Internet eXchange Points

The Problems
The Reality
The Hard Lessons

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Hard Lessons

- Cooperation between Competitors
- Regulatory Barriers and Attacks
- Neutral Turf and Ownership
- Neutral Operation
- Organization
- Funding Model
- Technology
- Rules of Behavior
Cooperation between Competitors

- The Customers get Better Service
- When the Customer Benefits, we all Benefit
- The ISPs who don’t play soon Look Foolish
- Trust is the Critical Factor
- Communicating this is Hard, the Ugandan Experience
Regulatory Barriers

• The Kenyan Experience
• Why it is Better for the Country
• Why the PTT actually Benefits in the Long Run
Neutral Turf and Ownership

• Natural Fear of any One ISP or Carrier Owning and Controlling
• Do not be Fooled by the False IX, which is Really a Transit Service by a Commercial Company or PTT
• Neutral Business, Physical, and Technical Control/Ownership is Best
• Neutral Location with Good Circuits
• Ugandan Experience
Organization

- Formal but not so Formal that it is Hard to Get Work Done
- Participatory, but Able to Make Decisions
- Transparent, so Folk Build Trust
- Do Actual Work, Don’t Spend Time Continually Re-Making the Same Decisions (avoid deja moo)
Funding Model

• If it does Not Pay for Itself, it will not Survive
• Small Capital Donations for Startup are Appreciated
• It Benefits your Customers, so it is Worth Paying for
• It Saves the ISPs International Transit
• Financial Transparency is Mandatory
• Consensus on Commitments and Expenditures
Technology

• Layer-2, not Layer-3 - Kenyan Lesson
• Route Servers and Reflectors are Complex
• Each ISP will have to do Real Internal Routing
• Small Routers are Available
• International Technical Conversation and History is Available
Rules of Behavior

• Don’t Touch My Equipment!
• BGP Peering Policies and Automation
• Can ISPs Sell Transit over the IX?
• Should Non-Transit ISPs be Allowed?