Gambia IXP Experience

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Map of The Gambia
Introduction

- Serekunda Internet Exchange Point (SIXP) – First and only IXP in The Gambia AS37698

- Established in July 2014 – a product of AXIS AU Project

- Has seven ASNs peering, 5 local and 2 international (PCH)

- Registered as a not for profit organization

- Run by an executive committee and three part time staff (2xtechnicians and 1XAdministrator)

- The Government through the Ministry of ICT and the regulator was a great facilitator in its establishment
During Setup and Configuration
After the Setup

Abdoulie

Isatou

Nick

Mohammed
What We Had Before

- There were five operators – including the Incumbent
- National Telco had Monopoly of the Gateway both Data and Voice
- All local operators transit through the incumbent
- The Incumbent transit through SONATEL in Senegal
- With the ACE (Africa Coast to Europe) project, other operators were granted Data Gateway License
- Now they have their own transit links to Europe, and this brought the need for an Exchange Point
SIXP Topology
Impact of SIXP

- Increase traffic through the exchange, reaching a maximum of 50.541Mbits
- Reduced latency between local operators from 60 - 100ms down to 5 - 10ms.
- No measured performance improvement for Internet users
- Has not yet translated into cost saving both for users and the operators
- The reason, we still have far more transit traffic than peering traffic
- The Good thing, we are able to bring all the operators in one room to peer
SIXP Aggregate Traffic

**Day Graph**

<table>
<thead>
<tr>
<th>Bits/Second</th>
<th>Max</th>
<th>Average</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>14.035 Mbits</td>
<td>755.730 Kbits</td>
<td>677.592 Mb/s</td>
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<tr>
<td>Out</td>
<td>42.142 Mbits</td>
<td>2.261 Mbits</td>
<td>2.024 Mbits</td>
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**Week Graph**

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<tr>
<td>In</td>
<td>14.035 Mbits</td>
<td>1.058 Mbits</td>
<td>677.59</td>
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<tr>
<td>Out</td>
<td>42.142 Mbits</td>
<td>3.178 Mbits</td>
<td>2.02</td>
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**Month Graph**

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<td>16.853 Mbits</td>
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<td>50.544 Mbits</td>
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**Year Graph**

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<td>2.533 Mbits</td>
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<td>Out</td>
<td>334.013 Mbits</td>
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Limitations and Challenges

- Major challenge is lack of local content or CDNs
- No locally significant applications e.g. Nollywood etc.
- Most Websites are hosted outside due to high cost of local hosting
- High cost of electricity and cooling discourages local hosting
- No available carrier neutral data centers due to high operating cost couple with Economies of scale
- Only one landing station in the country, the ACE sub-marine fibre cable
What is been Done to Mitigate the Problem?

- Hosting of Remote CDNs like GCC (Google Cache Content), Akamai etc.
- GCC servers already installed, waiting for a router/layer 3 switch which is expected in one month time
- Already signed NDA (Non Disclosure Agreement) with Akamai, waiting for their legal team
- We are already hosting PCH for faster DNS and root server searches
- Locally we are working with other stakeholders in organizing workshops and training on local content development
- There is a plan workshop in September on harnessing and development of local content
Lessons Learnt

- That establishing an IXP is not very expensive contrary to the myth
- You need more political will than technical know how
- Neutrality is key to an IXPs success
- Getting traffic to the exchange is more challenging than establishing the IXP
- Sadly, that the big boys tend to bully the small boys….. Meaning you need traffic to be listened to
Future of SIXP

- We will continue to build content in order to generate traffic by hosting remote CDNs and encouraging local content development.

- Will work on developing strategies for value added services in order to attract more peers and generate more traffic.
Appreciation

I can’t conclude without thanking these special people, they have been and still are crucial in the establishment of SIXP and its continuous existence

- Nick Hilliard of INEX
- Nishal of PCh
- Michuki of ISOC
- Jane Coffin of ISOC
- And finally the whole AFIX community
Thank you

Questions ????

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