booth at the venue of the event. More than 80 delegates visited the booth during the duration of the meeting.

More information can be found at:

<http://www.cto.int/events/previous-events/cto-past-events-2012/10th-annual-cto-forum/>

Internet Governance Forum



The Global IGF took place in Baku, Azerbaijan, from 6–9 November. AFRINIC participated together with the other four Regional Internet Registries (RIRs) as the Number Resource Organization (NRO). The NRO has been an active supporter and participant of the Internet Governance Forum (IGF) since the first event in 2006. Find out more about AFRINIC's participation:

<http://www.intgovforum.org/cms/session-reports>

Find out more about the IGF:

<http://www.intgovforum.org/>

Projects

Fund for Internet Research and Education (FIRE)



FIRE is AFRINIC's flagship programme that gives Grants and Awards in recognition of innovative ICT projects that contribute to development in Africa.

The first FIRE Programme Award was given to Pan African Medical Journal during the IGF, who was the winner in the e-development category.

More information about the FIRE program can be found at:

<http://www.fireafrica.org/>



Rebranding

Seven years after AFRINIC was established, it undertook a visual rebranding exercise with the aim to enhance the dynamism and the interconnections evident in the Internet ecosystem. The new branding was launched at AFRINIC 16 Meeting. The exercise also changed the way the organisation's name is used from AfriNIC to AFRINIC. The logo, colours and other materials were changed. The company also developed a new website that reflects the changes, which was launched on 17 May.



Technical Operations



Neriah Sossou, AFRINIC's
Head IT and Engineering

The Technical Operation Department is responsible for the management and maintenance of the key technical activities and the technical infrastructure of AFRINIC.

Resource Public Key Infrastructure (RPKI)

RPKI is offered through a full-hosted environment via the MyAFRINIC portal. Once activated, members are able to use RPKI to view resource certificates and sign Route Origin Authorizations (ROAs).

The system takes care of all the crypto operations such as certificate requests and renewals, re-keys and objects publication in the repository (`rsync://rpki. AFRINIC.net`).

Members require identity certificates issued through our Business Public Key Infrastructure (BPKI) to access the resources certification sub-section.

See more information on the Resource certification initiative at:

<http://www.afrinic.net/en/initiatives/resource-certification>

AFRINIC approves BKPI certificate requests from an administrative contact (admin-c) who in return approves requests for other contacts of their organisation.

In 2012, the team focused on the provision of high-level services including maintaining our repository, fixing bugs, compliance to RFCs and providing assistance to members. There was also RPKI community engagement during the AFRINIC-16 and AFRINIC-17 meetings.

By the end of 2012, 22 members were issued with RPKI certificates, which were used to sign 20 valid Route Origin Authorisations (ROA).

Domain Name System Security Extensions (DNSSEC)

AFRINIC manages and publishes Reverse DNS (RDNS) zones data for the IP space it allocates or assigns to members. DNSSEC deployment at AFRINIC aims to:

- **Sign these zones.**
- **Publish Delegation Signer (DS) records in parent zones.**
- **Accept Delegation Signer (DS) records from our members.**

It allows the community to validate authoritative DNS data from AFRINIC's RDNS zones and members to publish DS records in order to build the chain of trust for their RDNS zones.

AFRINIC signed its zones and went live on 10 May 2012 with DS records published in ip6.arpa and in-addr.arpa zones by IANA.

Members can sign their RDNS zones and push DS records to parent zones by updating their domains objects in the WHOIS database.

By the end of the year, AFRINIC signed 49 DS records for 13 domains from two members.

For more information see:

<http://www.afrinic.net/en/initiatives/dnssec>

MyAFRINIC portal

The MyAFRINIC portal offers a 24/7 easy-to-use online service to AFRINIC members to manage their resources. In 2012 the Technical Operations team added a number of features which have made the portal more functional. These included a new online voting system, RPKI Route Origin Authorization (ROA) and billing accounting interface.



Internet Engineering Task Force (IETF)

AFRINIC is involved in IETF activities through the working groups. During 2012, AFRINIC was represented at IETF-83 and IETF-84 with the focus on issues including 6man, v6ops, sidr, dnsex, and dnsop.

The Numbers Resources Organization's Engineering Coordination Group (ECG) meetings also took place during these IETF meetings. Topics included coordinated activities as well as discussions with ICANN/IANA.

Find out more about the IETF at:

<http://www.ietf.org>

Domain Name Service (DNS) Programme

AFRINIC continued with the operation of its three distinct DNS programmes for the African region as part of its commitment to improving Internet infrastructure. These were:

- The African Root Server Copy (AfRSCP)
- The AFRINIC supported RFC5855 servers
- The African Critical Infrastructure DNS Support Programme (AfDSP).

The AfRSCP aims to support local Internet communities by facilitating Root Server Copies within local communities. In 2012, AFRINIC redefined its eligibility criteria for participating in the project by extending the programme to areas that do not have Internet Exchange Points (IXPs).

AFRINIC signed an agreement with ICANN to help expand root servers in Africa. AFRINIC also helped with the deployment of an L-root server in Cote d'Ivoire in 2012.

RFC5855 describes a stable naming scheme for the name servers that serve the IN-ADDR.ARPA and IP6.ARPA zones. AFRINIC supports the Internet community by managing the 'C' servers for this critical Internet service. Since 2010, AFRINIC has provided .IP6 arpa and in-arpa. IP6 services. In 2012, there was a substantial growth in IPv6 usage in the 5855 service.

The DNS Support programme aims to help ccTLDs with Internet resources bolster their infrastructure by providing a free secondary/slave. In 2012 AFRINIC collaborated with 13 ccTLDs in the African region.

Find out more about AFRINIC's DNS Programme at:

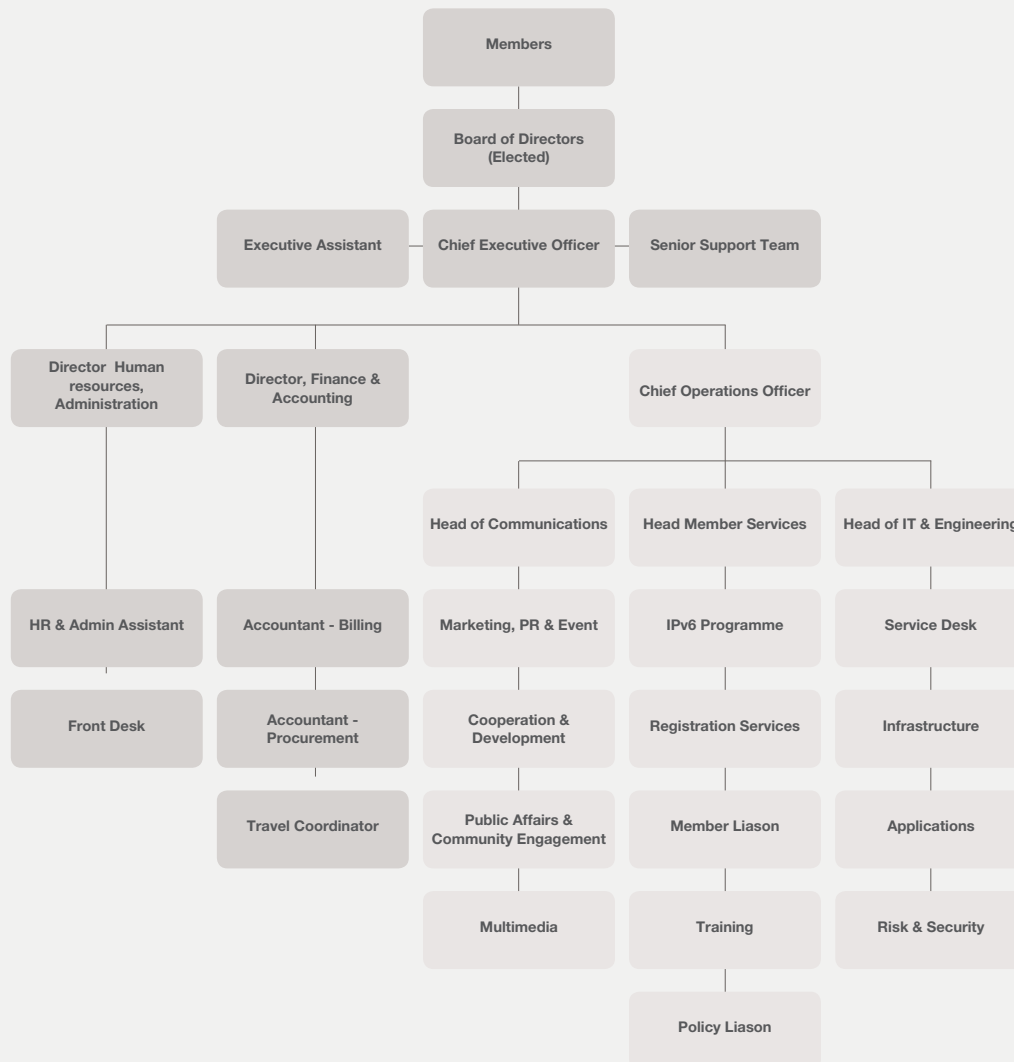
<http://www.afrinic.net/en/initiatives/dns-support>



Human Resources

Christian Fanchette, AFRINIC's
HR and Admin Director

AFRINIC Organisational Structure



With 34 employees at year-end 2012, there was a significant growth in the workforce in line with the new organisational structure

Of the 13 new hires:

- 2 were in the Communications department
- 2 were in the CEO's Office
- 2 were in the Human Resources department
- 1 was in the Member Services department
- 6 were in the IT & Engineering department

HR Projects

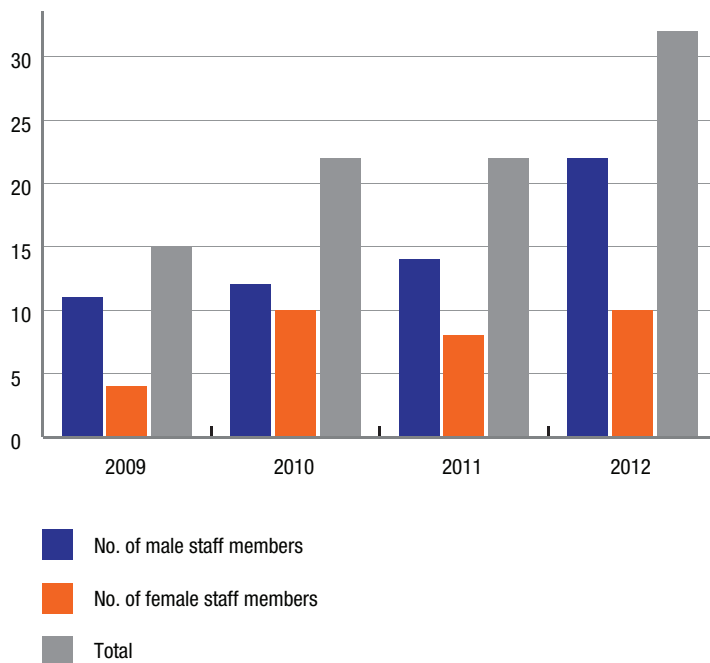
In 2012, the HR Department embarked on implementing new projects in line with improving operational efficiency, namely the:

- International Standardization for Organization (ISO) certification (ISO 9001:2008);
- Performance Management system with corporate objectives based on Kaplan/ Norton Balanced scorecard. The Performance Management System is also composed of measurable objectives (Key Result Areas and Key Performance Indicators) and the 360 degrees appraisal system for competencies and behavioural skills;
- Human Resources Management System (HRMS).

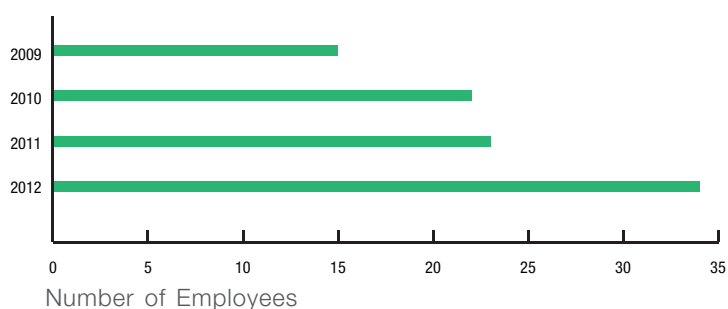
Staff Training

In addition, staff was trained in Marketing, ISO, Basic Accounting, Ethical hacking, Cybercrime, Sage Pastel, Creative Master Tours, and VMware.

AFRINIC Gender balance from 2009 to 2012



Number of AFRINIC employees from 2009 to 2012



A close-up photograph of a man with short dark hair and glasses, wearing a white button-down shirt and an orange lanyard. He is speaking into a black microphone with a red top. The background is a light-colored, textured wall.

Finance

Membership Fees Income

Membership fees income grew to **US\$ 2,636,032** reflecting a modest growth of 7.4% (lower than in the previous years' of 9%). The slowdown in new member intake coupled with the reclaim of resources from members due to non-payment have impacted the growth. The actual reason for the increase in number of closed members is noted with concern and researched.

It is envisaged that such a tendency is not of a permanent nature as business in general settles

down and finds an adjusted equilibrium. Income from sponsorships has shown a respectable increase, reflecting both an enhanced confidence from our partners and additional effort from the team. The approaching exhaustion of IPv4 in the region will continue to have an important impact in the growth of Membership fees income in the coming years as existing members are increasing their resource holdings.

Operating Costs

Total Operating Costs increased by 32.3% from last year, from US\$ 2,389,663 to US\$ 3,161,186. The impact of the new organisational structure was felt by an increase in Staff Costs (44.5%).

Other costs which contributed to the increase in Operating Costs included Travel Expenses and Contribution & Sponsorship. In addition, during the year, Bad Debts written off amounted to \$108k, the highest ever recorded. The bad debts written off related to unpaid fees and resources thereof have been reclaimed. **51 members were closed during the year.** Effectively this means a slight drop in the number of members and inevitably negatively impacts future fees income. It is expected that the number of reclaimed resources will be at a much lower level in the coming years.

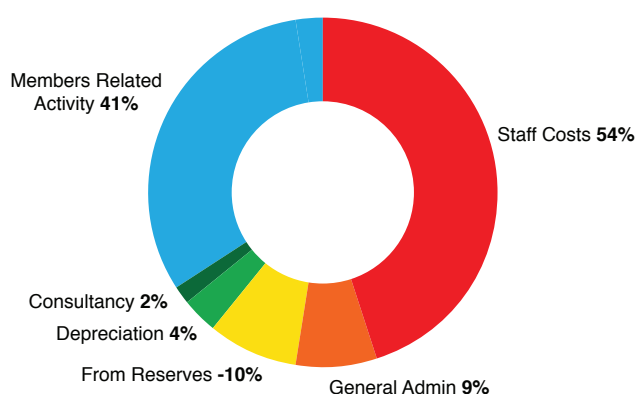
Prospects

With the structure fully implemented, the focus now is turned to the delivery of ongoing projects and increase of membership base. Every effort will concentrate on reaching out and bringing in new members with continued emphasis on service levels. In addition to the adoption of a stricter Costs control discipline, the next few years will be devoted to improve fee collection. A more systematic and structured approach will be implemented to eliminate or reduce the incidence of fees non-payment.

The Bottom line

For the first time, AFRINIC ended the year with a deficit of \$ 263k (2011 surplus of US\$ 3,822, 2010 US\$ 39,348). Two main factors can be attributed to the negative result; the level of bad debts written off and a lower number of new members. Although Travel expenses reflected an overrun on the whole all other costs were kept under control. Consequently, total Reserves were reduced to \$ 1,168K from US\$ 1,431K in 2011. During the year under review, US\$ 309K (2011 US\$ 48K) was spent on infrastructure. **The capital expenditure being reported included US\$ 93K** of software developed in house. However, investment in Capital is expected to be accelerated in the coming years as the ongoing tech refresh program and improvements to our redundancy plan enter its advanced stage. These investments are in line with our commitment to continue to provide improved service levels and efficiency.

Utilisation of Members Fees - 2012



	Projection								
	2013	2012	2011	2010	2009	2008	2007	2006	2005
	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$
Fee Income	3,331,308	2,636,032	2,453,781	2,258,867	1,754,902	1,365,891	1,346,027	832,131	457,336
Grants & Sponsorship	159,000	121,931	56,653	129,388	151,989	63,971	111,516	211,058	249,904
Total Operating Expenses	(3,220,154)	(3,161,186)	(2,389,663)	(2,321,408)	(1,767,422)	(1,311,707)	(1,042,925)	(682,028)	(419,732)
Finance Income and (Other Costs)	15,000	140,132	(116,949)	(27,500)	(125,312)	174,271	(140,757)	108,213	62,400
Surplus Reserves at end of year	285,154	(263,091)	3,822	39,348	14,157	292,426	273,861	469,374	349,908
Total Reserves at end of year	1,453,175	1,168,021	1,431,112	1,427,290	1,387,942	1,373,345	1,254,802	962,025	528,289
Reinvestment in infrastructure	340,000	244,673	48,958	346,203	29,827	34,230	31,195	62,537	30,112

Financial Summary

Statement Of Assets And Liabilities, Year Ended 31 December 2012,

Financial Summary

	Year Ended 31 December 2012		Year Ended 31 December 2011	
	MUR	US \$	MUR	US \$
Assets				
Non-current assets				
Plant and equipment	13,061,593	\$435,386	9,753,838	\$325,128
Intangible assets	2,266,427	\$75,548	67,995	\$2,267
	15,328,020	\$510,934	9,821,833	\$327,394
Current assets				
Trade and other receivables	18,166,684	\$605,556	11,093,048	\$369,768
Bank Deposits	0	\$0	18,071,440	\$602,381
Cash and cash equivalents	23,992,836	\$799,761	14,678,626	\$489,288
	42,159,520	\$1,405,317	43,843,114	\$1,461,437
Total assets	57,487,540	\$1,916,251	53,664,947	\$1,788,832
Reserves and Liabilities				
Revenue reserves	(4,653,124)	\$(155,104)	3,239,601	\$107,987
Other reserves	39,693,750	\$1,323,125	39,693,750	\$1,323,125
Grant	0	\$0	0	\$0
Total assets attributable to members	35,040,626	\$1,168,021	42,933,351	\$1,431,112
Non Current liabilities				
Finance Lease obligation	1,142,664	\$38,089	0	\$0
Current liabilities				
Finance Lease obligation	226,651	\$7,555	0	\$0
Trade and other payables	21,077,599	\$702,587	10,731,596	\$357,720
Total liabilities	21,304,250	\$710,142	10,731,596	\$357,720
Total reserves and liabilities	57,487,540	\$1,916,251	53,664,947	\$1,788,832

Surplus And Loss Statement - Year Ended 31 December 2012

Annex (USD comparatives)

	Year Ended 31 December 2012		Year Ended 31 December 2011	
	MUR	US \$	MUR	US \$
Income				
Membership fees	79,080,963	2,636,032	73,613,420	2,453,781
Grants	3,657,942	121,931	1,699,604	56,653
	<u>82,738,905</u>	<u>2,757,963</u>	<u>75,313,024</u>	<u>2,510,434</u>
Administrative expenses				
Human Resources	(44,337,704)	(1,477,923)	(30,691,652)	(1,023,055)
Telephone & Communications	(1,775,823)	(59,194)	(2,251,744)	(75,058)
Computer expenses	(25,941)	(865)	(324,719)	(10,824)
Office expenses	(7,904,199)	(263,473)	(7,822,140)	(260,738)
Motor Vehicles expenses	(199,704)	(6,657)	(154,278)	(5,143)
Insurances	(131,848)	(4,395)	(165,119)	(5,504)
Printing, postage & stationery	(713,947)	(23,798)	(590,442)	(19,681)
Bank charges	(685,119)	(22,837)	(587,138)	(19,571)
Audit fees	(145,530)	(4,851)	(386,478)	(12,883)
Depreciation	(3,656,706)	(121,890)	(2,033,255)	(67,775)
Legal & Consulting fees	(1,559,441)	(51,981)	(4,421,402)	(147,380)
LIR Training	(2,200,838)	(73,361)	(504,086)	(16,803)
Total Administration Expenses	<u>(63,336,800)</u>	<u>(2,111,227)</u>	<u>(49,932,454)</u>	<u>(1,664,415)</u>
Distribution expenses				
Advertising expenses	(588,922)	(19,631)	(1,350,525)	(45,018)
Bad debts	(3,239,817)	(107,994)	(767,259)	(25,575)
Meeting and seminars expenses	(3,049,879)	(101,663)	(5,956,738)	(198,558)
Contribution & Sponsorship	(3,778,695)	(125,957)	(2,055,735)	(68,524)
Travelling expenses	(20,841,464)	(694,715)	(11,627,182)	(387,573)
Total Distribution Expenses	<u>(31,498,777)</u>	<u>(1,049,959)</u>	<u>(21,757,438)</u>	<u>(725,248)</u>
Total Operating expenses	<u>(94,835,577)</u>	<u>(3,161,186)</u>	<u>(71,689,893)</u>	<u>(2,389,663)</u>
Other Income/Expenses				
Interest income	757,920	25,264	597,919	19,931
Exchange (Loss)/Gain	3,471,852	115,728	(4,956,137)	(165,205)
Other (Costs)/income	(25,824)	(861)	849,744	28,325
Total Other Income/Expenses	<u>4,203,948</u>	<u>140,132</u>	<u>(3,508,474)</u>	<u>(116,949)</u>
(Deficit)/Surplus for the period	<u>(7,892,724)</u>	<u>(263,091)</u>	<u>114,657</u>	<u>3,822</u>



3. INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF AFRICAN NETWORK INFORMATION CENTRE (AfrinIC) LTD

Report on the Financial Statements

We have audited the financial statements of African Network Information Centre (AfrinIC) Ltd (the "Company") on pages 5 to 25 which comprise the statement of financial position as at December 31, 2012 and the statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended and a summary of significant accounting policies and other explanatory notes.

Directors' Responsibility for the Financial Statements

The directors are responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards and in compliance with the requirements of the Companies Act 2001, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the company's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the directors, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements on pages 5 to 25 give a true and fair view of the financial position of the Company as at December 31, 2012 and of its financial performance and cash flows for the year then ended in accordance with International Financial Reporting Standards and comply with the Companies Act 2001.

Other matter

This report, including the opinion, has been prepared for and only for the Company's members, as a body, in accordance with Section 205 of the Companies Act 2001 and for no other purpose. We do not, in giving this opinion, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

4.

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF
AFRICAN NETWORK INFORMATION CENTRE (AfrinIC) LTD(CONTINUED)

Report on Other Legal and Regulatory Requirements

Companies Act 2001

We have no relationship with or interests in the Company other than in our capacity as auditors and dealings in the ordinary course of business.

We have obtained all the information and explanations we have required.

In our opinion, proper accounting records have been kept by the Company as far as it appears from our examination of those records.


ERNST & YOUNG
A.C.A, F.C.C.A.
Ebène, Mauritius



LI KUNE LAN POOKIM,
Licensed by FRC

Date: **29 OCT 2013**

Acronyms

AAU	Association of African Universities
AfNOG	African Network Operators Group
AFRINIC	African Network Information Centre
AFTLD	Africa Country Code Top Level Domains
ARTP	Agence de Régulations des Télécommunications et des Postes
ASN	Autonomous System Number
ASO	Address Supporting Organization
CCG	Communication Coordination Group
DNS	Domain Name Service
EAIGF	East Africa Internet Governance Forum
ECG	Engineering Coordination Group
IANA	Internet Assigned Number Authority
ICANN	Internet Corporation for Assigned Names and Numbers
IETF	Internet Engineering Task Force
IGF	Internet Governance Forum
IP	Internet Protocol
IPv6	Internet Protocol version 4
IPv4	Internet Protocol version 6
ISOC	Internet Society
ISP	Internet Service Provider
ITU	International Telecommunication Union
IXP	Internet Exchange Point
LIR	Local Internet Registry
NRO	Number Resource Organization
NSRC	Network Startup Resource Center
OIF	Organisation Internationale de la Francophonie
OCF	Office National des Chemins de fer
PDP	Policy Development Process
PKI	Public Key Infrastructure
RIR	Regional Internet Registry
RPKI	Resource Public Key Infrastructure
RR	Routing Registry

MESSAGE OF THANKS

AFRINIC wishes to sincerely thank the organisations which contributed as sponsors and local hosts, to the success of its 2012 meetings. Their contribution is not only beneficial to AFRINIC but goes a long way in promoting Internet development in the African and Indian Ocean region.



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