DISASTER RECOVERY AND BUSINESS CONTINUITY – Post 26/12

Dialog Telekom Limited
1.0 Dialog’s Disaster Response to Tsunami
1.1 The Extent of Damage

The primary cause of damages to the base stations were water entering the power systems and cabins. The main damages were:

<table>
<thead>
<tr>
<th>The Name of the Site</th>
<th>The Extent of Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beruwala South</td>
<td>Loss of BTS Cabins, power system including switch over battery banks</td>
</tr>
<tr>
<td>Hombantota</td>
<td>Total loss of Microwave, power and BTS cabin</td>
</tr>
<tr>
<td>Koggala</td>
<td>Loss of BTS Cabins, power system including switch over battery banks</td>
</tr>
<tr>
<td>Weligama</td>
<td>Loss of BTS Cabins, power system including switch over battery banks</td>
</tr>
<tr>
<td>Kosgoda</td>
<td>Loss of BTS Cabins, power system including switch over battery banks</td>
</tr>
<tr>
<td>Kaluwwella</td>
<td>Loss of BTS Cabins, power system including switch over battery banks</td>
</tr>
</tbody>
</table>
Base Stations that were Affected
1.2 The Reasons for the Network Failure in the Tsunami Affected Areas

- Due to widespread impact of the disaster, Dialog decided not to deploy Blocking in order to maximize availability of communication.

- Disconnection of power supply from the main grid. However, since the base stations were equipped with back up battery banks, Dialog was able to sustain the power supply.

- Tsunami floods washed away the cabins which housed the base station equipment and in some cases damaged the towers.
1.3 Recovery of Network

<table>
<thead>
<tr>
<th></th>
<th>Immediate Aftermath</th>
<th>After 24 Hours</th>
<th>After 48 Hours</th>
<th>After 72 Hours</th>
<th>After 116 Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery of Damaged Base Stations</td>
<td></td>
<td>10%</td>
<td>40%</td>
<td>66%</td>
<td>100%</td>
</tr>
<tr>
<td>Network Congestion</td>
<td>High</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>% of Dialog’s Network in Operation</td>
<td>98.73%</td>
<td>98.86%</td>
<td>99.24%</td>
<td>99.57%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Figure: Restoration Time Line

Dialog was able to recover 66% of damaged BTS within 72 hours. Four days after the disruption Dialog fully restored its affected sites to the pre-disaster levels.
The Steps taken by Dialog to Restore the Service

- Replacing Generators
- Relocating the Sites
- Sharing of base stations with Other operators
1.4 Key Obstacles Faced in Recovery

- Lack of CEB Power for Base Stations

- Access Routes were blocked. This affected
  - the transportation of fuel for the generators at Base stations.
  - sending of engineering teams to restoration work
1.5 Factors Contributed to Speedy Recovery of Dialog’s affected sites

- Dialog’s base stations were equipped with battery banks/ Generators with a capacity to run over 10 hrs. This storage capacity provided sufficient time for refueling and maintenance crews to reach the sites.
- Timely coordination with Security Forces
- Pre-designed Continuity and Disaster Recovery Plans with guidelines for Emergency Team Deployment
- Use of Flexible Technology allowing for re-direction of calls
- Co-operation between Telecom Operators
1.6 Assistance Required from Government

- Provide an efficient and accurate information the event of an emergency. Eg. Establishing an authority to approve and release information on disasters
- Regulatory flexibility to provide disaster relief solutions based alternative technologies to affected areas
  Eg. Provision of VSAT connectivity to Affected areas
- Ensure public utilities like CEB have Disaster Recovery Plans
- Other Assistance
  - Drafting a tactical Communication strategy/procedure among relief workers on disaster site with province and state administration
  - Assistance in fast tracking site acquisition process
  - Less restricted approval process for developing transmission backbone
  - Ensure fair disbursement of radio frequencies
2.0 Possible ways that Dialog could Contribute to National Disaster Management Plan
2.1 Assist in delivering information to general public in emergency situations.

2.2 Provide communication facilities

2.3 Development of new technologies for transmitting emergency information, Monitoring emergencies (Floods, Earthquake monitoring, etc.)

2.4 Provision of Priority Access to Emergency Management Agencies to Dialog Network
2.1 Assist in delivering information to general public in emergency situations.

- Dialog is equipped with the relevant technology Platforms to ensure emergency messages are delivered to a larger population mass.
- Use of GSM and Thuraya Satellite based technology could provide a faster and more efficient ground based information to shorten response times for Emergency Coordinating Teams, through data transfer from ground teams to Emergency bases.
- Use of existing SMS Emergency Hotline (SMS112) to enable users to report emergencies and receive immediate attention via two-way SMS facility.
- Use of GSM Technology to warn uses of possible identified disasters and relay qualified information.
2.2 Provision of communication Facilities

- Provide Help Desk facilities through our Contact Centre Use of Dialog’s state of the art Contact centre to act as a single point of information (as a crisis communications room).
  - This service was provided to the National Council for Economic Development and the Sri Lanka Red Cross Society following the recent disaster.

- Mobilize ad hoc mobile stations to operate as communication and first aid centers
2.3 Development of new technologies for transmitting emergency information and Monitoring emergencies

- At present Dialog carries out extensive research in this area and is willing to participate in any proposed study/research by the government of Sri Lanka.

- The research could cover areas such as monitoring of Floods, Earth Quakes, Water Reservoir protection equipment...etc.
2.4 Provision of Priority Access to Dialog Network to Emergency Management Agencies

Allow subscribers in these agencies to access the Dialog Network on priority basis for emergency calls during periods of wireless network congestion. This could include:

- Executive Leadership and Policy Makers
- Disaster Response / Military Command
- Public Health (Doctors using Dialog network to gain crisis consultations with Colombo hospitals for remote diagnostics), Safety, and Law Enforcement
- Public Services/ Utilities and Public Welfare
Tsunami & Dialog Telekom’s Response

Long Term Technology Initiatives - **Phase 3**
Tsunami & Dialog Telekom’s Response

Long Term Technology Initiatives – Phase 3

- Dialog’s contribution for the long term nation rebuilding process has been strategically motivated, and has built on the company’s strengths in R&D and innovation. The result has been the realization of two pragmatic solutions with high social value.

1. Emergency Early Warning System - made significant progress in developing an early warning system for multi hazards to avoid future disasters of this nature. The system will be piloted in two districts in Sri Lanka at the end of the month and will have the distinction of becoming the first national Disaster warning system in Sri Lanka.

2. Dialog Amity Science Net - Secondly Dialog Telekom has worked in collaboration with the Ministry of Education and the Dialog University of Moratuwa Research laboratory to Develop a Distance Learning facility for Schools affected by the Tsunami. Thereby using ICT to empower educational institutions to deliver classes in remote schools through a resource efficient method of sharing instructors.
1. The Indian Ocean Tsunami served as a catalyst for many nations in the Indian ocean to look at some kind of emergency warning solution operated via a central disaster centre.

2. Nine months on, Sri Lanka still has no reliable emergency early warning system deployed.

3. Dialog Telekom Ltd, as the GSM telecommunications provider and with the largest reach took the initiative to join in the development of a warning system which will be compatible with CAP.

4. Our focus was to develop a system that can be deployed for the benefit of the masses.
Unique Features

Safeguards against false alarms
- Encryption to eliminate Spam SMS
- Inbuilt emergency call back number to verify alert authenticity
- Secure login at command center interface

Reliability
- Multiple alarms, SMS, CB, Remote Siren, light, and radio activation
- Alarm will ring until acknowledged by receiving party
- Status of alert, whether received or not, can be verified at command center

Reach and Speed
- CB provides an option to broadcast to large cross section of the population
- This reach is further supported through warning sent & received in local languages
- SMS based alerts can be sent to selected groups through database at 118 center
- Alerts can be segmented based on geographic area – selective dissemination
- CB and SMS can be deployed in a matter of minutes
The 118 Center located at the Ministry of Public Security Law and Order will approve
The warning and determine to whom the message should be sent. (i.e. the public
Or to selected community leaders etc)

The designated representatives will get the warning via SMS and will be requested for a feedback of the receipt

The masses will receive as a CB message with the alert depending on the persons location

Remote Device will activate Radio, siren and Lights upon receiving a signal

The mass will receive as a CB message with the alert depending on the persons location

Officer in charge of the area

Emergency situation Informants

Internet, Phone Calls, Fax Etc..

Ministry of Public Security, Law and Order

Web based interface for Ministry to trigger the messages via login through the Internet

Interface for Ministry

Mobile Messaging Platform for SMS/CB

SMS/CB

GSM Network

GSM Modem

Generic Subscriber