Enabling NGN Regulatory Ecosystem for a Developing Country: Kenya

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KENYA

•Population (millions): 37.2

•Growth of GDP at constant (2001) prices: 7.0%

•Transport and communication as % of GDP: 11.4
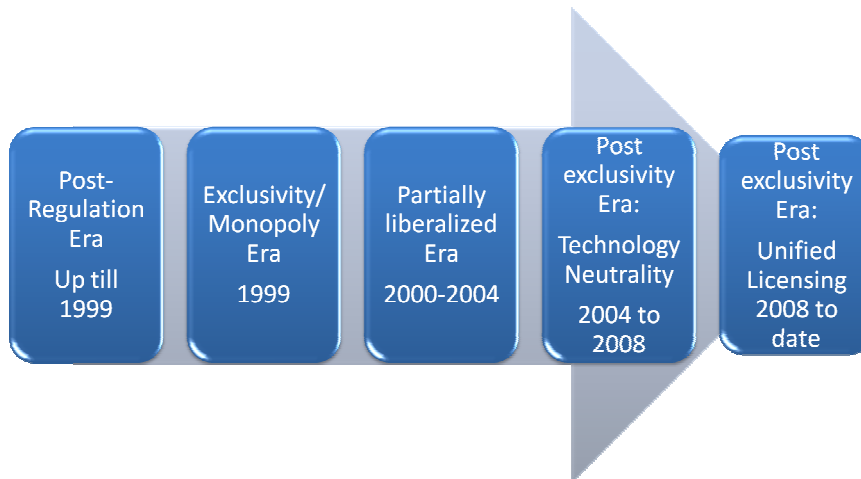
•Postal and telecommunications as % of GDP: 3.5

Source: adapted from Economic survey, 2008

Reforming the Kenyan Regulatory Framework

- Main factors affecting regulations:
  - Competition - Liberalization
  - Convergence - blurring of licensing boundaries

- Review of Regulatory Framework
  - Additional licence categories
  - Technology neutrality

Reforming the Kenyan Regulatory Framework

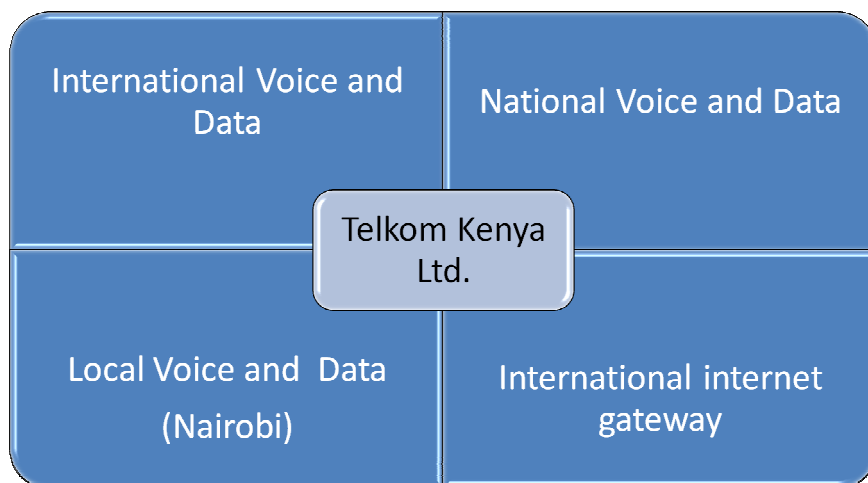| Post-Regulation Era Up till 1999 | Exclusivity/ Monopoly Era 1999 | Partially liberalized Era 2000-2004 | Post exclusivity Era: Technology Neutrality 2004 to 2008 | Post exclusivity Era: Unified Licensing 2008 to date |

Post-Regulation Era

- 1977: Establishment of the Kenya Post and Telecommunications Corporation (KPTC)
- 1991: Telecommunication equipment liberalization
- Economic Reforms 1996-1998 establish framework for:
  - Separation of postal and telecommunications services;
  - Increased private sector participation and
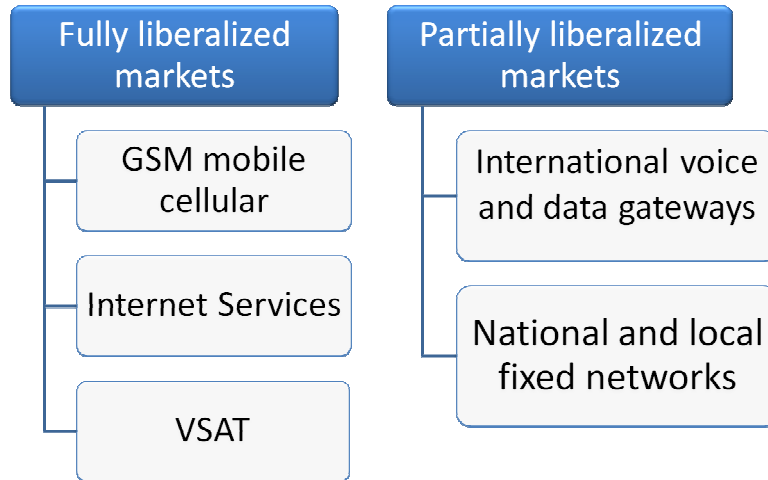 - Liberalisation of the mobile and Very Small Aperture Terminals (VSAT) markets

Exclusivity Era (1999 -2004)

- Kenya Communications Act (KCA), 1998
- Provisions: licensing, competition safeguards, interconnection, universal service, allocation and use of scarce resources
- Unbundling of defunct state-owned corporation KPTC into 3 entities;
  - Postal Corporation of Kenya (PCK),
  - Telkom Kenya Limited (TKL)
  - Communications Commission of Kenya (CCK)

    And
  - National Communications Secretariat (NCS)
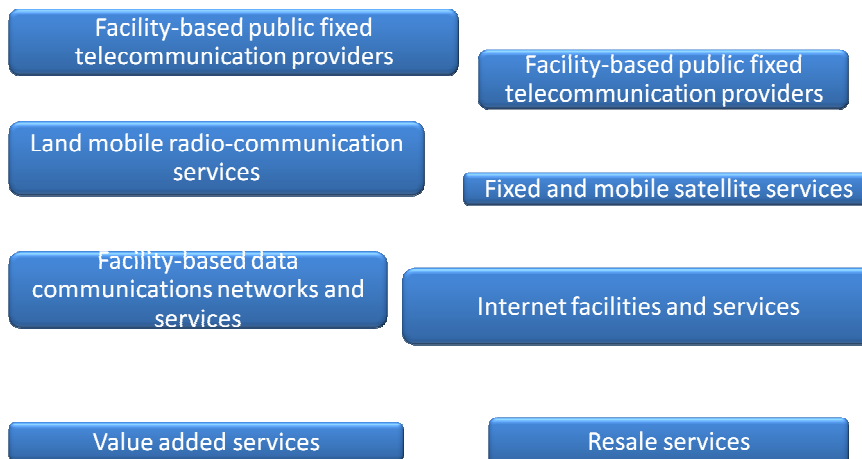 - Communications Appeals Tribunal

Exclusivity Era (1999 -2004)

International Voice and Data	National Voice and Data
Telkom Kenya Ltd.	
Local Voice and Data (Nairobi)	International internet gateway

Partially Liberalized Era (2000-2004)

Fully liberalized markets

- GSM mobile cellular
- Internet Services
- VSAT

Partially liberalized markets

- International voice and data gateways
- National and local fixed networks

Partially Liberalized Era: Market Structure (2002)

- Facility-based public fixed telecommunication providers
- Facility-based public fixed telecommunication providers
- Land mobile radio-communication services
- Fixed and mobile satellite services
- Facility-based data communications networks and services
- Internet facilities and services
- Value added services
- Resale services

Partially Liberalized Era:
Market Structure (2002-2004)

- Facility based operators (Type I Carriers)
  - Regional telecommunication services (Regional carriers)
  - Long-Distance Telecommunication services (Inter-regional carriers)
  - International Telecommunications services (International carriers)
  - Local telecommunications services (Local carrier/traffic aggregators)

Partially Liberalized Era:
Market Structure (2002-2004)

- Land mobile radio communication services (Type II Carriers)
  - Cellular mobile telephone service providers (mobile operators)
  - Public and private radio paging service providers (paging service providers)
  - Private and commercial trunked radio-communication network operators (CTROs)
  - Private two-way radio network operators (Two-way radio systems)

Partially Liberalized Era:
Market Structure (2002-2004)

- Fixed and mobile satellite services
  - Public satellite uplink/downlink gateway services (Gateway services licence)
  - National commercial VSAT network services (National shared hub VSAT services licence)
  - International commercial VSAT network services (international shared-hub VSAT service licence)
  - Private VSAT networks (self provisioning VSAT network licence)
  - GMPCS Gateway service licence
  - GMPCS Service providers (GMPCS agency licence)
  - GMPCS fixed and mobile terminals (Authority to use)
  - VSAT Terminals (Licence to use VSAT terminal with transmit capability)
  - Satellite-based Paging Network and Service Licence

Partially Liberalized Era:
Market Structure (2002-2004)

- Facility-based Data Communications Networks and Services (non-voice-band data networks)
- Value-added Services
  - Premium rate service providers
  - Audio-text service providers
  - Store and forward services providers
  - Electronic data interchange
  - Credit card validation platform service providers
 - Number portability platform providers

Partially Liberalized Era:
Market Structure (2002-2004)

- Internet Facilities and Services
  - ISP
  - IXP
- Resale service
  - Payphone service providers
  - Telephone access bureau service providers
  - Cyber café service providers
  - Bandwidth/leased providers
- Telecommunications dealers/persons' licence

Post exclusivity Era (2004–2008)

- Technology neutrality
  - VoIP guidelines: VoIP services provided by licensed service providers without the further licensing requirements
  - WLAN guidelines: self regulation
- Technology convergence
  - Initiative to merge licences (DCNO)

NGN

Traditional Analog Services → The Future of Digital Services

SILOS | Layers
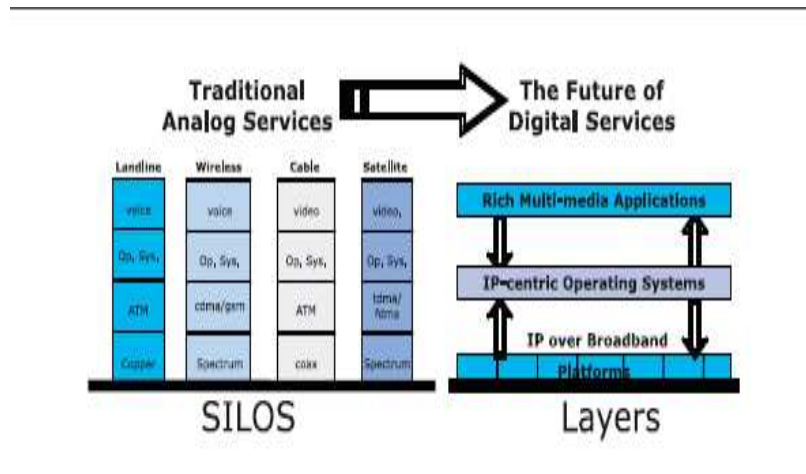
NGN

- NGN enable the delivery of multiple services independent of and over different access and core networks
- NGN Principles
  - Support for multiple access technologies
  - Distributed control
  - Open control
  - Independent service provisioning
  - Support for services in a converged network
 - Enhanced security and protection

NGN Drivers

- Consumer demand:
  - Intelligence at the edges
  - ease of use, reliability and mobility
- Competition:
  - Customer expectations
  - VAS:
    - » Network operators can move up the value chain towards application and content
    - » Increase Average revenue per user (ARPU) through differentiation

NGN Drivers

- Reduction of CAPEX and OPEX:
  - Fewer components for equivalent network
  - Optimization of networks
- Convergence
  - blurring of distinctions between wireline voice, cellular, cable and data networks
  - Change network economics lowering barriers to entry
  - Bundling of services
- Infrastructure heterogeneity or commoditization
  - deploy NGN to booster margins and move to a new markets by launching new services
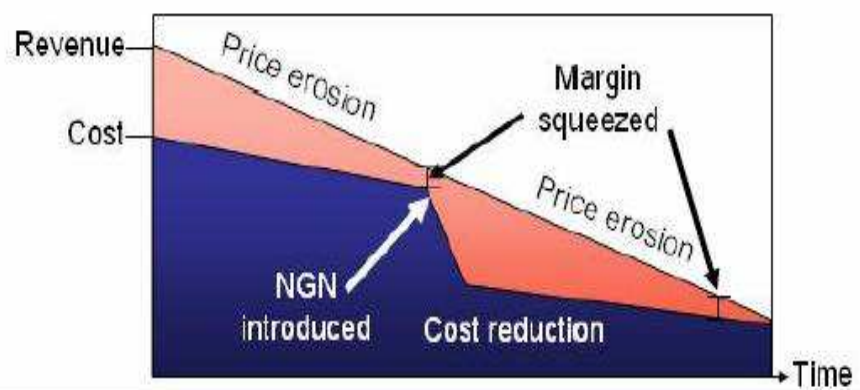
NGN Drivers
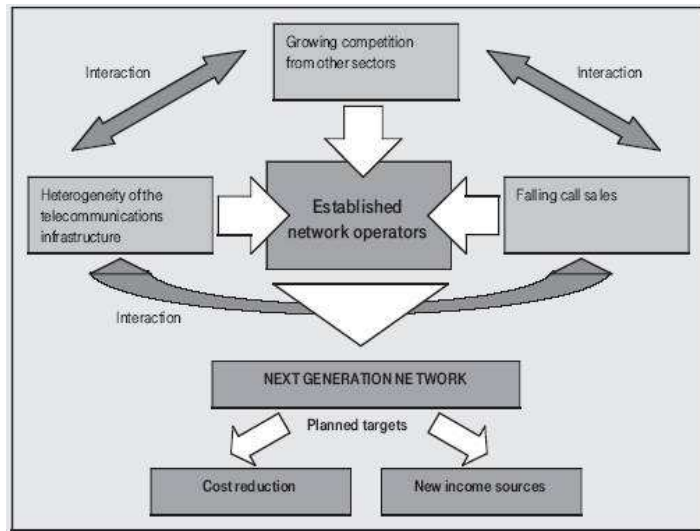
NGN Drivers

NGNs with cost reduction only
(*Adopted from Sonus networks, 2004)*

NGN Drivers
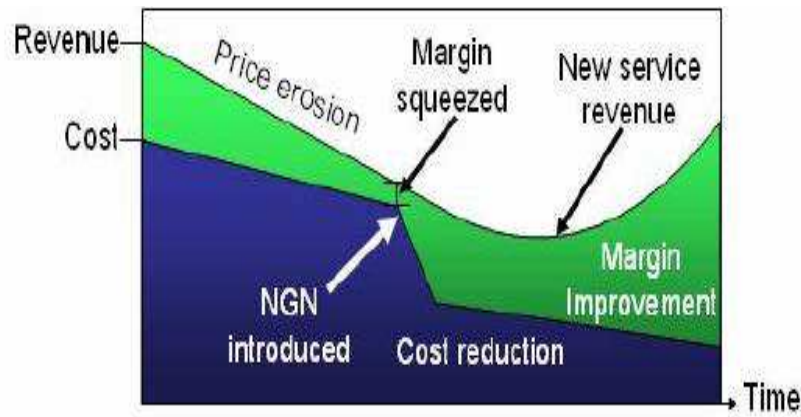
NGNs with cost reduction and new services

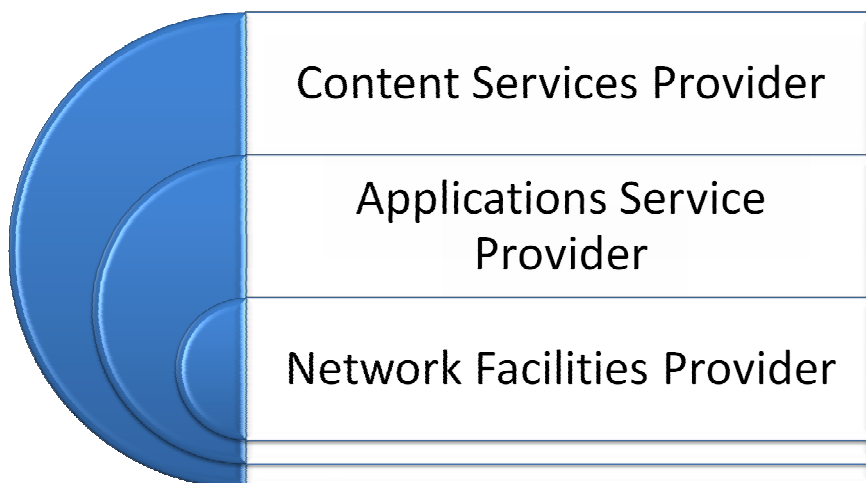*(Adopted from Sonus networks, 2004)*

NGN Regulation

- Key factors: Competition - Lowering barriers to entry
  - Unbundling: Infrastructure and services separation
  - Availability of "disruptive" technologies: VoIP
  - Number portability
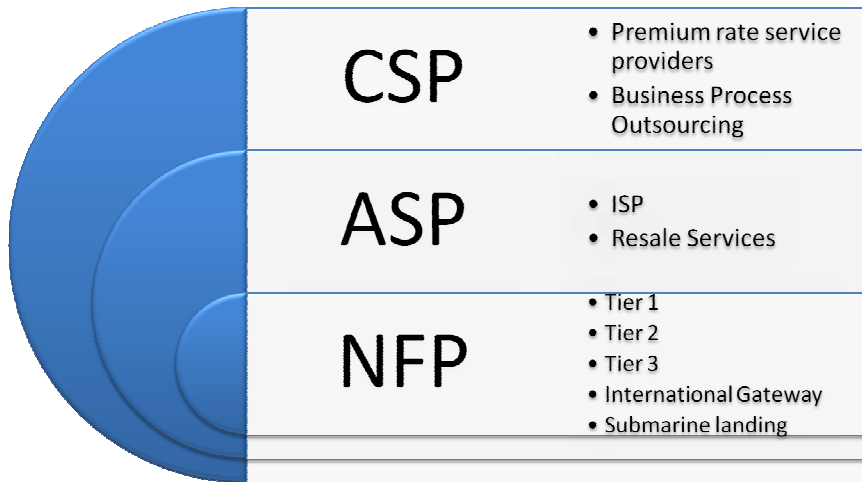 - Roaming: One network concept

NGN Regulation

- Traditional vertical orientated regulatory structure
  - interconnection distortions,
  - universal service concerns and
  - disincentive for the investment
- Converged, Technology neutral, layered regulation
  - functionally similar services – regulated in the same way

NGN Regulation: Unified Licensing Framework (2008-to date)

Content Services Provider

Applications Service Provider

Network Facilities Provider

NGN Regulation: Unified Licensing Framework (2008-to date)

CSP	• Premium rate service providers • Business Process Outsourcing
ASP	• ISP • Resale Services
NFP	• Tier 1 • Tier 2 • Tier 3 • International Gateway • Submarine landing

Unified Licensing Framework :NFP

Category	Description	Initial Licence Fee	Operating Licence Fee
Tier 1	National Fixed and Mobile Operators	Kshs 15million (US$ 200,000)	0.5% gross turn over
Tier 2	Public Network Operators	Kshs 15million (US$ 200,000)	0.5% gross turn over
Tier 3	Local Loop Operators	Kshs 200, 000 (US$ 2700)	0.5% gross turn over

Exchange rate: 1US$= Kshs75

Unified Licensing Framework :NFP

Category	Description	Initial Licence Fee	Operating Licence Fee
International gateway licence	Satellite or terrestrial	Kshs 15million (US$ 200,000)	0.5% gross turn over
Submarine cable landing licence		US$1 million	0.5% gross turn over

Exchange rate: 1US$= Kshs75

Unified Licensing Framework :ASP

Category	Description	Initial Licence Fee	Operating Licence Fee
ISP IXP GMPCS	Internet services/ Value added services	Kshs 100,000 (US$ 1400)	Kshs 100,000 Or 0.5% gross turnover

Exchange rate: 1US$= Kshs75

Unified Licensing Framework :CSP

Category	Description	Initial Licence Fee	Operating Licence Fee
PRSP	Premium rate services	Kshs 100,000 (US$ 1400)	Kshs 100,000 Or 0.5% gross turnover
BPO	Outsourcing	Kshs 10, 000 (US$ 1400)	N/A

Exchange rate: 1US$= Kshs75

Unified Licensing Framework Objectives:

- To encourage growth of **new applications and services**.
- **Simplify licensing** procedures
- Ensure flexibility and efficient utilization of **resources**
- Create **level playing field** and fair transition to the new licensing regime.
- Encourage provision of services in **underserved areas**
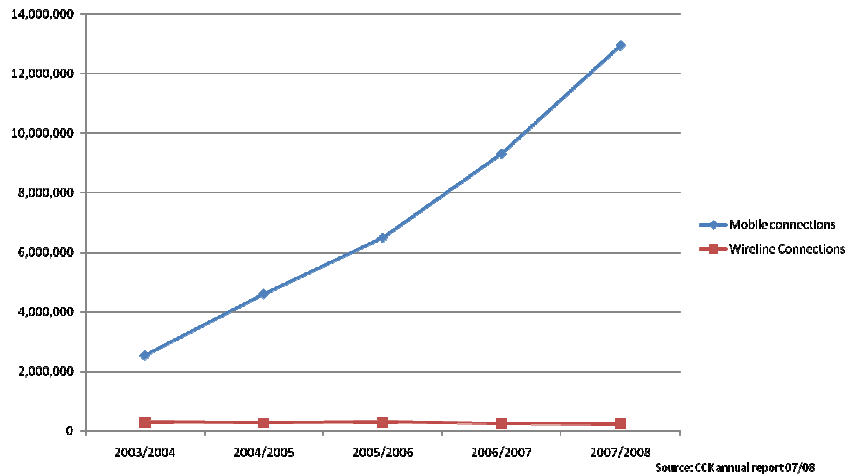
Unified Licensing Framework: Results

- Increased infrastructure investment
  - Private sector
  - Public sector : Operated on an **open access basis**
- Service innovation - Mobile money transfer
- Increased internet service penetration/availability – Mobile internet
- Improved quality of service
- Reduced cost of services

Unified Licensing Framework: Results

- Network Facility Provider (NFP):
  - Tier 1: 4
  - Tier 2: 6
  - Tier 3: 3
  - Submarine cable:2
  - International gateway:8
- Application Service Providers (ASP): 17
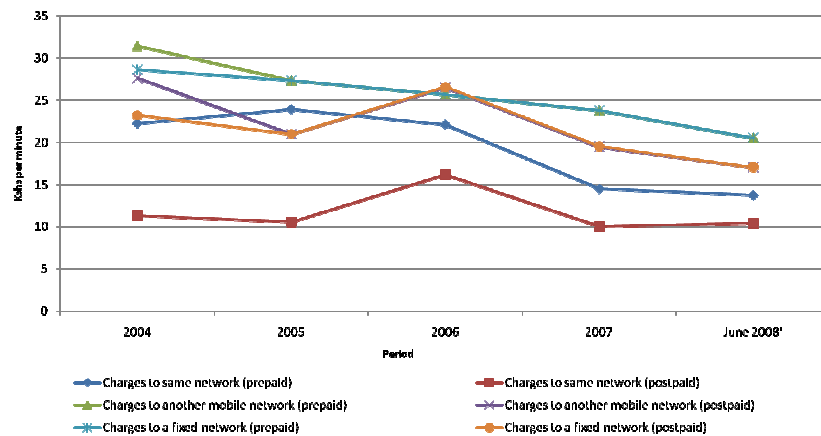- Content Service Providers (CSP): 24

Unified Licensing Framework: Results Mobile vs Wireline connections

Source: CCK annual report 07/08

Unified Licensing Framework: Results:Average Voice Tariff Trends

Source: CCK annual report 07/08

Enabling NGN Regulatory Ecosystem

- Steps towards a regulatory reform in a converged environment:
  - Public consultation
  - Review of the market structure and regulatory framework
  - Review components of the universal service basket
  - Evaluation and monitoring of the relevant indicators
  - The enactment of a convergence bill
  - A review of the regulator's functional structure
    - Source: ITU (2006) Building and Inclusive Information Society for all in Africa: Regulatory Challenges and Opportunities.

Enabling NGN Regulatory Ecosystem: Kenya

- Public consultation:
  - Voice over Internet Protocol (VoIP)
  - Infrastructure sharing
  - Unified licensing
  - Digital broadcasting
- Review of the market structure and regulatory framework:
  - Research and benchmarking
  - Unified Licensing Framework

Enabling NGN Regulatory Ecosystem: Kenya

- The enactment of a convergence bill:
  - Kenya Communications (Amendment) Act, 2009
    - Broadcasting
    - E-Transactions
    - Universal Service Fund
  - A review of the regulator's functional structure
  - Independence of the regulator
  - Converged regulator: ICT regulation

Conclusion

It's not easy being a regulator.

You are forever having to answer the same question: **Do I regulate this or not?**

- http://voip-movoip.net/my-voip/review-service-voip/review-service-voip.html

- The Unified Licensing Framework provides the flexibility required to keep pace with technological changes

Thank you!

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