The East African Broadband Infrastructure Network (EAC-BIN): a Platform for Migration to NGN

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Outline of Presentation

- Background
- Situational Analysis
- Regional Integration & Harmonization
- Traffic Analysis & Forecasts
- Proposed 4-Tier Strategy
  - International Switching
  - Regional/Cross-Border Connectivity
  - National Backbones
  - Rural & Local (Last-Mile) Access
- Proposed Master Plan (EAC-BIN)
- Implementation Framework – Incl. Financials
- Individual Country Case Studies
- Conclusions & Way Forward

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Background

- **Identified Constraints**
  - Inadequate (Regional) Backbone Infrastructure
  - High Tariffs (vs Low Income *Per Capita*s)
  - Poor Rural Communications
  - Policy, Regulatory & Legal Divergence
  - Institutional challenges (esp. at regional level)
- **Some Suggested Interventions**
  - Analysis of Traffic Patterns
  - Analysis of On-going & Planned Initiatives
  - Develop Master Plan to improve connectivity
- **ITU/EAC Study**
- **Methodology**

Situational Analysis

- Liberalization has led to remarkable growth esp. in mobiles; at 25% tele-density, more remains to be done

- Need for Broadband connectivity recognized

- Several segments already upgraded to fibre

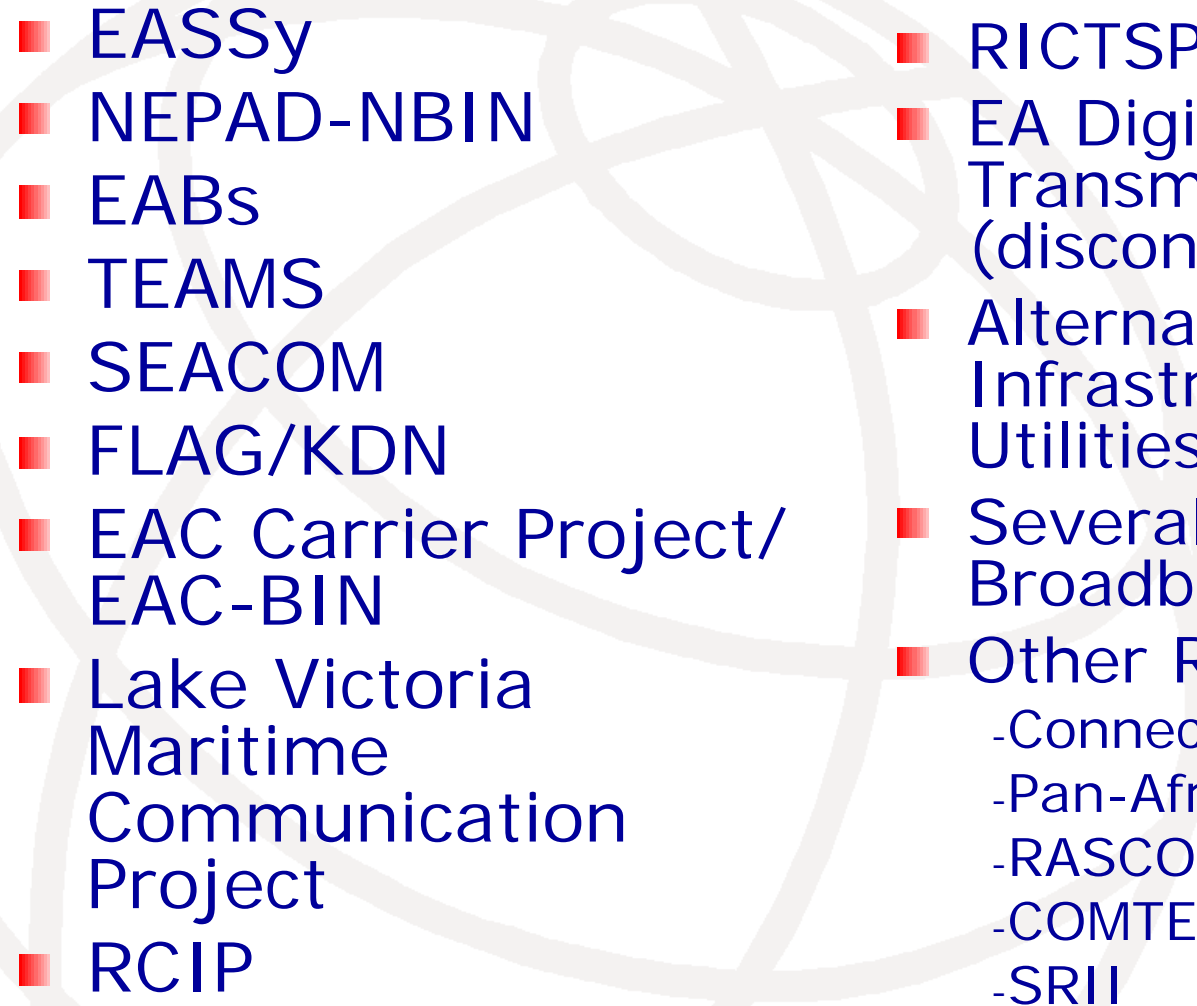- Metropolitan Fibre Networks in all Capitals & Some Major Cities

Situational Analysis (cont'd)

- Emergence & Rapid growth of Broadband wireless access technologies

- Interconnection & Cross-border communication still a challenge

- Costly satellite systems still major means for international and in some cases cross-border connectivity

- Some terrestrial cross-border links are fibre grade, others microwave

Situational Analysis (cont'd)

- Rural connectivity still inadequate
- Several initiatives to address broadband connectivity at multi-levels
- Legacy Networks being replaced by IP/MPLS Networks
- On-going efforts to harmonize policies, regulations & legislations
- On-going efforts to rationalize deployment of e-Applications (e-Gov)
- Need for human & institutional capacity enhancement

Some Major Broadband Infrastructure Initiatives

- EASSy
- NEPAD-NBIN
- EABs
- TEAMS
- SEACOM
- FLAG/KDN
- EAC Carrier Project/ EAC-BIN
- Lake Victoria Maritime Communication Project
- RCIP

- RICTSP
- EA Digital Transmission Project (discontinued)
- Alternative Infrastructures by Utilities
- Several Wireless Broadband Initiatives
- Other Regional Efforts
  - Connect Africa
  - Pan-African e-Network
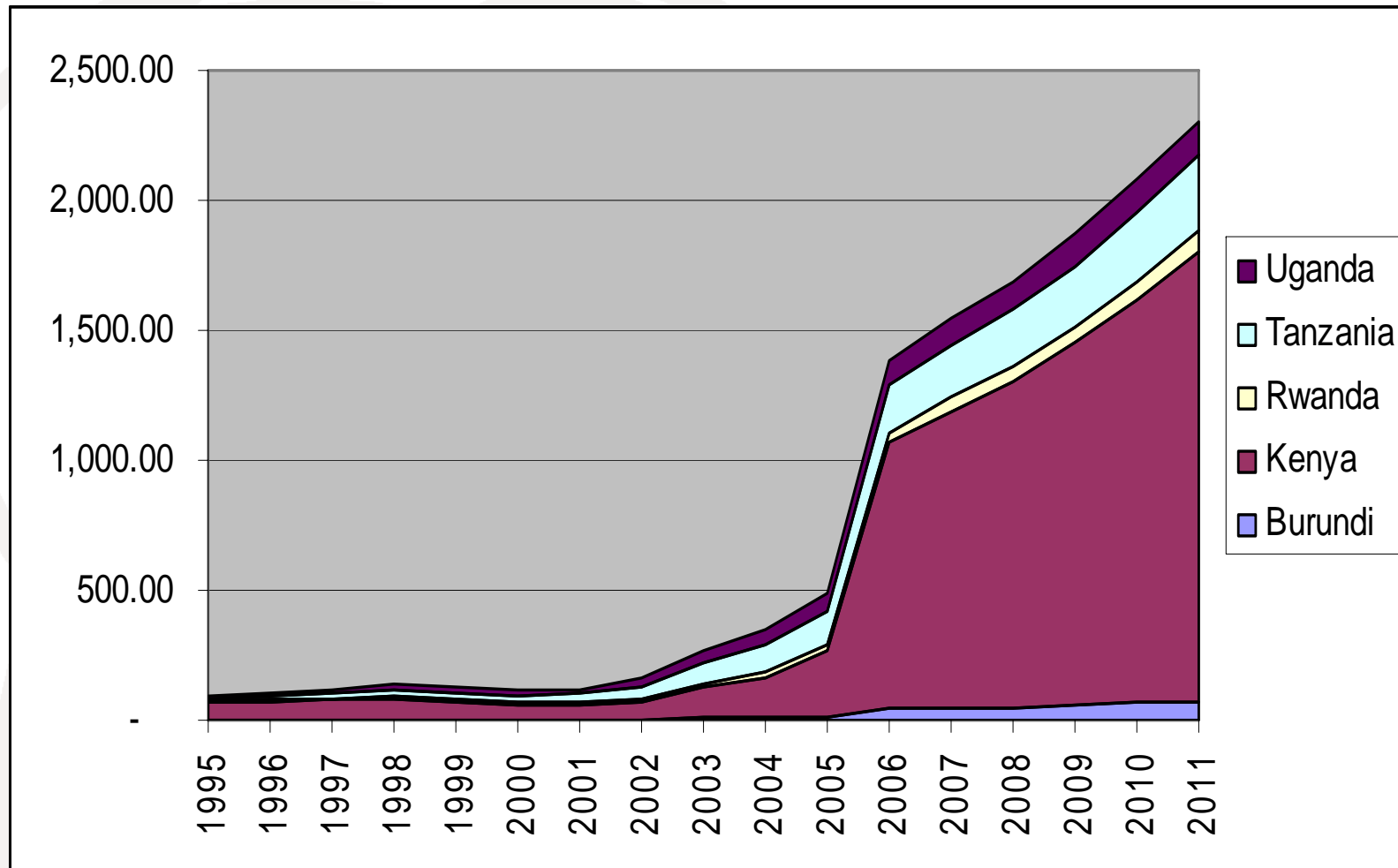 - RASCOM
  - COMTEL
  - SRII

Policy & Regulatory Profile

- All (5) Countries but 1 have National ICT Policies

- Draft Harmonized Regional Policy

- Efforts on-going to Harmonize Regulations

- National e-Legislations under consideration

- EALA in Existence and Active

Traffic Analysis & Forecasts

- **Introduction**
- **Net Forecasts (Voice & Data)**
  - Combined Voice & Data Projections
  - Int'l Inbound & Outbound Traffic
  - Estimated Grey Markets
  - Served & Un-served demand
  - Int'l Voice Traffic & Compression
- **Int'l Gateway Traffic Forecasts**
- **Cross-border Traffic & Capacity Considerations**

EAC Net Forecasts (Mbps) (1995-2012)

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Voice Traffic Forecasts btw Tz/Ke (Million Minutes)

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Traffic (Mill. Mins)	40	44	48	53	58	64	76	90	108
VAS	20	22	26	34	48	71	107	160	241
TV Txn 34Mbps	1	1	1	1	1	1	2	2	2
Est. Voice Traffic 2012	350 M/Mins								

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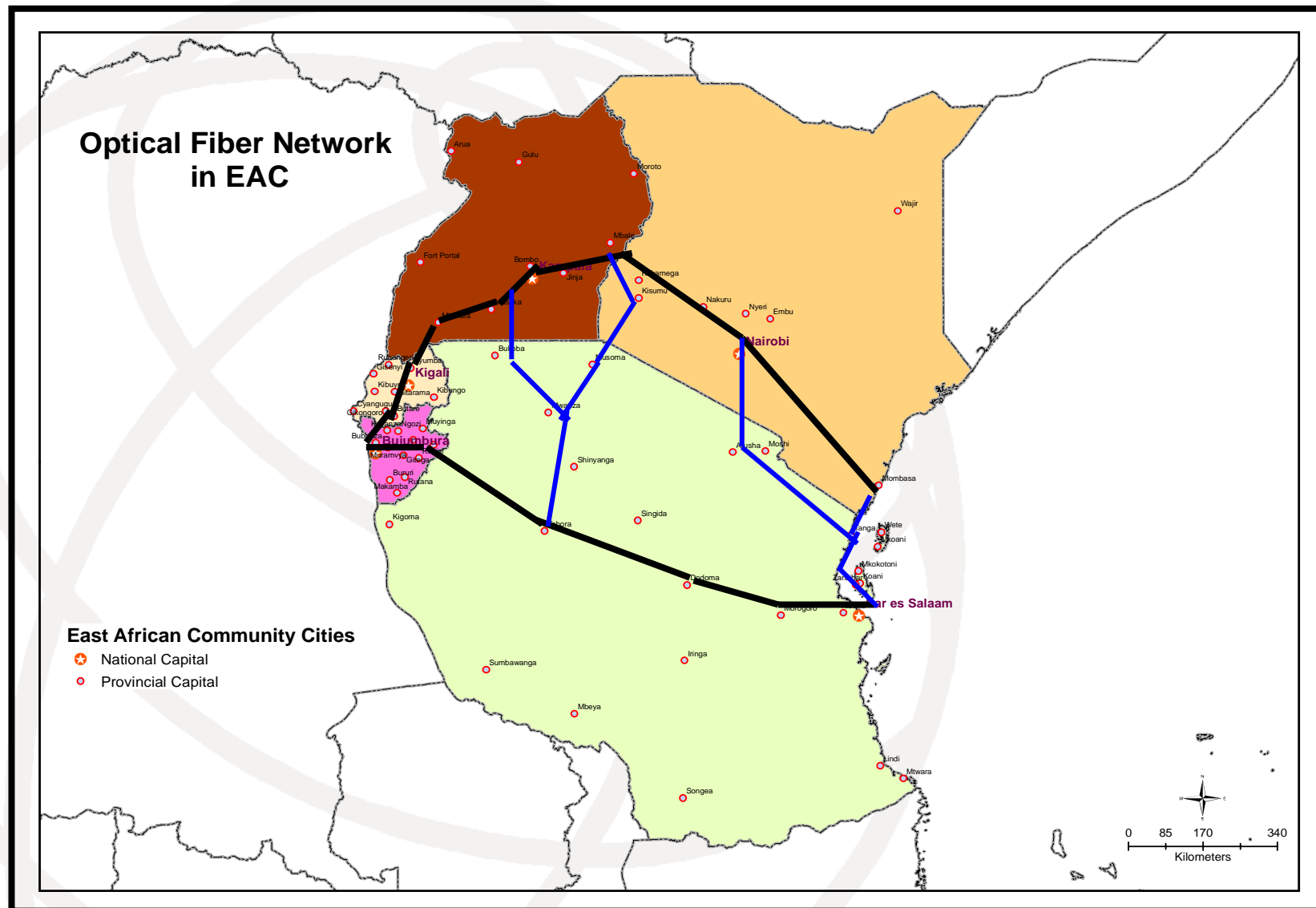# Proposed 4-Tier Arrangement

- International Gateways
- Regional/Cross-Border Connectivity
- National Backbones
- Rural & Local (Last-Mile) Access

Proposed 'Master Plan'

- **Proposed 4-Tier Strategy**
  - International Links
  - Regional/Cross-Border Connectivity
  - National Backbones
  - Rural & Local (Last-Mile) Access
- **For Each Tier, Strategies for:-**
  - Short-Term (up to 2 years)
  - Medium-Term (2-5 years)
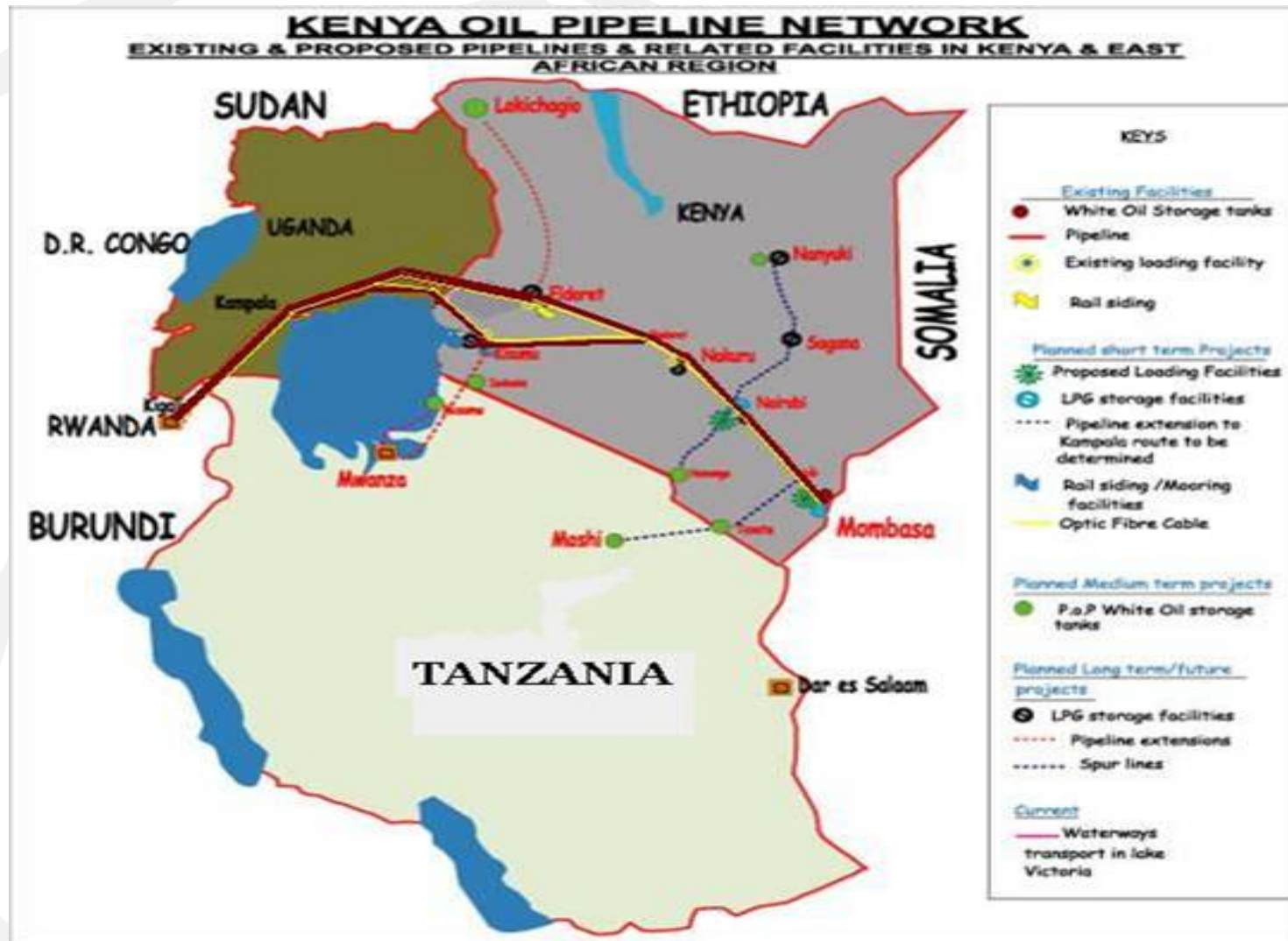 - Long-Term (5-10 years)

Proposed 'Master Plan'

(Envisaged EAC Regional Broadband Backbone Network - Short-to-Medium Term)

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Alternative Utilities Infrastructure
(Sample)

KENYA OIL PIPELINE NETWORK
EXISTING & PROPOSED PIPELINES & RELATED FACILITIES IN KENYA & EAST AFRICAN REGION

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Implementation Framework

- Policy 'Environment'
- Human Resource & Expertise
- Infrastructure & Hardware Resources
- Content & e-Applications
- Finance & Business Models
- Partnerships
- Optimization & Standardization
- The Missing Link

Proposed Institutional Framework

- **Short Term (up to 2 yrs)**
  - SPV Company
  - Strengthened ICT Unit @ Secretariat
  - Permanent EARPTO Secretariat
  - Formal & Legal Mandate for EARPTO
- **Medium Term (2-5 yrs)**
  - SPV Company
  - ICT Directorate within EAC Secretariat
  - Common Regulatory Authority
  - EA Professional ICT Association

Proposed Institutional Framework

- ## Medium Term (cont'd)
  - Multi-Stakeholder ICT Organization

- ## Long Term (Over 5 yrs)
  - Full-fledged Carrier Company
  - Functional Multi-Stakeholder ICT Organization
  - Common Regulatory Authority
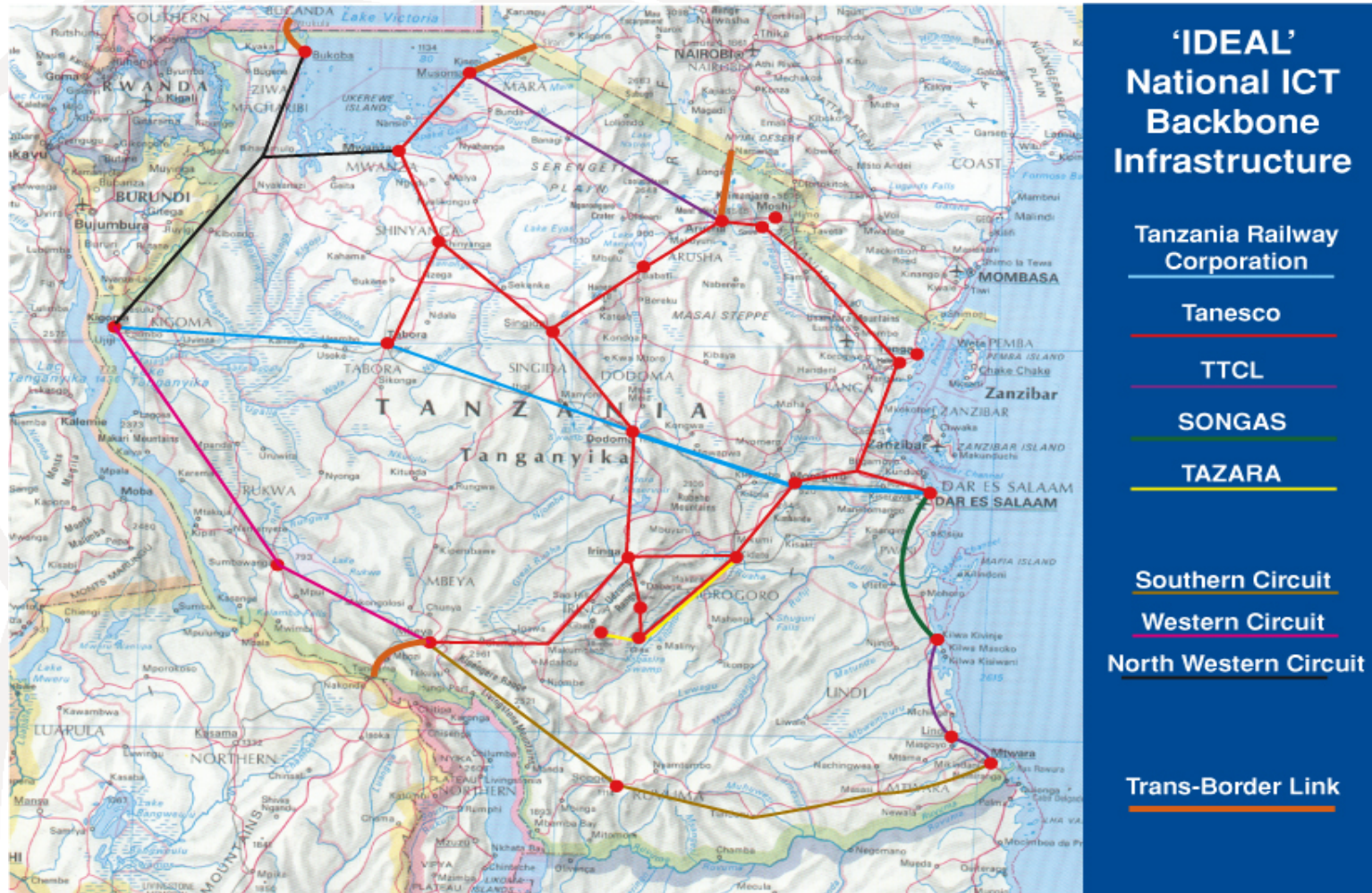 - Escalated Regional Integration

Financial & Economic Analysis

- **Estimated Project Cost**
  - Scenario 1 (All Microwave) – US$ 7/10m
  - Scenario 2 (All Fiber) – US$ 52m
  - Scenario 3 (Mixture) – US$ 39/42m

- **Viability Calculations**
- **Revenue & Expenditure Estimations**
- **Financial Viability**
- **Sensitivity Analysis**

Individual Country Approaches

- Burundi
- Kenya
- Rwanda
- Uganda
- Tanzania

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Tanzania – Efforts Towards NGN
(Source: TCRA)

Conclusions & Way Forward

- Resource Mobilization & Possible Financing
- Resource Sharing
- Regulatory, Legislative & Institutional Reforms
- Spectrum Utilization & Management
- Open Access Principals

- Broadcasting & 'Other' ICT Services
- Rwanda & Burundi
- EAC/ADB/ITU – EAC-BIN
- Seeking Concurrence of Major Potential Stakeholders (esp. Telcos)
- Conclusion

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