Disaster and Emergency management in Nepal

Birendra Nath Gongal, Manager, IT Directorate, Neapla Telecom.
## Country Background

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official name:</td>
<td>Federal Democratic Republic of Nepal</td>
</tr>
<tr>
<td>Other names in use:</td>
<td>Nepal</td>
</tr>
<tr>
<td>Area Total:</td>
<td>147,181 sq. km</td>
</tr>
<tr>
<td>Nationality:</td>
<td>Nepali</td>
</tr>
<tr>
<td>Currency:</td>
<td>Nepalese Rupee (Rs)</td>
</tr>
<tr>
<td>Official languages:</td>
<td>Nepali</td>
</tr>
<tr>
<td>GDP per capita (PPP):</td>
<td>US $ 642</td>
</tr>
<tr>
<td>Major agro products:</td>
<td>Paddy, maize, sugarcane, wheat, barley, millet, potato, tobacco, oil seed</td>
</tr>
<tr>
<td>Major industries:</td>
<td>Agricultural &amp; forestry, manufacturing, mining &amp; quarrying, electrical, vegetable oil, garments, cigarette, woolen carpets, beer</td>
</tr>
</tbody>
</table>

Source: Central Bureau of Statistics, Nepal
Country Background

• Religious tradition
  – Hinduism is practiced a large majority.
  – Buddhism though a minority faith in the country
  – Do not distinguish between Hinduism and Buddhism
Country Background

- 5 Development Regions
- 75 Districts
- 58 Municipalities
- 3915 Village Dev Committee

Map showing regions and districts of Nepal.
Country Background
## Telecom Status

<table>
<thead>
<tr>
<th>Service</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>844,990</td>
</tr>
<tr>
<td>GSM</td>
<td>9,839,334</td>
</tr>
<tr>
<td>CDMA</td>
<td>871,219</td>
</tr>
<tr>
<td>Others (LM, GMPCS)</td>
<td>670,217</td>
</tr>
</tbody>
</table>

**Penetration rate**

- Fixed: 2.96%
- Mobile (GSM & CDMA): 37.47%
- Others (LM, GMPCS): 2.34%

*Source: NTA MIS May 2011*
<table>
<thead>
<tr>
<th>Service</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialup (PSTN +ISDN)</td>
<td>25,569</td>
</tr>
<tr>
<td>Wireless Modem, Ethernet</td>
<td>13,000</td>
</tr>
<tr>
<td>Cable Modem, Cable etc.</td>
<td>32,500</td>
</tr>
<tr>
<td>ADSL</td>
<td>58,763</td>
</tr>
<tr>
<td>GPRS</td>
<td>2,181,153</td>
</tr>
<tr>
<td>CDMA 1X</td>
<td>186,016</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,497,001</strong></td>
</tr>
<tr>
<td><strong>Internet Penetration</strong></td>
<td><strong>8.74%</strong></td>
</tr>
</tbody>
</table>

Source: NTA MIS May 2011
Telephone Penetration Rate

- Fixed
- Mobile
- Others (Limited Mobility, GMPCS etc.)

38.31
2.38
2.96
Governmental Organizations on ICT

- Ministry of Information & Communication (MOIC)
- Ministry of Environment, Science & Technology (MOEST)
- National Planning Commission (NPC)
- High Level Commission for Information Technology (HLCIT)
- Nepal Telecom Authority (NTA)
- National Information Technology Center (NITC)
Disaster

A Disaster is a natural or man-made hazard
Resulting physical damage or destruction, loss of life, or drastic change to the environment
Events such as earthquakes, floods, catastrophic accidents, fires or explosions.

Disaster management:
Pre disaster planning, monitoring
Prediction and early warning
Damage assessment and relief management
Disaster Risk Nepal

- Nepal faces high magnitudes and intensities of a natural hazards such as flood, landslide, earthquake, fire cyclonic winds and hailstorms cloudburst and epidemics.

- 1971-2006 reveals that epidemics takes the largest life, and landslide, flood and fire.

- Nepal falls in a high earthquake intensity belt

- Fire is problem for all rural and urban areas, temperature go as high as 45 deg Celsius.
Disaster Risk of Nepal

1000 people die in Nepal every due to the natural hazard events; about 300- floods and landslides

Poor quality construction of building and infrastructure

Non engineered construction, poor quality control of materials
Disaster mitigation

Minimize the potential risk by developing disaster early warning strategies

Prepare and implement developmental plans to resilience to such disasters,

Mobilize resources including communication and tel-medicinal services

To help in rehabilitation and post-disaster reduction.
Existing legal and institutional systems

The legal framework for disaster management has a long history in Nepal with the Calamity Act 2039 promulgated in 1982.

Central level Disaster Relief Committee
Regional Level Disaster Relied Committee
District Level Disaster Relief Committees
National Commission for Disaster Risk Management (NCDRM)

- NCDRM highest level Institution responsible for
  - Making policies, approving plan and programmes
  - Management of fund and mobilization
  - Prime Minister – head of NCDRM
  - Opposition leader – Deputy Chair
  - Members: Ministers, Chief Army, Chief police departments and two representative from civil society.
Key stakeholders

- Ministry of telecommunication/ICT
- National Telecommunication Regulatory Authority
- Disaster Management Department
- Police
- Army
- Department of Metrology
- Department of Energy and Power Authority
- Immigration and Customs
- Fire Brigade
Disaster Losses in Nepal during 1971-2006 (37 years)

<table>
<thead>
<tr>
<th>S.No</th>
<th>Events</th>
<th>Death</th>
<th>Injury</th>
<th>Peoples Affected</th>
<th>Buildings destroyed</th>
<th>Building damaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earthquake</td>
<td>873</td>
<td>6842</td>
<td>4,539</td>
<td>33,710</td>
<td>63</td>
</tr>
<tr>
<td>2</td>
<td>EPIDEMIC</td>
<td>15,529</td>
<td>37,773</td>
<td>323,896</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Fire</td>
<td>1,081</td>
<td>735</td>
<td>218,128</td>
<td>62,634</td>
<td>2762</td>
</tr>
<tr>
<td>4</td>
<td>FLOOD</td>
<td>2,864</td>
<td>349</td>
<td>3,315,781</td>
<td>70,115</td>
<td>1,041</td>
</tr>
<tr>
<td>5</td>
<td>LANDSLIDE</td>
<td>3,899</td>
<td>1,188</td>
<td>480,069</td>
<td>16,779</td>
<td>1,209</td>
</tr>
<tr>
<td>6</td>
<td>OTHERS</td>
<td>2,385</td>
<td>2,670</td>
<td>360,725</td>
<td>3,917</td>
<td>388</td>
</tr>
</tbody>
</table>
Emergency Telecommunications- EMTEL

- EMTEL- provisioning of telecom services in emergency situation.
- Emergency situation may range from a narrow perspective (illness, traffic accident, outbreak of fire in the home...) to a very broad perspective (earthquakes. Floods....)
- The concept also covers the telecommunication needs of society's dedicated resources for ensuring public safety; including police forces, firefighting units, ambulance...
Telecom networks are essential to support Public Protection and disaster Relief needs in time of disaster or crisis.

Disasters—not selective—damage many forms of telecommunication system
Services can be used in emergencies

- Public communication networks (terrestrial, mobile, satellite networks)
- Private networks (Land Mobile Radio, HF Radio, VSAT, WiMax ..)
- The Internet
- The Amateur Radio Service
- Broadcasting
- Early warning systems (telecentres/ or last mile communications)
Emergencies Telecom. in Neapl

- Different types of telecoms. Services are available.
- VSAT is only the service provided to all the VDC's in Nepal
- VSAT remote terminal and Backhaul
- Remote terminal – 4 line voice and 1 data port
- Backhaul terminal – GSM & CDMA mobile services
VSAT Telephone Service

No any transmission line possible.
Very remote places.
VSAT is only the right solution to provide telephone service.
VSAT starts from 1996 with 8 terminals.
Procured 600 VSAT from STM company
Additional 350 VSAT from TCIL company.
DIFFICULTIES

Transportation
Arrangement of Helicopter
Very difficult Access
Altitude Sickness
Problem faced in Civil Works
Difficulties of finding sand and Water
Possibilities of cement jam
THANK YOU
Q&A