Regional Development Forum 2008
"Bridging the Standardization Gap in Developing Countries"
Accra, Ghana, 26-28 May 2008

Making Sense of the Linkage between ICT standardization and Development: The Case of Developing Countries

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Accra, Ghana, 26-28 May 2008

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Introduction

Standardization is pervasive; and (should) covers

- Policy and Regulatory harmonization (incl. promotion of standards compliant access to ICT)

- ICT Technical systems

- Quality of service

- Human resource development

- ICT Supporting infrastructure such as way leaves, towers etc

Observations

- ICT positively impacts socio-economic development
- Affordability of ICT services is critical
- Need for ICT systems with low OPEX and low CAPEX
- Level playing field is imperative
- Partnerships and collaboration is key
- ICT is an enabler for the other sectors of the economy

Needs Assessment

- Migration from legacy to NGN with protection of existing investment
- Building human capacity in NGNs, standardization, applications etc
- Seem less service level across regions
- Broadband infrastructure across regions
- Policy and regulatory harmonization across regions

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Development Issues

- Network and applications: need low OPEX, efficient CAPEX application< affordable

- Broadband development: over xDSL, BWA, WiMAX, GSM, CDMA

- Human Capacity building in : planning, engineering, deployment, commercialization and in O&M

- Use of ICT for human development

  - i.e. mainstreaming ICT into all sectors of the economy

Development Issues

- ## Maintenance and management networks
  - Disparate network elements (switches, radios, transmission equipment etc)
  - No seamless service across networks – some services are not available on certain network elements
  - Multiple vendor networks (elements with incompatible O&M and management systems

Development Issues

- Quality of Service QoS
  - Needs to be more deterministic with SLA
  - Difficulty in ensuring end to end QoS due to different network elements
  - Vandalism in search of copper – need civic education

Past Experiences in Network Evolution

- Lack of National (and even regional) ICT Master plan/s with clear strategies, actions and implementation framework is necessary

- High OPEX, therefore high TCO

- Multiple vendor proprietary systems resulting in high CAPEX on inter-working equipment

- Cases (of dumping?) of obsolete systems in networks

Challenges in Addressing the Development issues

- inadequate framework/s for collaboration/partnership with all sectors of economy
- Efficient utilization of scarce resources such as frequency spectrum, way leaves, towers etc
- Unclear migration path from legacy to NGN systems
- Constrained capital resources to ensure QoS implementation on 'small networks'
- High CAPEX and OPEX arising from incompatible multiple vendor systems

Challenges in addressing the Development Issues

- Inadequate human capacity to handle migration to NGN - upgrading of skills (where possible) is required or completely new skills

- different licensing/regulatory requirements across countries thus hindering fast large scale ICT deployments

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Achievement so Far

- National broadband initiatives
- Individual operator's initiatives
- Rural connectivity initiatives
- ICT infrastructure for Government
- Regional Broadband Masterplan
- Move towards technology neutral licensing regimes

Tackling the Challenges of NGN

- Deploy industry standard systems based on IP
- Human capacity building in NGN (standards, O&M, network management etc)
- Leverage the IP based open standards for O&M
- Robust engagement with vendors to obtain industry standards systems
- Working closely with ITU-T on standards
- Collaboration and partnerships between all stakeholders (operators/Service providers, customers, regulators etc)

ITU can/Plays a Role by:

- Supporting efforts by LDCs to migrate their systems

- Human capacity building

- Standardization in the ICT sector

- Facilitation of forums (like this one) for all stakeholders to engage in realization of the desired results

Proposed Role of African Stakeholders

Network Operators/service providers:

- Assert more in standardization work of ITU

- 'Listen' to their customers

- Migrate from legacy systems to NGNs

- Effectively engage with ICT equipment/systems vendors

Role of African Stakeholders

Users/consumers

- Demand for quality services and pay for them
- Form consumer organizations to articulate their interests
- Assist in curbing vandalism

Regulators

- Continuously ensure level playing ground
- Address high frequency spectrum fees
- Adopt unified technology neutral licensing and regulatory framework

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Regulators contd.

- Continuously operationalise Universal Access strategies to enable service to less economically viable parts of the population

Using Past lessons to Improve the Future

- Build human capacity to handle the dynamic ICT sector
- Ensure open standard network and service platform for seem less service
- Listen to the customer more
- Competitive pricing
- Collaborate with all stakeholders through partnerships
- Participate in standards and other working groups of ITU
- Compete and at the same time cooperate with your competitors: not curtails!

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ICT and Human development

Aspect

- Standard ICT systems

- Low cost

- Affordability

- But: Access to ICT leads to Economic growth

Leads to:

- Low CAPEX, low OPEX therefore low cost

- More affordable prices

- More people access ICTs for productivity

- All sectors of the economy perform better

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ICT and Human development

Aspect

- Economic growth

Leads to:

Better education, better health etc means better standards of living and ultimately higher human development index

ICT and Human development

- So, to the extent that:
  - (1) there are non-standard and obsolete ICT systems curtail the access to global wealth of ICT resources;
  - (2) Lack of adequate human capacity in standardization arena;   the gap between LDCs and the rest of the world will keep widening

- The gap needs to be bridged and rapidly narrowed

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Recommendation/Conclusion

- Human capacity building in the realm of NGN (and standardization thereof) is critical to avoid previous pitfalls

- Formation of Regional ICT standardization committees to assess standardization requirements and take up with the ITU for assistance

- Continuous pursuit of efficient pricing and utilization of frequency spectrum

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Recommendation/Conclusion

- National (and even regional) ICT Master plan/s with clear strategies, actions plans and implementation framework

- Standardization is crucial for the migration from legacy to NGNs: therefore network operators need to actively participate in this activity

- ICT regulation and licensing needs to move faster to be consistent with the current state of ICT: convergence