Internet for Disaster Relief and Recovery

Case study from Japan: Post-Disaster Recovery Internet Project

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Watching video for Tsunami at ‘K-Wave’ gymnasium, Kesennuma-city 2011. 3. 30

Medical staff with PDA At Rikuzentakata Daiichi Junior High school

At Rikuzentakata Daiichi junior high school 2011. 5
About:
Post-Disaster Recovery Internet Project

- Private-public partnership Internet volunteer project in order to provide the Internet connectivity/access in suffered area
  Teamed up with satellite communications company, ICT industry, Universities and research institutes
  ▶ National Astronomical Observatory of Japan, Keio University, etc
  ▶ Cisco Systems, IPSTAR, SKY Perfect JSAT, Fusioncom/Rakuten, Intel, etc
  [http://pdrnet.wide.ad.jp/](http://pdrnet.wide.ad.jp/)

- Brings the first-aid-Internet connectivity and ICT basic working kit to the hospitals and the temporary shelters
  Flexible on technologies suitable to the place
  Closely work with the local staff to establish a communication platform to help their current activities
Sites installed

43 sites among 12 municipalities (as of June 11th)
From Start to Convergence of our projects

Governments
Hospitals
Shelter
NGOs

Demand research
Field study and hearing

Coordination
Identify deployment need and site
eg. Local governments and education board

Field installation
Network design
Calculation of number of users and bandwidth
Prioritize Urgency
select Install location

Operation / Maintenance
technical support for users, supporters

Transition to Local team

2 – 3 Months
Internet for Everyone

Available for everyone

- Provide the Internet service for everyone like Governments, medical staff, evacuees, etc.
- Not only installing equipment, but also dispatch engineers as affected area is short-handed

Available for everyone

- **Medical Staffs**
  - Medical records
  - Drug management
  - Information sharing

- **Governments**
  - Refugees information
  - Publish support information
  - Supply management

- **Evacuees**
  - Obtain and publish information
  - Entertainment

- **Others**
  - Volunteer groups, NGOs, etc.

Internet Connectivity provided by our project
Internet connectivity depends on install site

SKY Perfect JSAT
Satellite communication
4Mbps/800Kbps

IPSTAR
Satellite communication
4Mbps/2Mbps

Cisco Systems
3G Router
Cisco 1941
300Kbps ~ 1Mbps
(NTT DoCoMo)

Number of Installed WAN access

<table>
<thead>
<tr>
<th>Wan connection</th>
<th>Types</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satellite</td>
<td>IPSTAR</td>
<td>10</td>
</tr>
<tr>
<td>SKY Perfect JSAT</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>3G (NTT Docomo)</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>FTTH (NTT-Hikari)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>43</td>
</tr>
</tbody>
</table>
Configuration based on demand

Choose Network configuration based on install environment and required bandwidth
WAN communication Type, LAN design

Various WAN access ways
- Satellite
- Mobile (3G)
- FTTH/ADSL
- Long-Reach WiFi

Wired and wireless LAN access for various devices
- Personal computer
- Support Staff and Refugees
- Web, E-mail, Phone, Chat, SNS, etc
- PDA/Smart phone

The internet

Router
1. **Fragmented uncertain information**
   Cost of “Obtaining”, “Gathering” and “reliable” information from and inside suffered area is very high during the recovery and is crucial in making coordinated recovery action.

2. **Internet is a mainstream, like utilities (electricity, gas, water)**
   Legacy Telecom which is good for 1:1 communication, but not in supporting effective information sharing in recovery activities involving multi-stakeholders (e.g. survival info, feed/medical need, etc.)

   Types of device now beyond traditional PC (Smartphone, Tablet, but Game devices)

   Demand of bandwidth is steadily increasing after disaster with time varies of data and scale are increasing
   - From Mail, Chat and Twitter to rich contents like Database, Video
   - Increasing connected device, like Mobile phones, Personal computers, computers on intranets

3. **Open Internet is ideal, but requires coordination with key stakeholders to prioritize on which users to be supported first**
   Open Internet but may require prioritization on which users to be supported first, Greater impact and harder for the developed social infrastructure with the Internet, Government, Healthcare, Schools

4. **Structural approach for the deployment of the Internet shall be prepared as part of the rapid response action (e.g. deployment strategy for equipment & personal, operating model, awareness, on-going technical assistance, how to publish Information must be well considered)**