

POLICY AND REGULATORY FRAMEWORK FOR NGN INTERCONNECTION IN SRI LANKA

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Science in Telecommunication

Department of Electronic and Telecommunication Engineering

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DECLARATION

I declare that this is my own work and this dissertation does not incorporate any material previously submitted for a Degree or Diploma in any other University or Institute of higher learning without acknowledgement. I herewith confirm to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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ABSTRACT

Policy and regulatory framework for NGN interconnection in Sri Lanka

The NGN represents a synthesis of existing world of the traditional Public Switched Telephone Network (PSTN) with the world of the Internet. The economic and regulatory arrangements for the two have historically been very different. Many of the networks created over the past ten years contain most of the key elements of an NGN. Most, if not all, of the technology necessary for IP-based NGN interconnection has been available for five to ten years. Advanced approaches to interconnection have been slow to deploy, even where the technology has been mature or within hailing distance of maturity.

In order to propose a regulatory and policy framework to interconnect NGN in Sri Lanka, it is analyzed existing technologies, standards, and practices of other countries and regions. It is analyzed the future telecommunication trends and impact to the new NGN interconnection model from those future trends. The current interconnection model and future predicted network structure in Sri Lanka is analyzed in order to make sure the proposing interconnection structure is a future proof one. It is selected one major mobile telecommunication operator in Sri Lanka and analyzed the characteristics of traffic distribution. It can be identified that traffic distribution of selected operator is correlated with population distribution in Sri Lanka. Therefore it is proposed a new interconnection topology to Sri Lanka based on that traffic analysis.

It can be identified that more than 50% of traffic is originated and terminated in same region. Therefore it is proposed five regional interconnection hubs with ENUM registries for Sri Lanka. Interconnection hubs are positioned at population centers not in geographical centers. It is proposed to mandate every operator to connect in to interconnection hub. Interconnection hub will be managed by TRCSL as independent non for profit entity. The view of TRCSL on proposed model and regulatory framework is taken and analyzed at the end.

Keywords: Next Generation Network, Interconnection, Regulatory & Policy Framework

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ABBREVIATIONS

NGN- Next Generation Networks
PSTN-Public Switched Telephone Networks
GSMA- Global System for Mobile Association
IP-Internet Protocol
IPX- IP Exchange
VoIP- Voice over IP
CPNP- Calling party network pays
CPP-Calling party pays
RPP- Receiving Party Pays
EBC -element base charging
UC-Unified communication
MGW- Media Gateway
SGW- Signaling Gateway
SBC- Session Border controller
IPX- IP Exchange
GRX- GPRS Roaming Exchange
QoS- Quality of Service
OPEX- Operation Expenditure
SPIT- Spam over IP telephony
DoS– Denial of service
NBN– National Broadband Network
UNWP– Uniform National Wholesale Price
POI- Point of interconnection
LTIE -long-term interests of end-users
ACCC- Australian Competition and Consumer Commission
RACS- Resource and Admission Control Subsystem

