

MEETING REPORT

AFRINIC 27

Nigeria
LAGOS

27 NOVEMBER TO 1 DECEMBER 2017



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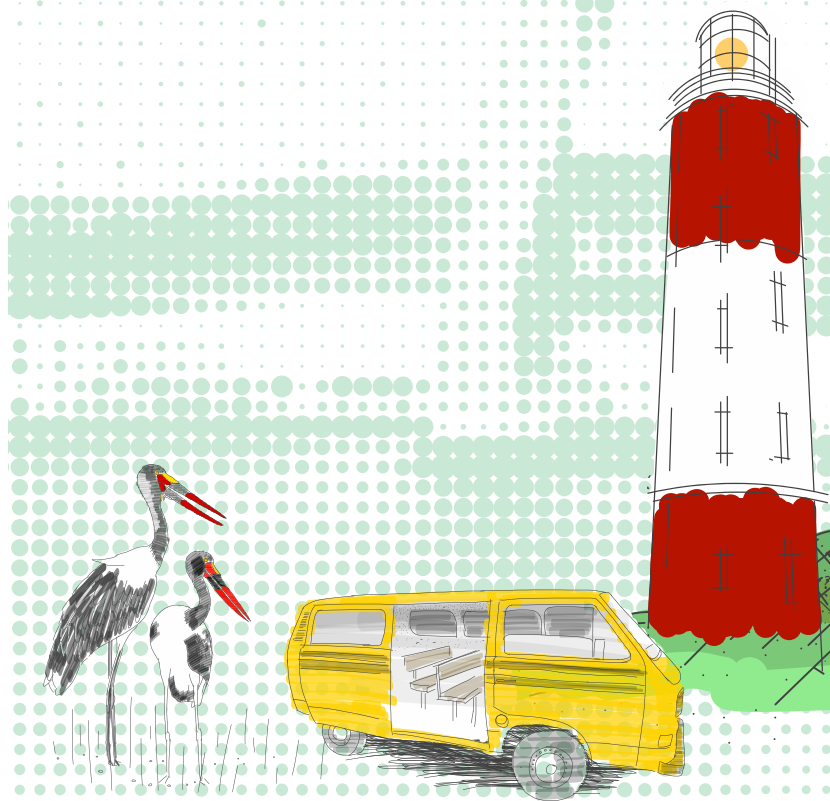


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Executive Summary

AFRINIC-27 took place in Lagos Nigeria, from 27 November to 1 December 2017.

The meeting was organised by AFRINIC and generously hosted by NiRA.

Over 260 people took part in training sessions, policy development discussions, plenary sessions, and networking events. Some key highlights of the event included discussions on policies guiding Internet number resource distribution in Africa, Big Data and impact on African businesses, Higher Education and Technology, efforts to strengthen key internet infrastructure to keep content local as well as the adoption of IPv6 and AFRINIC governance.

We would like to extend our heartfelt thanks to the sponsors: Main One, Google, ICANN, Internet Society, North Africa and NITDA, Galaxy Backbone, VDT Communications, Guarantor Hosting and Internet Exchange Point of Nigeria for the most valuable support.

The AFRINIC-27 agenda can be found here. Click on the Info section to see the presentation slides.

More information about Meeting statistics can be found here:

<https://meeting.afrinic.net/afrinic-27>

The session recordings and transcripts are available here:

<https://meeting.afrinic.net/afrinic-27>

TUESDAY 28 NOVEMBER OPENING SESSION

Moderator: Felix Otiato (AFRINIC)

The inaugural message was given by Mr Muhammed Rudman, Vice President of NiRA on behalf of NiRA President Sunday Folayan, who highlighted NiRA's key operational achievements on the management of the TLD with about 100,000 active domain names, the second largest registry in Africa. NiRA's commitment to capacity building was also highlighted and to this extent NiRA has signed a Memorandum of Understanding with AFRINIC on training and certification.

AFRINIC CEO Alan Barrett provided insights into AFRINIC's key operational achievements and critical role in supporting Internet development in the region. AFRINIC has allocated more than 100 million IPv4 addresses and over 9,000 IPv6/32 prefixes in Africa to its 1500 members among whom 42% have IPv6 address space. AFRINIC has trained about 550 engineers throughout Africa in 18 countries in 2017 on deploying IPv6 and managing Internet number resources. AFRINIC's grants and rewards program called FIRE Africa the Fund for Internet Research and Education is currently supporting a total of 18 projects in an amount of approximately \$300,000 for ongoing projects.

The Executive Vice Chairman of the Nigerian Communications Commission Professor Umaru Garba Danbatta in his message highlighted the exponential growth of the Internet shooting from 4.5 million Internet users in 2002 to over 388 million users in 2017. The importance of sustaining this growth through investment in infrastructure and broadband was highlighted. Broadband access is the key to the National Development Agenda and the Nigerian National Broadband Plan has set targets of 30% penetration by 2018.

Professor Umaru Garba Danbatta shared statistics on the broadband penetration in Nigeria which was only at 10% two years ago, has more than doubled to reach 28.1 % at September 2017. Danbatta raised concern over the rise in cybercrime in Nigeria and to this effect stated that regional cooperation is crucial in fighting cybercrime. A regional cybersecurity

center will be set up with the collaboration of a computer security incidence response team CSAT, and the National Security Advisor on Cybercrime.

Dr Isa Ali Ibrahim Pantami, the Director General of the National Information Technology Development Agency (NITDA), in his speech, addressed key advances of the Internet and the impact of broadband Internet access and utilization in sectors such as education, health care, and public safety.

Dr Isa Ali Ibrahim Pantami stressed on Africa's workforce and the potential for economic growth with penetration of Smart Phones in Africa expected to hit at least the 50% mark in 2020.

The role of the National Information Technology Development Agency (NITDA) in the ICT sector in Nigeria, and the importance of regulation and policies formulation as a tool for ICT development were also addressed. NITDA has a roadmap for the development of the Nigeria ICT sector that identified seven pillars: ICT regulation, local content development and promotion, capacity building, digital inclusion, digital job creation, Government digital services promotion and cybersecurity.

AFRINIC's vice-chair Hytham El Nakhal spoke on behalf of AFRINIC Chair Sunday Folayan and provided insights into AFRINIC's strategic vision and critical role in supporting Internet development in the region.

Hon. Adebayo Shittu Minister of Federal Ministry of Communications in his message shared the government's vision towards building a smart digital Nigeria as stipulated in the strategic growth map of the Broadband Plan 2017 to 2020. His Excellency Mr Shittu highlighted that his government is focusing its effort in fighting cybercrime, setting up of a National IPv6 Council to encourage IPv6 deployment, continue in investing in infrastructure, cables, satellites and bridging the digital gap between various communities.

Mrs Edith Udeagu COO of NiRA concluded the session and thanked the organisers, stakeholders and sponsors for their contribution.



Chief guests of the Opening Ceremony

SESSION 1

How to contribute to IDN and especially to the Latin Script LGR panel

Moderator: Felix Otiato

Speakers: Mr Yaovi Atohoum and Mr Daniel Nanghaka

Yaovi Atohoum from ICANN explained that until late 2009, Top-Level Domains were restricted to only the Latin letters a to z without accents or symbols. After 2009, IDN TLDs were introduced in other scripts including Arabic, Chinese and Cyrillic scripts and IDN TLDs can be either ccTLDs or gTLDs.

Yaovi Atohoum explained the changes with TLDs and the reason behind the internationalization of domain names and concluded his presentation on ICANN's IDN program and the Latin Script LGR Program by calling for community participation and contribution on the working documents for the Latin Panel.



*Yaovi Atohoum from ICANN speaking on:
"How to contribute to IDN and especially to the Latin Script LGR panel"*

AFRALO-AFRINIC-27 Update to At-Large Community

Daniel Nanghaka from AFRALO presented the AFRALO Update to At-Large Community.

The presentation explored AFRALO's constituents, key activities and membership. Daniel highlighted AFRALO's role in promoting ICANN activities such as DNSSEC Implementation in Africa's TLD registries, new gTLDs and Geographic names, new gTLD Subsequent Procedure, General Data Protection Regulation (GDPR) and Privacy, Registration Directory Service (RDS) and Whois, ICANN's Accountability and Transparency, Diversity and Participation at ICANN, Internet Governance activities and issues and Capacity Building, Awareness and Outreach to Africa (access of ICANN materials in African/other languages other than English).

During the Q&As sessions, delegates queried about the Government Advisory Committee's (GAC) role.

AFGWG Meeting

Government representatives and regulators from the African continent gathered for the AFRINIC Government Working Group (AfGWG) Meeting to discuss matters of importance to governments in the region and beyond. Topics included Cybersecurity, IXPs, IPv6 deployment and IPv4 exhaustion.

Newcomers Session

First time meeting attendees were given a comprehensive introduction to the AFRINIC Meetings and the AFRINIC community. Discussions centred on the various organisations and stakeholders that make up the African - and global - Internet industry, what AFRINIC is and does, the AFRINIC community and the bottom-up policy development process.



SESSION 2

Global Reports from APNIC, RIPE NCC, ASO and IANA

Moderator: Mr Alan Barrett

Speakers: Sanjaya, Axel Pawlik, Alain Durand, Fiona Asonga

APNIC, RIPE NCC, ASO and IANA reported on their key achievements at this session.

Sanjaya, Deputy Director at APNIC, presented the APNIC update. APNIC has reached membership of 14,500 members with 75% of APNIC members having ASNs, 96% have IPv4, and 56% of APNIC membership have IPv6. Sanjaya also gave updates on the APNIC Academy for APNIC Training, newly formed APNIC Foundation and KSK Roll Over.

Axel Pawlik, Director RIPE NCC, gave the NCC update remotely by video. Axel focused his presentation on internet of things and the RIPE community, RIPE stats, RIPE Atlas, policy update, collaboration with governments and law enforcement agency and also current ongoing and new activities.

RIPE NCC has created an IoT Working Group that primarily discusses on security concerns over IoT, the RIPE Step project reaching to approx. 1.5 million visitors, a new feature for Country Reports for the RIPE Stats,

and currently more than 10000 probes RIPE Atlas have been distributed worldwide.

Axel Pawlik concluded by speaking on community project funds and Rob Blokzijl Foundation in support of the IETF.

Alain Durand from ICANN made the next presentation on behalf of the IANA for the update. Alain provided statistics about the recovered pool of allocation as a result of the global policy on IPv4 recovered pool, which is approximately a /20 from each RIR as of September 2017. Alain also highlighted the results of the PTI performance survey showing a satisfaction level of 99% from 37% of respondents.

Fiona Asonga, ASO-AC representative from the AFRINIC region concluded this session by providing insights into the ASO-AC / NRO-NC and its role in appointing members of the ICANN board for seats 9 and 10 and ratifying global policy proposals.

The session discussed on the statistics and services available in the APNIC region such as the country profiling for IPv6 usage, IPv6 address compatibility for the APNIC WHOWAS, and the challenges for setting up RDAP.



Sanjaya from APNIC (Centre) with Fiona Asonga (ASO)

SESSION 3

Moderator: Felix Otiato

Speakers: Dr Kankoe Assgongbon, Mr Niyi Yusuf, Mr Chris Uwaje

Big Data Analytics and its benefits in today's data-driven Economy

Dr Assgongbon CEO at KA Analytics & Technologies, made his presentation remotely. Dr Assgongbon explored the importance of data as a basic requirement for business analytics for improved decision-making processes, developing new business opportunities, devising strategic marketing campaigns, and at a macro-economic level sustaining Africa's growth.

Dr Assgongbon showcased how his group used Big Data to develop predictive modeling to understand consumer behavior preferences.

The session discussed on biases that can exist in a predictive model. Dr Assgongbon highlighted that there are no border for what can be included in his study such as gender, level of education, physical appearance, and more. Dr Assgongbon explained through an effective sampling technique known as 'random forests', a predictive model could address the issue of biases and missing data.

Big Data – Challenge for Businesses

In this presentation Niyi Yusuf, CEO Accenture Nigeria, explained Data Analytics through the use of technology to derive insights from data to describe trends and predict patterns for better, real-time decision making, innovation and effective outcomes.

The presentation explored opportunities for economic growth and improvement, and the reason behind organisations tapping into increasingly intricate analytic techniques to identify opportunities for expansion, innovation and competitive advantage.

Mr Yusuf explained the importance for businesses to obtain data that is useful, interpretable and relevant and highlighted the use of data analytics in the banking, agriculture, and marketing sectors in Nigeria.

Mr Yusuf also highlighted some of the challenges that businesses encounter with Big data such as the quality of data, lack of data scientists, high cost of infrastructure, privacy issues, power shortage and keeping data onshore on the Continent.

Mr Yusuf concluded by explaining the critical factors that help businesses prepare for Big Data and data analytics.

IPv6 Adoption: Imperatives for a Nigeria Strategic Plan

Chris Uwaje, Vice Chair IPv6 Council Nigeria, highlighted that the next battlefield for sustainable development and wealth creation resides in IPv6 and IoT strategic intervention at all critical levels of development. Chris Uwaje stressed on the need for Nigeria to adopt IPv6 and highlighted the evolution of the Nigerian ICT landscape, the challenges and reasons for slow IPv6 adoption with special focus on the imperatives for the leadership, policy makers and stakeholders. Chris Uwaje commended AFRINIC's efforts towards capacity building in IPv6 in Africa and called for accelerated IPv6 adoption on the continent with the following recommendations: the establishment of a regional IPv6 Task Force under the recommendation of AFRINIC, and AFRINIC should encourage the African Union to declare an African IPv6 Transition Agenda.

The role of the IPv6 Council, represented in 176 countries was explained. The session discussed possible deterrents to IPv6 adoption in Africa and several issues surfaced during discussions such as a lack in skilled workforce in Africa, the interoperability of IPv4 and IPv6, IPv6 and security, and lack of access to IPv6 training facilities.



Panelists Chris Uwaje from (centre) with Niyi Yusuf (Accenture) and Felix Otiato (AFRINIC)

SESSION 4

Moderator: Vymala Thuron

Speakers: Mr Dewloe Ajao, Dr. Abdulkarim A. Oloyede and Mr Chidera Onah

Internet Exchanges, Local Loops and Internet Numbering Resources as critical elements for improved Internet connectivity: The Abuja Experience

Mr Dewloe Ajao from Bandwidth Consortium gave his organization's perspective in utilizing AFRINIC-allocated resources for multi-homing and peering at a local Internet Exchange. Mr Ajao explained the benefits of multi-homing and peering when small organisations pool resources together, thus finding more value as a group.

Mr Ajao showed that by connecting to the Internet Exchange Point, these organisations save money on Internet connectivity and get better performance.

Mr Ajao urged regulators of the internet connectivity market not to manipulate market pricing which makes it difficult for mini networks to evolve. Mr Ajao also called for ISPs in Nigeria to facilitate the move of web hosting sites from outside the country to their own data centers and to stop the practice of charging double for the non-internet access connections.

Higher Education in the Age of Technology

Dr. Abdulkarim A. Oloyede, lecturer in the Department of Telecommunication Science at the University of Ilorin, Nigeria showed the relevance of technological enabled higher education and examined the significance of technology to higher Education, as well as its current impact.

The presentation leveraged that Internet for education requires clear vision and strategy. Mr Oloyede highlighted that commitment to ICT equipment, broadband, connectivity, ICT learning resources and technical support for ICT are crucial elements that improve Higher Education in Africa.

The session also discussed the challenges faced in Higher Education in Africa such as brain drain, the growing demand for admissions in universities in Nigeria, interest in ICT Education, curriculum contents for ICT courses, distance learning, research grants, and broadband in Africa.

Facebook Free Basics: Net Neutrality and Nigerian Internet Users' Experiences

Mr Chidera Onah examined the deployment of free basics by Facebook through the lenses of Net Neutrality and considered in specific details the experiences of Nigerian internet users. This discussion focused on the use of online platforms for job search, entertainment, education, health, financial activities and socio-economic activities could have been impacted by free basics. The issue of freedom and censorship was also examined in an era of free basics with real case studies.

Mr Onah recommended the provision of broadband and connection to the rural areas in Nigeria by the Facebook Free basics program.



Dr Oloyede (University of Ilorin) talks about Higher Education in the Age of Technology

SESSION 5

Moderator: Vymala Thuron

Speakers: Mr Muhammed Rudman, Mr Adeonmu Johnson Olukayode and Mr Rehan Noordally

IXPN: The impact on the industry

Mr Rudman, CEO, Internet Exchange Point of Nigeria, in his presentation highlighted the economic, legal, security, business and other far-reaching implications of overseas hosting. The presentation highlighted that most African countries are not focused on the local hosting of Internet content within their borders, oblivious of the fact that content is the economic engine of the internet and local hosting cranks the wheel of that engine.

Mr Rudman explained that IXPN has been at the forefront of promoting local hosting of Internet content within Nigeria, positively engaging all the relevant stakeholders towards this endeavor. Mr Rudman provided some insightful statistics examining the impact of peering on pricing and latency using several case studies in Nigeria.

The session discussed on the readiness of telcos in using peering facilities in Nigeria, statistics that comes over the IXP on local data versus international data, services that NIXP offers for promoting local content, and traffic in terms of capacity and entry/exit points at exchange points.

The Core Internet Infrastructure

Mr Adeonmu Johnson Olukayode addressed how the African community can improve and expand Internet infrastructure to ensure low cost, resilient and secure Internet access while keeping the content and traffic considerably local.

The current state of the African Core Internet Infrastructure by findings; using Nigeria as a case study, revealed the several challenges such as: Power Supply stability, Efficiency of alternate power supply, Theft, Security, Local Community issues and Internet Exchange Point Adoption.

The significant role that Information Technology Professionals within the African region play by ensuring they acquire the right skills set was explored in this presentation.

Where is My Next Hop? The Case of Indian Ocean Islands

Rehan Noordally described a large-scale measurement study in which probes were deployed in different countries in the Indian Ocean. The study generated network traces, and developed a tool to extract and analyse useful information. This study showed that most of the traffic in the Indian Ocean area exits through one point even if multiple exit points exist. The conclusions of this study revealed that there is no correlation between Path length and Distance, except for Madagascar, relationship between Path Length & RTT is dependent on the countries, delay decreases when distance increases, more of 90% of data go through Europe but none to regional peering.



From Left to Right: Mr Rehan Noordally, Mr Adeonmu Johnson Olukayode, Mr Muhammed Rudman and Mrs Vymala Thuron

SESSION 6

Moderators: Policy Development Working Group (PDWG) Co-chairs Mr Sami Salih, and Mr Dewole Ajao



*Mr Dewole Ajao
(PDWG Co-Chair)*



*Mr Sami Salih
(PDWG Co-Chair)*

The following policy proposals achieved consensus to proceed to Last Call immediately:

IPv4 Soft Landing - bis: In its sixth iteration, the IPv4 Soft Landing bis proposal, which replaces the current one in article 5.4 of the Consolidated Policy Manual, was moved to last call after extensive contributions from the PDWG. The policy introduces enhancements to the current mechanisms and procedures by which AFRINIC manages the distribution of IPv4 address space from 102/8 (the last /8). It immediately moves to last call.

Lame Delegations in the AFRINIC reverse DNS: This policy will authorize AFRINIC to remove entries in the WHOIS database that are responsible for rDNS lame delegations. The PDWG approved it in its second version, and it goes to last call.

Proposals that did not attain consensus:

The following policy proposals did not attain consensus after presentation to and discussion by the PDWG at AFRINIC-27, and have been returned to the mailing list for further discussions and refinement by the authors (and the community):

AFRINIC Policy Development Process - bis: This proposal introduces major revisions to the current PDP (art 3 of the CPM). It's currently at version 2.

Internet Number Resources Review by AFRINIC - is an attempt for AFRINIC to have additional mandate (as stipulated in the Registration Services Agreement) to review (audit) members' resource usage, and potentially reclaim non-compliant resources and/or revoke non-compliant memberships. In its 5th iteration, it goes back to the mailing list for more discussions.

Route Aggregation Policy - this proposal has not been updated by its author since it was proposed in April 2017, and no discussion has happened on it since AFRINIC-26. It was sent back to the rpd list for more discussion with an urge by the PDWG for the author to withdraw it.

The full minutes for the Policy Discussion can be read here.

<https://www.afrinic.net/en/library/policies/archive/ppm-minutes/2261-afrinic-27-pdwg-meeting-minutes>

AFRINIC and KENOC Signs Memorandum of Understanding

AFRINIC CEO Alan Barrett and KENIC Chairman Chris Senanu signed a Memorandum of Understanding. The purpose of this MoU is to clearly identify the roles and responsibilities of each party as they relate to the set-up a Copy of the DNS Root Server as part of the AFRINIC Root Server Copy Project.

Mr Senanu in his intervention highlighted that this deployment will help in strengthening the Internet by making it more resilient and stable in Kenya and Africa at large.



AFRINIC CEO Alan Barrett and KENIC Chairman Chris Senanu signs MoU

FRIDAY 1 DECEMBER PRESENTATIONS

SESSION 7

Identifier Technology Health Indicators (ITHI)

Moderator: Mr Christian Bope

Speakers: Mr Alain Durand and Mrs Madhvi Gokhool

The first presentation from Alain Durand, Principal Technologist at ICANN, provided an overview of the overall Identifier Technology Health Indicators (ITHI) project at ICANN.

The ITHI project has two main components, names and numbers. The NRO has taken leadership on the numbers component and has announced a global consultation on the fruits of their initial work. The other component of the project is managed directly by ICANN and focuses on names (i.e. DNS) related metrics.

Mr Alain Durand focused his presentation on the names perspective, the methodology used and the initial set of metrics defined. Alain explained the seven metrics of the DNS and protocol parameters.

Mrs Madhvi Gokool, Registration Services Manager at AFRINIC spoke about the Identifier Technology Health Indicators from the numbers and AFRINIC community perspectives.

The Regional Internet Registries agreed to facilitate the development of metrics for the internet number registry system and have identified an initial set of metric definitions that are being used as a basis for the community consultation.

The metrics ensure all internet numbers administered by the RIRs including legacy resources are comprehensive, correct and current.

Mrs Madhvi Gokool encouraged participation in the community consultation process. The comments received will be reviewed by RSMs of the RIRs and incorporated in the global ITHI document and sent to the NRO-EC for agreement, and then the project will move forward to its next phases.



Alain Durand (ICANN) presenting on Identifier Technology Health Indicators (ITHI)

FRIDAY 1 DECEMBER PRESENTATIONS

SESSION 7

ASO Review

Moderator: Mr Christian Bope

Speaker: Mr Alan Barrett

Mr Alan Barrett, AFRINIC's CEO explained the ASO Review process. According to ICANN's bylaws, the ICANN board has to make sure the ASO review happens every five years. The objectives of the review are to check whether the ASO still has a function within ICANN, check whether any changes are needed and check whether the ASO is accountable to its constituency.

The review methodology consisted of reviewers who attended ICANN meetings and RIR meetings in 2017. A report consisting of 18 recommendations was published following these initial consultations. Alan Barrett invited the AFRINIC community to read these proposals and make comments on the AFRINIC community discuss mailing list.

Governance Committee Report

Moderator: Christian Bope

Speaker: Mrs Wafa Dhamani

Mrs Wafa Dhamani, Chair of the AFRINIC Governance Committee (GC), provided a report on the Governance Committee's work that included the review of bylaw changes. The GC recently received from the CEO the first request for advice on clear provisions in the bylaws with regards to the date of start and expiry of the term of office of directors. The governance committee is currently working on it. Mrs Dawani invited the community to visit AFRINIC's web page, to read the GC reference document, minutes and guidelines document.

NOC Report

Moderator: Mr Christian Bope

Speaker: Mr Cedrick Mayet

Mr Cedrick Mayet, from AFRINIC's IT Team gave the AFRINIC-27 NOC Report providing delegates with an update on the various technical aspects involved during the Meeting Week such as equipment and bandwidth usage, internet coverage and access points. The total bandwidth used during the Meeting was around 502 gigabit.



Mr Cedrick Mayet presenting the NOC Report

FRIDAY 1 DECEMBER PRESENTATIONS

SESSION 8

AFRINIC Financial Report

Moderator: Rev. Sunday Folayan

Speaker: Mr. Alan Barrett

Mr. Alan Barrett presented the Finance Report on behalf of Hytham El Nakhal chair of the board Finance Committee providing the financial status of AFRINIC as of the end of September.

Revenue for the year was about \$4.8 million and at the same time last year we were sitting at about \$4.3 million.

Operational expenditure, our budget for the year is about \$4.88 M and we have spent about \$2.7 M.

Capital expenditure, we budgeted \$126,000 and we spent less than half of that at \$46,000. There might still be a small amount of capital expenditure before the end of the year, but we're still very much less than the budget.

Our treasury, cash in the bank, as of the end of September, considering all our bank accounts added up together, total of \$4.8 million and at the same time last year about \$3.27 million.

Mr. Alan Barrett also highlighted that as from 2017 AFRINIC has started to publish its half-year Finance report on the website.

AFRINIC Fees Review Structure

Moderator: Rev. Sunday Folayan

Speaker: Mr. Subramanian Monesamy

Subramanian Monesamy chair of the Fees Review committee highlighted the key changes that are being discussed in the draft proposal on the fees review.

One of the anomalies identified in the fees structure is the sharp rise in the fee from a /20 to a /18, which is significant.

Subramanian Monesamy highlighted that the approach is revenue neutral and objective is not to increase the fees, it is to correct the anomalies and to have a fee structure that ensures the stability of AFRINIC. AFRINIC will still have a 50 percent discount for academic and research institutions, and a 5 percent discount if members pay their fees early.

Open Mic Session

Moderator: Rev. Sunday Folayan

This session was an interactive one between the AFRINIC community and AFRINIC Board members and valuable feedback was received on AFRINIC related activities. The AFRINIC Community requested for:

1. AFRINIC website to be translated in French
2. Inclusion of IPv6 and AfricaCERT trainings in Meetings
3. Improvement of the AFRINIC Policy Development Process
4. Possibility of buying a property due to the high cost for renting of the AFRINIC Headquarters building
5. More collaboration with African governments to solve Internet related issues on the continent
6. Facilitation of visa on arrival for delegates in AFRINIC Meetings
7. Gender balance on the AFRINIC Board
8. A Day dedicated to IPv6 in the Meeting Program
9. Collaboration between AFRINIC and law enforcement agencies
10. Evaluation of the impact of AFRINIC's IPv6 Training
11. More AFRINIC capacity building activities in East Africa
12. Commitment of more engineers in Africa towards developing their capability in IPv6
13. Fellowship program to have a comprehensive framework for a better follow-up on all the AFRINIC fellows



The AFRINIC Community interacting with AFRINIC Board members

