Regulatory Impact on Technology Adoption in Telecommunications/ICT sector

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Setting the Context

- The world has witnessed tremendous growth in telecommunications and ICT sector in terms of adoption of technology, services and applications.

- But this adoption of is uneven across the world.

- The regulatory framework has significant impact on technology adoption in the ever burgeoning telecommunications and ICT sector.

- Proactive regulators ensure that all globally available technologies, services and applications are allowed in their respective jurisdiction to bridge the technology divide in this sector.

Global ICT scenario 2015

Microsoft Office
cel 97-2003 Worksh

Nepal's Telecom Statistics-voice as of Mid October 2015

1.1 Subscription of Voice Telephony Service :-

Services / Operators	Fixed		Mobile		Others		Total
	PSTN	WLL	GSM	CDMA	LMS	GMPCS	
NDCL	6,67,169	123,194	1,12,65,376	12,98,179	-	-	13,353,918
UTL	-	49,921	-	-	475, 441	-	525362
NCell	-	-	13,162,446	-	-	-	13,162,446
STM*	**2,832	-	-	-	155	-	2,987
NSTPL*		2,984	-	-	3,63,479	-	3,66,463
STPL	**598	-	13,46,489	-	-	-	13,47,087
Others	-	-	-	-	-	1,742	1,742
Total	670,599	176,099	25,774311	1298179	839075	1742	28760005
	846698		27072490		840817		

Services	Subscription (%)
Fixed	3.20
Mobile	102.18
Others (LMS, GMPCS)	3.17
Total	108.55

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

Nepal's Telecom Statistics-Data as of Mid October 2015

1.2 Data/Internet Services

Services	Subscribers						Total
	NDCL	**UTL**	**Ncell**	**STPL**	**STM**	**ISPs**	
Dialup (PSTN +ISDN)	4,278	-	-	-	-	5709	**9987**
Wireless Modem Optical Fibre Ethernet	-	-	-	-	-	45002	**45002**
Cable Modem	-	-	-	-	-	79409	**79409**
ADSL	1,63,665	-	-	-	-	-	**163665**
GPRS,EDGE,WCDMA	64,78,096	-	4,807,586	96,083		-	**11381765**
CDMA 1X, EVDO	136,573	62,859	-	-	-	-	**199432**
WiMAX	13,731	-	-	-	-	-	**13731**
VSAT based Internet	-	-	-	-	13		**13**
Total	**6796343**	**62,859**	**4,807,586**	**96,083**	**13**	**130120**	**11893004**
		Internet Penetration (%)					**44.89**

Proliferation of Connected Devices Global forecasts

- IoT devices will encompass more than 6.4 billion connected objects in use by 2016, a 30% rise from 2015.

- In turn, that number is expected to further explode by 2020, where the IoT market will include **20.8 billion** things
  - the Gartner report

Proliferation of Connected Devices Global forecasts

- the number of IoT (Internet of Things) connected devices will number 38.5 billion in 2020, up from 13.4 billion in 2015: a rise of over 285%.
  - Juniper Research

Proliferation of Connected Devices Global forcasts

- 33 Billion Internet Devices By 2020:

- Four Connected Devices for Every Person in the World

  – Strategy Analytics

M2M and IoT

- Machine-to-machine (M2M) describes the use of applications
  - enabled by the communication between two or more machines
  - connects machines, devices and appliances wirelessly via a variety of communications channels, including
    - IP and
    - SMS,
    - to deliver services with limited direct human intervention
- The Internet of Things (IoT) describes the coordination of
  - multiple machines,
  - devices and
  - appliances
  - connected to the Internet through multiple networks
- These include everyday objects such as
    - smartphones,
- tablets and
    - other consumer electronics, and
    - machines such as
    - vehicles,
    - monitors and
    - sensors
- equipped with M2M connectivity that allow them to send and receive data

What does it mean ?

- Technologies are disruptive
- But laws and regulations are outdated and do not encompass these emerging technologies in a timely manner

What is the implication then?

- Businesses have two options:
  - Ask the government and regulator for permission
  - Start adopting without explicit green signals from the government and regulator

What does the Government and regulator do?

- Either react negatively
- OR Respond the development through formulation of appropriate policies laws and regulations facilitating the adoption of new technologies

Why laws and regulation?

- Regulation is fundamental to governing complex, open and diverse societies and economies.

- Regulatory processes allow policy-makers to balance competing interests

- have been critical to the development of democracy and the modern state.

Current state of affairs?

- We have not responded the realities of network, device and service convergence
- OTTs are always there but no regulatory certainty and clarity
- We have not prepared enough for proliferation of wireless devices –short range and low power
- We have not even allowed the adoption of 4G mobile technologies
- No thought for 5G

Current state of affairs?..

- Technology Neutrality? Agreed by the policy but regulatory barrier still exists
- Scope of the services of the different licenses such as voice/data –ISP vs NSP etc. are blurred
- IP has not been properly understood..

Sources of Regulatory Barrier

- Unavailability of spectrum in a timely manner
- Technology based spectrum assignment
- Services limited by licensing restrictions
- Lack of legal and regulatory framework for newer services and applications
- Third party services and applications are not entertained directly by regulators
- Persistent confusion on the emerging services and applications is discouraging for innovators

Conclusion

- The pace of technological innovation is beyond the reach of many government and regulators in the developing world

- But all countries have the privilege of access not only to information but also to technologies

- Proactive governments and regulators move with technologies and shape their legal and regulatory mechanism in line with market demands

- Government and regulators carry out regulatory impact analysis