Highlights of the discussion

<u>New Communication Technologies: Linking Stakeholders in Difficult Communication Environments</u>
2 June 2015

This brown bag is part of a how-to series that the DER Project Communication group regularly conducts for ADB staff.

One intention of the brown bag series is to present innovative communication technologies and approaches developed outside of ADB to Bank colleagues so as to spark discussion on the kinds of communication tools which are or are not relevant for ADB work. For this brown bag, DER invited external resource persons to present a new communication technology and hold a dialogue with ADB project staff on the utility of such tools to ADB-financed activities in post disaster areas.

Speakers:
- Marina Azcarate, Head of Global Marketing, Open Garden
- Jocelyn Saw, Project Coordinator, ADB's Emergency Assistance and Early Recovery for Municipalities Affected by Typhoon Yolanda project

Background:
- Many ADB-financed projects are located in difficult communication environments and are vulnerable to emergencies and disasters

- Under disasters or crises, traditional communication infrastructure may be unavailable, difficult to access or blocked at the exact times when communication is most needed to allow project stakeholders to give and receive critical or even life-saving information
- Given this, what are the characteristics of communication technologies that can best suit emergency and disaster settings? What role should ADB play in helping governments and communities establish access to such communication systems? What kind of communication infrastructure can be integrated in ADB-financed projects to help increase stakeholders' communication-related resilience?

Stakeholder communication needs in emergency and disaster situations
- When emergencies or disasters strike, communication can be as vital as food and shelter but it is also among the infrastructure systems that are easily damaged or rendered unavailable, leaving stakeholders more vulnerable
- In the aftermath of Typhoon Yolanda (Haiyan) in several municipalities in Eastern Visayas, there were no mobile and satellite phone services; local radio (AM/FM) transmitters were damaged; there was no electricity to access TV. CB radios, and later, satellite phone services, were the only means of communication but very few stakeholders had them.
- As a result of the communication black-out:
    - People had no access to crucial, accurate and life-saving information (i.e., the locations of food and shelter, where to be treated for injuries, how to get help, etc.), falling prey to unchecked rumors and false information that sowed panic and fear
    - Local government units, relief agencies and medical personnel had to be physically present to make impact assessments, making coordination difficult and delaying much-needed emergency response

Off-Grid Communication Technology: How FireChat Works

- FireChat:
    - a free mobile phone app that functions as a communication tool for posting messages without the need for cellular service or connection to an internet network
    - can be maximized in situations where connectivity is lacking; communication infrastructure (internet, cellular signals, landlines, satellite networks) is damaged, unavailable or blocked; or in environments where there is network congestion due to a high volume of users
    - creates a "local internet" or "hyperlocal networks" and uses peer-to-peer mesh networking ("daisy chain"), in contrast to a regular centralized network that is dependent on functioning cellular towers
    - takes advantage of mobile phones' built-in Bluetooth and Wi-fi functions to relay data from phone to phone as long as the devices with FireChat apps are within 200 feet (about 70 meters) from each other – a new device called Greenstone increases the range of peer-to-peer mesh networks so that information can be relayed between users at a greater distance
    - unlike Twitter, does not have a character limit
    - thread of messages is uninterrupted, given in real time and completely public (no filter)
    - may disseminate information using the local language provided that mobile gadgets are equipped with mechanisms (i.e., keypads, etc.) to input the language

- Requirements for a mobile phone to use FireChat:
  - Digital phone (IOS / android) must have 3G capacity
  - Bluetooth is on
  - FireChat app has been downloaded
  - Another device with a FireChat app is located within 200 feet (about 70 meters)
  - Does not require that the phone have a SIM card installed nor does it require the phone to have internet connectivity activated

- FireChat has been used in situations where there was congestion in cellular and internet signals due to volume of users; in difficult communication environments where communication infrastructure is blocked or damaged; and during disaster and emergencies. In these cases, FireChat had multiple uses –information dissemination, mobilization of volunteers, briefing of field staff and media; bottom-up information exchange among affected communities.
  - Visit of Pope Francis in Manila (January 2015) – Six million people were on the streets to participate in the activities adding a huge load on the already saturated networks. As a security precaution, the government directed the blocking of cellular signals surrounding the areas of the papal visit. FireChat partnered with media networks, Rappler and GMA, to increase the usage of the app and provide alternative means of communication for the public.
  - Kashmir Valley flooding (September 2014 / April 2015) where more than 500 people in India and Pakistan lost their lives – Communication networks collapsed and people were stranded without access to their families and were unable to receive information about assistance. FireChat was used to issue evacuation plans, provide real-time updates of conditions at a hyper-local level, and provide a means of communication among Kashmiris in affected areas and diasporic members of the Kashmiri community overseas.
  - Typhoon Chedeng (April 2015) – The typhoon that wrought destruction in Micronesia was feared to have the same impact in Northern Philippines. FireChat was used by big media organizations to disseminate local updates about the typhoon. At the same time, affected villages also shared live information about the conditions in their areas.

FireChat is exploring other uses that can strengthen community empowerment and capacity building such as:
- Partnerships with Civil Society Organizations and NGOs
- Enabling mobile payments
- Real-time collection of data from communities
- Large-scale dissemination of information for the health, farming, micro-finance, education sectors

Considerations to increase the communication resiliency of stakeholders

1. ADB is in a position to help government and communities increase their communication resiliency by integrating communication technologies that are suited to prepare and respond to emergencies and disasters

2. To be effective in linking stakeholders in difficult environments, communication technologies must:

   a) Be accessible and user-friendly particularly to vulnerable sections of the population

      While there seems to be an increasing number of cellphone users in the Philippines and in Asia, there are still poor sectors that do not have access to mobile phones, are located in remote villages with no communication infrastructure, or are illiterate. These poor communities are most vulnerable to emergencies and disasters, so communication technologies must not only be inclusive but also need to support systems that are applicable to geographically isolated areas. New communication technologies must also consider the lack of electricity (i.e., for recharging, etc.) in rural and island areas, the lack of resources to maintain equipment (i.e., no money for repair or replacement, etc.) and possibilities that equipment are community-owned or shared.

   b) Anticipate and mitigate communication system failure during emergencies

      Even before emergencies or disasters happen, government planners and development workers have to consider that communication infrastructure is often damaged, blocked or rendered unavailable. Off-the-grid systems may work best, particularly those that incorporate back-up systems and parallel mechanisms. Such measures ensure that a failure of one component of the system should not disable the entire arrangement.

   c) Support accountability and transparency

      Emergencies and disasters bring about conflict and despair among affected communities particularly in the distribution of assistance or prioritization of areas. Tensions can easily escalate and injure more people and possibly result in violence and death. To prevent these, communication technologies must be used to promote transparency through providing clear and accurate information to all stakeholders.

   d) Ensure credibility of source and legitimacy of information

      Misinformation can readily go viral and cause more damage to stakeholders who have already been rendered more vulnerable by emergencies and disasters. While recent technologies encourage crowd-sourcing and the unfiltered exchange of updates, communication technologies must ensure that sources of information are credible and identified, and data exchanged are verified. Communication technologies must also consider that while message threads are unfiltered, free flowing and public, particular and urgent information must reach specific sectors without the burden of going through long threads.

   e) Consider the legal repercussions in centralized environments

Some governments deliberately block communication infrastructure or censor information. While communication technologies that effectively link stakeholders are based on democratic exchange of information, care must be exercised to ensure that those who do use alternative communication technologies are free from legal repercussions.

3. To be effective, communication technologies must respond to the particular communication needs of key stakeholders (i.e., government, non-government responders, affected communities) in the four phases of disaster management:

- Mitigation phase – Planning and implementation of communication strategies (including on and off-grid channels and infrastructure) that will be used in each phase for each stakeholder; Identification of the kind and content of information that will be disseminated for each phase and by whom

- Preparedness phase – Simulation of communication flow using identified strategies, channels and infrastructure; Education and outreach on emergency and disaster preparedness, and early warning systems; For government and responders, identification of survey tools for damage / impact management – and the appropriate communication strategy and channel to ensure continuity and dissemination of key information to coordinate response efforts

- Response phase – Quick communication response activated to ensure flow of accurate information (i.e., food, shelter, health response) to affected communities and coordination among government and emergency responders for rescue and relief

- Recovery phase – Sustained communication channels to restore normalcy and stability (i.e., Coordination for government and responders and rehab services for affected communities); includes assessments of communication strategies and infrastructure

4. The failure to plan for communication resiliency worsens to the impact of emergencies and disaster – more injuries and loss of lives and livelihoods