Alternative Internet Interconnection Model

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Introduction

- Internet Costs in Africa shall remain un-affordably for a while
- Current Rates compare badly with Rates in Europe/America
  - e.g. 2,500USD per 1MB visa viz 50USD per 1MB
  - 50x more expensive (in real terms)
  - Not Affordable (as % of National Income Per Capita)

Introduction-How it happened

- Traditional Voice Network Topology
  - Has relatively simple (symmetric) Interconnection tariffs
  - Call originator compensates Call terminator
  - Based on Distance and Duration of call

Introduction-How it Happened

- Origin of Internet
  - Engineered in US, moved to Europe
  - Runs over existing, traditional voice infrastructure but with different economic dimensions
- Internet Topology and Economy
  - Based on three Tiers
  - Tier1 (Northern Internet Backbone Providers, IBP), Tier 2 (Local IBP) and Tier 3 (Local ISP)
  - The economic dynamics (interconnection costs) are based on PEER or TRANSIT Relationship

PEER Relationship

- PEER relationship occurs where IBPs feel the value (subscriber size, geographic reach, traffic volumes, etc) of their Networks are similar
- They Interconnect at NO CHARGE. Each peering partner simply meets local costs of running their networks and drops external traffic to the other at no cost.

TRANSIT Relationship

- TRANSIT relationship occurs where IBPs feel the value (subscriber size, geographic reach, traffic volumes, etc) of their Networks are NOT similar
- They Interconnect only at a FEE. The bigger network (IBP) charges the smaller network a monthly fee for Interconnection

Current Interconnection Model

- Status Quo Model
  - Current Practice on the Internet
  - Big (IBP) Networks in US/Europe only offer TRANSIT relationship with African Networks (IBP)
  - Africa meets the full cost of linking and terminating Internet traffic to Europe/America/Asia

Current Interconnection Model

- Status Quo Model-Impacts
  - Governments/Local economy continues to drain financial resources in form of Interconnection fees
  - Local IBP, ASP, ISP not worried since high-costs are simply retailed onto Consumers
  - Consumer Costs remain un-affordable and renders Internet Services to the privileged few

Current Interconnection Model

- Status Quo Model-Challenges
  - Why Status Quo model very Successful in the developed economies but not in emerging economies.
  - Non or slow Liberalization of Telco Sector, both at International Gateway and within Domestic (Access) Networks
  - Lack of local content implies higher affinity for foreign content I.e. increased International traffic over expensive Interconnection Model

Proposed Interconnection Models

- Half-Way Proposition Model
  - Proposes to retain Status-Quo dynamics while address above Challenges
  - Acknowledges that TRANSIT, PEER relationships form the economic fundamentals of Internet Services and is unlikely to change
  - Seeks Donor intervention for massive Domestic Infrastructure Development

Proposed Interconnection Models

- Half-Way Proposition Model-Perceived Impacts
  - Assumes that a Well developed domestic network would attract northern IBP into PEER relationships
  - Assumes A local and vibrant domestic network would pre-empt or reduce the need for international link
  - Assumes cost benefits would be passed down to consumers

Proposed Interconnection Models

- Half-Way Proposition Model-Perceived Challenges
  - Without Regulatory independence foreign IBP are unlikely to PEER into local networks
  - Requires Proper and transparent management of Donor-sponsored funds for infrastructure development
  - Not comprehensive on how local content would be generated and promoted.

Proposed Interconnection Models

- The 3rd Alternative Model
  - Takes into account the Benefits of both Status-Quo and Half-way Proposition Models
  - Namely, the need to retain PEER and TRANSIT eco-dynamics and the need to have a developed & vibrant domestic network
  - Suggest certain fundamentals that need to be addressed to realise phenominal growth in the Internet sector.

The 3rd Alternative (Fundamentals)

- Improving quality and penetration of domestic digital arteries since local access charges constitute a significant portion of total internet costs.
- Continued liberalisation efforts at International Gateway levels (includes submarine gateways)

The 3rd Alternative (Fundamentals)

- Development and Promotion of local digital content to attract international PEERING arrangements
- Improving the capacity and independence of Regulatory Agencies
- Investing in IT literacy and education to guarantee quick and broad uptake of ICT usage

End

- Q&A