

ITU Asia-Pacific Centre of Excellence Programme on “Conformity and Interoperability” for the Asia-Pacific Region

(17-21 October 2016, Chongqing, P. R. China)

Telecommunication Standardisation Activities in Nepal

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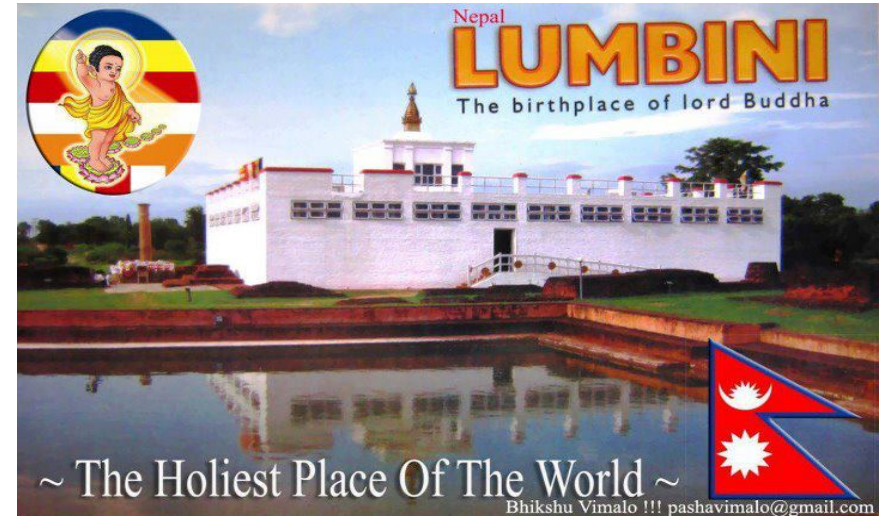
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Outline

- About Nepal
- Status of Telecom in Nepal
- Standardisation Activities in Nepal

Nepal

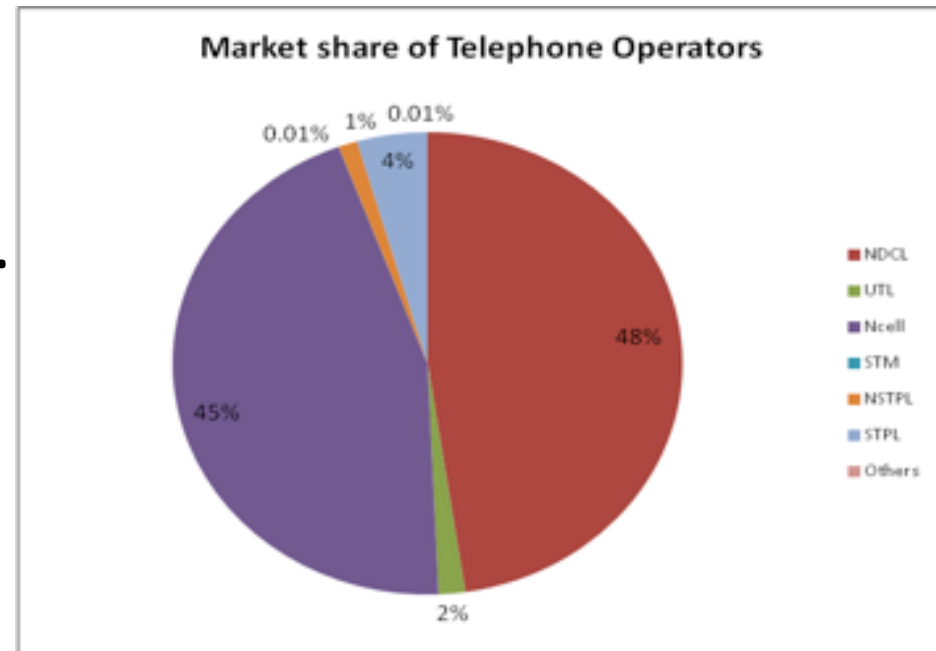


Some Facts

- **Official Name:** Republic of Nepal
- **Capital City:** Kathmandu
- **Head of Country:** President, Vidya Bhandari
- **Head of Government:** Prime Minister, Mr. Pushpa Kamal Dahal
- **Geographical Location:** lies between $80^{\circ} 4'$ and $88^{\circ} 12'$ east longitude and $26^{\circ} 22'$ north latitude. It is Small, Landlocked, Mountainous Country located in between biggest countries India and China
- **Area:** 1,47,181 sq. Kms.
- **Altitude:** Varies from 70 to 8848 meters.
- **Capital:** Kathmandu.
- **Population:** 26,494,504 (as of 2068 B.S./2011 A.D.)

Telecom Operators of Nepal

- Nepal Doorsanchar Company Limited (NDCL)
- Ncell Pvt. Ltd. (Ncell)
- STM Telecom Sanchar Pvt. Ltd. (STM)
- United Telecom Ltd. (UTL)
- Nepal Satellite Telecom Pvt. Ltd. (NSTPL)
- Smart Telecom Pvt. Ltd.(STPL)



Voice Telephony Services till May 2016

(Source: www.nta.gov.np)

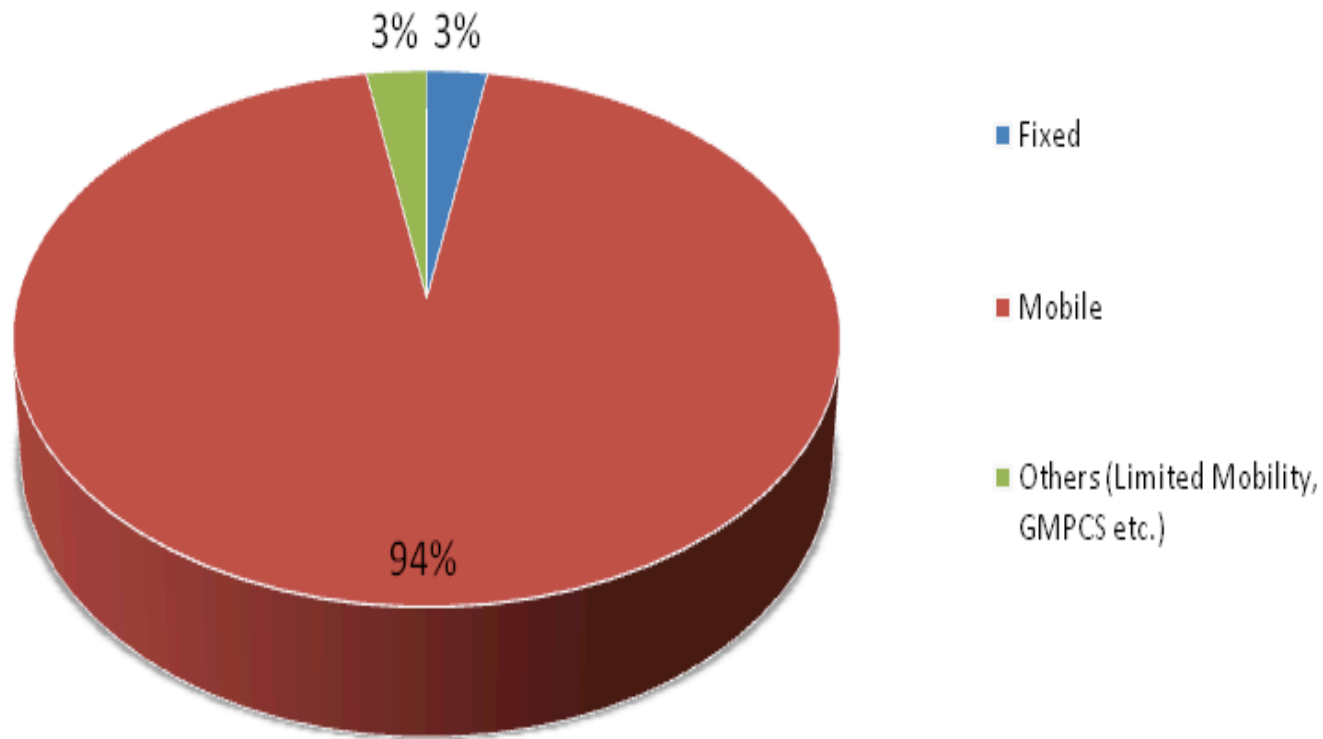
Services Operators	Fixed		Mobile		Others		Total
	PSTN	WLL	GSM	CDMA	LMS	GMPCS	
NDCL	674640	122378	12616534	1406649	-	-	14820201
UTL	-	50106	-	-	476529	-	526635
NCEU	-	-	14006458	-	-	-	14006458
STM*	**2832	-	-	-	155	-	2987
NSTPL*		2984	-	-	368684	-	371668
STPL	**598	-	1389266	-	-	-	1389864
Others	-	-	-	-	-	1742	1742
Total	678070	175468	28012258	1406649	845368	1742	31119555
	853538		29418907		847110		
Services							Subscription (%)
Fixed							3.22
Mobile							111.04
Others (LMS, GMPCS)							3.20
Total							117.46

Population of Nepal 26,494,504 (Source: cbs.gov.np)

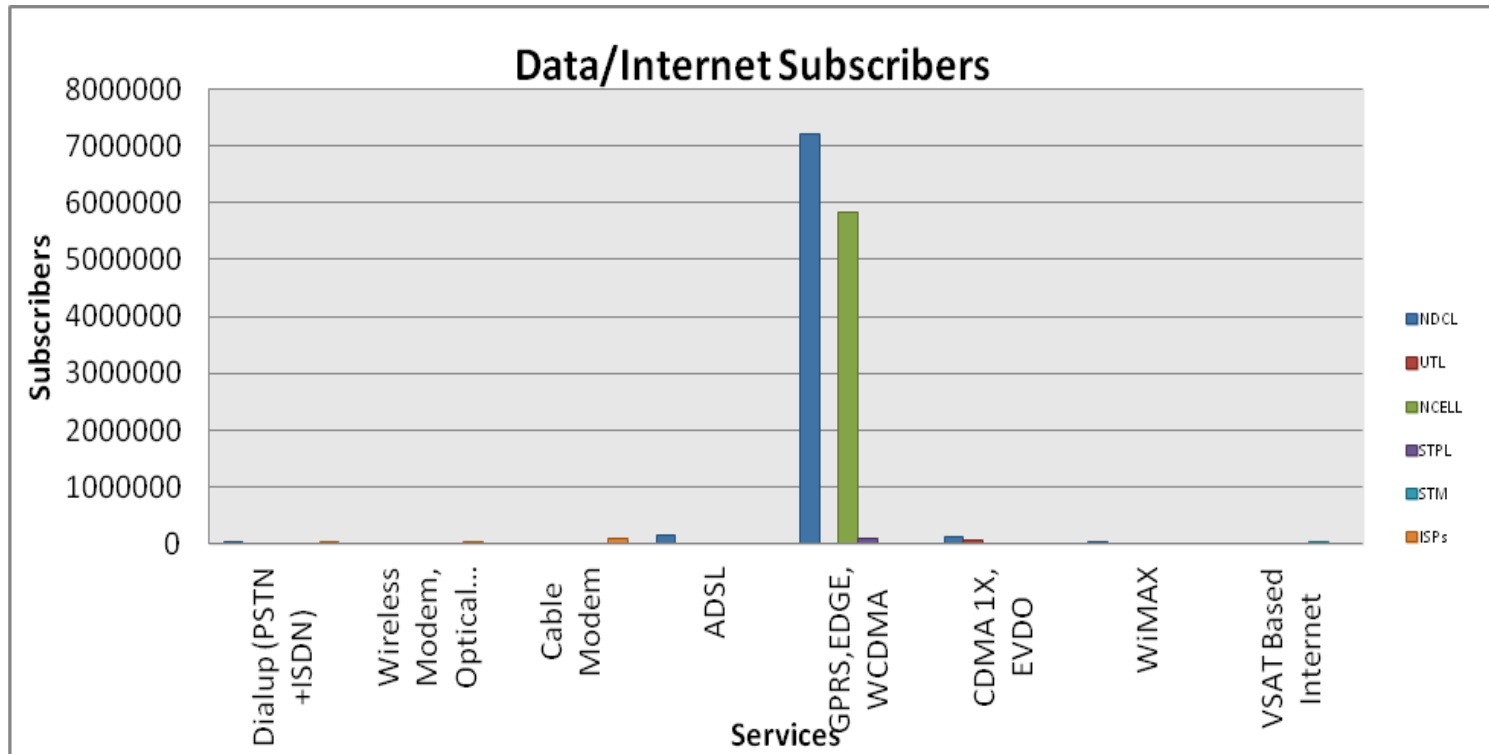
Data/Internet Services till May 2016 (Source: www.nta.gov.np)

Services	Subscribers				Total
	NDCL	UTL	NCELL	ISPs	
Dialup (PSTN +ISDN)	4,736	-	-	10,197	14,933
Wireless Modem, Optical Fibre Ethernet	-	-	-	63,038	63,038
Cable Modem	-	-	-	24,454	24,454
ADSL	119,111	-	-	-	191,111
GPRS,EDGE,WCDMA	3,698,275	-	3,730,144	-	7,428,419
CDMA 1X, EVDO	136,573	99,265	-	-	235,838
WiMAX	6,790	-	-	-	6,790
Total	3,965,485	99,265	3,730,144	97,689	7,892,583
Internet Penetration Rate %					29.78

Market share of Telephone Service (Till May 2016 (Source: www.nta.gov.np))



Till May 2016 (Source: www.nta.gov.np)



Telecom Technologies Deployed

- PSTN
- GSM
- CDMA
- WCDMA
- WiMax
- LTE (Planned to be deployed very soon)

Legislative Provision for Standardisation

- Radio Act, 1957 and Radio Communication (License) Regulation, 1992
- Telecommunication Act, 1997
- Quality of Service (QoS) Benchmark of different Telecommunication Services (Fixed, Mobile and Internet)
- Type Approval Working Procedure for Radio Telecommunication Customer Premises Equipment, 2016 (TAP-04)

Type Approval

- For radio telecommunication customer premises equipments (CPEs), NTA has been doing the type approval of radio telecommunication CPEs.
- All the concerned manufacturers/authorised agents/representatives require applying and getting type approval for the radio telecommunication CPEs from NTA prior to import and/or sale in Nepal.

Equipment Identified for Type Approval

- a. Customer site Terminals that connect to public switched Network
 - i. GSM/IMT-2000/ IMT Advanced
 - ii. CDMA
 - iii. GMPCS
 - iv. Other telecom devices used to connect to mobile or PSTN network
- b. Low Power Devices (LPDs) or Short Range Devices (SRDs) (WLAN - WiFi, Bluetooth, and other 802.11x standard devices having 4W (max.EIRP) & 1 W Max. transmitter output power, Frequency bands: 2.4 GHz, 5.1 GHz and 5.8 GHz)

Technical Specification for Mobile Handset

Specific Absorption Rate: The handset shall have the SAR standard of maximum 2 W/Kg, averaged over 10 gm of tissue

a. Receiver Sensitivity: -102 dBm

b. Maximum EIRP: 33+/-2 dBm

c. Minimum Charging Capacity: 600 mAh (Bar Phone and 1000 mAh(Smart Phone)

Documentation for Type Approval

- A copy of receipt voucher relating to the payment of application fee of nonrefundable NRs. 1,000.00 for new application for provisional Type Approval certificate.
- Functional Description with circuit Diagram or Block Diagram
- Product brochures including technical specifications.
- Operation/installation/user manual.
- Internal and external photographs of the equipment.
- Radio, SAR, Safety and EMC Test reports/Certification by the manufacturer or the authorised representative of the manufacturer *and/or* Type Approval Certificate issued by at least one of the international/national/territorial standard bodies
- Declaration of Conformity (DoC) from the applicant in the format specified in Annex-4
- Local representative documents:
 - Copy of Certificate from Office of Company Registrar, Ministry of Industry, Government of Nepal or Department of Commerce and Supply Management, Government of Nepal and
 - Copy of Permanent Account Number Certificate from Inland Revenue Department, Ministry of Finance, Government of Nepal)
- Letter of authorisation (Power of Attorney) from the manufacturer to the local representative

Equipment Import Authorisation

- The licensees of NTA need NTA's recommendation to import infrastructure equipments for establishment and/or extension of network to provide telecommunication services.
- Such recommendations, when requested by the NTA's licensees, are sent to the Ministry of Information and Communication who forwards its final recommendation to the Department of Customs or Department of Commerce as appropriate NTA has not yet adopted any standard operating procedure or has not formulated any guidelines based on which such process is carried out.
- During the process of such recommendation, technical specification will be evaluated to determine whether the operating frequency range is as per the spectrum assigned to the applicant (NTA's licensee) or not and compliance of international standards e.g. ETSI, ITU or not.
- In case of Microwave radio telecommunication equipment, frequency plan and network diagram will also be evaluated to determine whether the spot frequencies are approved by NTA or not.

Ongoing Activities on ICT Standardisation and Conformity System in Nepal

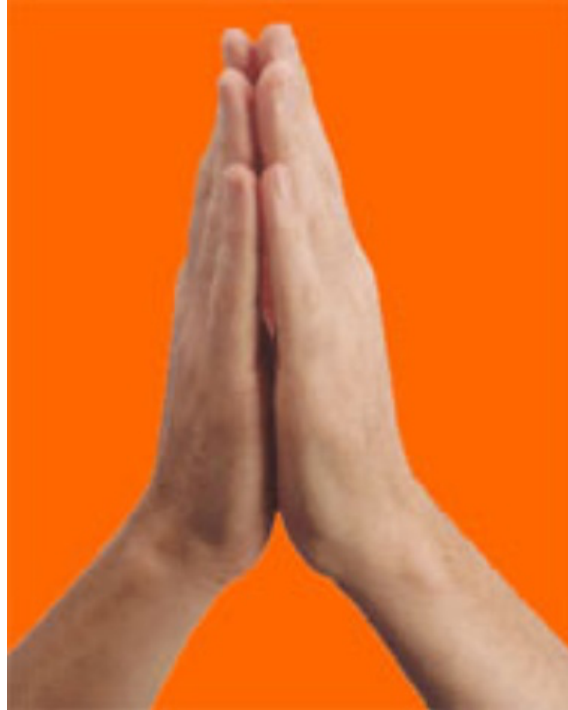
- Formulation of Regulatory framework of Standardisation of Radio Telecommunication Equipment
- Formulation of Regulatory framework of Type Approval/Licensing of LPD/SRD
- Formulation of Regulatory framework of E-Waste Management
- Formulation of Regulatory framework of National Numbering Allocation, Assignment and Pricing
- Formulation of directives/guidelines for implementation of national EIR
- Formulation of bylaws of quality of service for telecommunication services

Limitations of ICT Standardisation and Conformity System in Nepal

- There is no laboratory inside the country to test the compliance of the requirement of type approval.
- The type approval of radio telecommunication CPEs is only based on document verification. NTA recognised certificates/test reports of international/national/territorial standard bodies like a unilateral mutual recognised agreement (MRA).
- There is lack of human resources and technical expertise for ICT standardisation and conformity system in Nepal.
- Only Customer site radio terminals that connect to public switched Network e.g. GSM, CDMA, IMT 2000, IMT Advanced, GMPCS etc and LPDs/SRDs with operating frequency bands 2.4 GHz, 5.1 GHz and 5.8 GHz are facilitated for type approval.
- There are many LPDs/SRDs operating beyond frequency bands 2.4 GHz, 5.1 GHz and 5.8 GHz. There is no standard/benchmark like frequency range and RF output power level for such equipment which are essential for type approval

Recommendation and Conclusion

- This presentation shows the current status of conformance and interoperability in Nepal.
- ITU needs to facilitate to establish laboratory for conformance and interoperability.
- Such training helps to enhance capacity and performance of human resources involved in conformance and interoperability and also bridges the standardisation gap between developed country and developing country.
- ITU needs to encourage to increase participation from developing and under developed countries.



Thank You