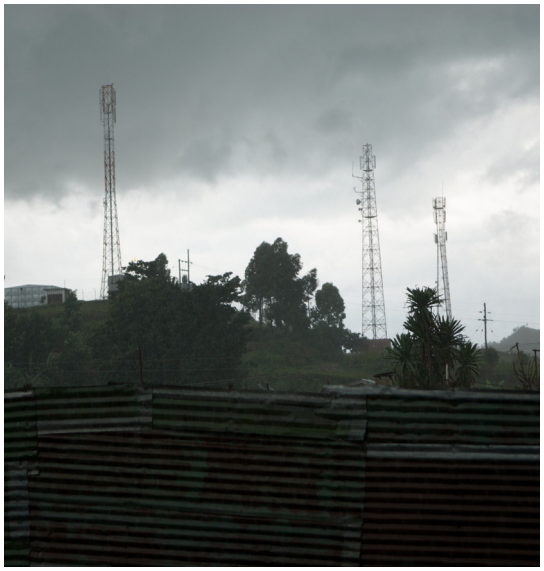
Disaster Response

When you restore the mobile network, you rebuild the human network

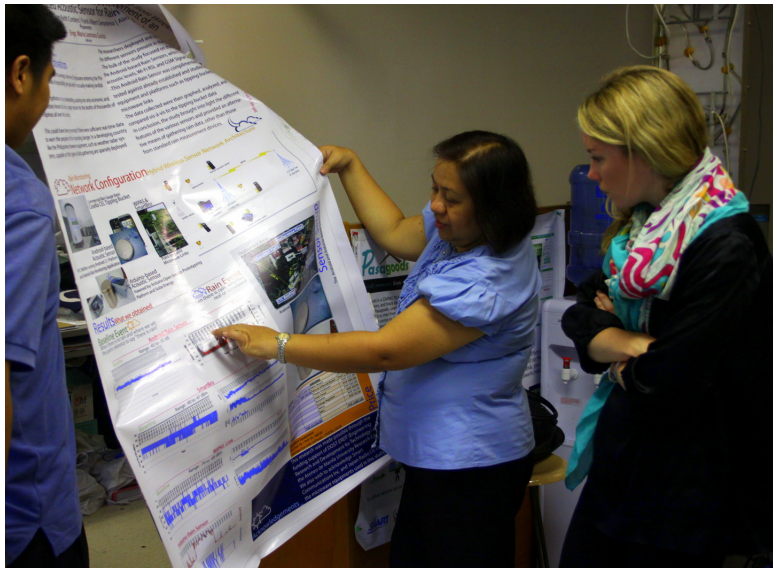
Designing an Effective Disaster Preparedness & Response Programme.

Lessons and Best Practices for the Mobile Industry from Smart Communications Inc.



Objectives

The purpose of this case study is to highlight the steps taken by Smart PLC. to develop their disaster response programme. Smart has engaged in disaster mitigation, preparedness and relief activities to meet the needs of its subscribers and their communities that are affected by recurring natural disasters across the Philippines. This paper illuminates the core principles and approach guiding Smart's work in this space, and outlines the decisions, organisational structure and partnerships that have been developed to support their programme. It is hoped that the lessons captured in this study will serve as guidance for other members of the mobile industry seeking to enhance their internal capacity and external partnerships to respond to natural disasters. It will also highlight the fundamental role of, and opportunity for, mobile network operators to contribute to the restoration of both their networks and communities.



Executive Summary

The Philippines is one of the most disaster-prone countries in the world. Increasingly, mobile networks, and mobile operators are playing a critical role in facilitating emergency communications, early warning information, and supporting response agencies and disaster-affected communities. Within this context, Smart Communications Inc. has developed its Disaster Preparedness and Response Programme. Smarts activities encompass early warning and decision support tools for government agencies and communities, community and employee training for disaster-risk reduction, an extensive response plan including the provision of free communications for affected people, and partnerships with Government agencies, academia and public sector organisations. Internally, Smart has developed a comprehensive strategy to support its work in this space, including investing in the technical resilience of the network, and linking disaster mitigation and service restoration activities across its business units. The success of the programme is due in part to the following:

- Strong Senior-level internal leadership and employee engagement in the programme
- Integration of disaster-preparedness and response objectives across business units
- Development of a dedicated team focused on managing a disaster response programme
- A focus on maximising core competencies, and leveraging strong and dependable partnerships to broaden activities
- Proactive engagement with Government agencies in advance of disasters
- A community-based focus that responds to the needs of disaster-prone communities

The pages below outline lessons learned, best practices and recommendations for other members of the mobile industry that have been drawn from interviews and fieldwork conducted in the Philippines, and a comprehensive analysis of Smarts Disaster Preparedness and Response Programme.

Context: Philippines Disaster Landscape and Mobile market

The confluence of unique geological and geographical features in the Philippines makes it one of the most disaster-prone places on earth. The archipelago that makes up the Philippines is situated on the circum-pacific seismic belt, and its exposure on the Western Pacific Ocean rim makes it vulnerable to severe flooding, typhoons, volcanos, earthquakes, droughts and storms.[1] In line with global trends, the vulnerability of the Philippines to disasters is increasing due to a combination of urbanisation, demographic, climactic and environmental factors. It is estimated that 60% of the landmass is exposed to natural disasters and 74% of Filipinos live in vulnerable areas.[2] Approximately a quarter of the population live below the poverty line, and individuals are disproportionately impacted by natural disasters. Someone in the Philippines is up to 17 times more likely to be killed by a natural disaster than in Japan, despite Japan having a higher likelihood and frequency of natural disasters.[3]

SMART and the mobile market in the Philippines

Smart Communications Inc. is the leading wireless provider in the Philippines, providing 50.9 million subscribers access to the GSM network.[4] Smart began operations as a commercial mobile services provider in December 1993 following the liberalisation of the Philippines telecommunications market. Smart has deployed industry leading data services such as Smart Money and rolled out the first LTE network in the country. Smart also has 1.63 million subscribers to its broadband service. Smart's vision closely reflects its belief that connectivity presents limitless possibilities for individuals and communities, and that as a communications provider, they have an embedded social responsibility to contribute to the communities in which they operate.

At the end of 2011, there were over 94.5million mobile connections in the Philippines with GSMA coverage reaching 99% of the population and an 84% coverage area.[5] The pre-eminent players in the market are Smart and Globe Telecommunications.[6]

The Philippines is one of the most active social media markets in the world; it currently has the highest proportional number of Facebook users and ranks 8th in Twitter popularity.[7] Literacy rates are particularly high in the Philippines, and mobile users maximise this by sending and receiving approximately 400 SMS messages per user per month, one of the highest rates in the world.[8]

1 World Bank GFDRR Country Note Philippines http://gfdrr.org/ctrydrmnotes/Philippines.pdf
2 Ibid.
3 Concept of urban risk divide/ FIND SOURCE
4 Number accurate as of June 2012, SMART Communications Inc.
5 As of 2009 Source: http://mobiledevelopmentintelligence.com/countries/PHL
6 For more information on the Philippine mobile market, please visit Mobile Development Intelligence (link)
7 http://asiancorrespondent.com/54475/philippines-named-the-social-networking-capital-of-the-world-indonesia-malaysia-amongst-top-10/
8 National Statistical Coordination Board, Philippineshttp://www.nscb.gov.ph/headlines/StatsSpeak/081406_rav_cja_ict.asp

Smart's Disaster Preparedness and Response Programme

The company had its first experience in disaster preparedness and emergency response in 1998, when a plane crash in an isolated area of the Philippines required Smart engineers to set up communications capabilities and initiate free calling stations for the family of victims and search and rescue teams. The Philippines experiences frequent and recurring natural disasters (approximately 20 per year) of varying severity, which has given Smart opportunities to test and adapt their disaster preparedness and emergency response activities, incorporating lessons learned, and investing in strategies that have proven effective. Tropical Storm Ondoy (called Ketsana outside the Philippines) which hit in 2009 was of particular significance for Smart, and marked a period of renewed commitment and investment in their programme. Over 500,000 people were evacuated from Metro Manila and 25 affected provinces during the storm, leaving 986,825 families affected,, and a death toll estimated at least 464 people.[9] One of those killed during the storm was Smart co-founder David T. Fernando. Unsurprisingly, his death left a lasting impact on Smart and its leadership, and reinforced the company's commitment to the two primary pillars of its programme. The first focuses on capacity building and partnership development, emphasising disaster preparedness advocacy and risk reduction. The second strives to provide critical communications (including early warning systems) to affected communities and response agencies, in addition to supporting relief activities directly.

Smarts Emergency Repose Plan was tested recently during Tropical Storm Haiku which hit the Philippines on August 6th, 2012. The storm caused mass flooding, affecting 850,000 people and displacing more than 250,000 around Metro Manila. This storm followed Typhoon Saola which hit in late July. Smart activated its disaster response plan and immediately initiated free call stations called "*Libreng Tawag*," charging facilities and internet provision supported by SMART staff deployed to the communities. The also provided:

- A free top-up facility for those with a zero balance: *SOS provides customers with 3 SMS messages and airtime
- On-line advisory board alerting customers and emergency responders to any network interruptions, and the resulting restoration activities
- SMART person finder to assist customers in locating loved ones
- SMART employees dispatched to work with local government authorities to distribute essential aid in flood-affected areas
- Opening of an SMS channel to receive donations for the Red Cross
- Regular updates and guidance on their social media channels (via Facebook and Twitter: @Smartcares)

SMART's network remained strong with the exception of some isolated 3G problems and occasional power outages, however voice and text function remained strong. Smart provided real-time updates and swift deployment of network engineers to address any technical and network management challenge (primarily a 6 hour outage in one region).

The swift and coordinated response and the resilience of the network was comprehensive and successful- enabling Smart's network to be used for critical communications to support its subscribers when they most needed it. The section below will outline the core principles that Smart has relied on in the design and direction of its programme. It will highlight the key activities identified, and Smart's internal and external structures which support their programme.

Key Considerations for Programme Design:

- What kind of natural hazards and disasters occur most frequently in your market, and in neighbouring markets? What is the existing capacity at the local and national level to respond?
- How do you see your role and the evolution of your programme? Communication support is critical, but are there opportunities for community-based engagement or partnerships that should be prioritised from the out-set?
- What do your subscribers need and want most before and during disaster situations?
- What areas will provide the best return on your investment?
- How can you design a dependable programme that still allows for adaptability and flexibility in times of crisis?

Guiding Principles:

Community-based disaster risk management (CBDRM)

Smart views community-based disaster risk management as a key pillar of its programme. As part of their Emergency Response Plan, Smarts objectives include "*minimising the adverse effects of disasters on the company and communities, and to save lives and properties and to ensure business continuity.*" By building resilience and preparedness within the community, not only is local capacity strengthened, but a better business environment is created as activities directly benefit Smart's customers and business partners, and facilitates a better understanding of what resources and relationships are required to leverage their ability to respond, and better support the activities of others.

By working at the community level, Smart has also been able to prioritise areas for its Emergency Response Activities which they establish using criteria including "*most affected, most vulnerable and least served*." Some of these areas include Leyte, Samar, Sosogon and Cagayan. Smart also relies heavily on on-the-ground assessment to inform its response activities, and therefore needs to develop relationships with local government units and community leaders who can communicate assessed needs. The PLDT Smart Foundation and the Smart Disaster Response Team validate this information and use it to develop their working targets and set evaluation criteria for their preparedness and response activities.

Without strong engagement at the community level, and leveraging the human network that has been developed under the Smart brand (including local airtime sellers and vendors, subscribers, and Smart employees), it would not be possible for Smart to solicit comprehensive, rapid assessments for decision support.

The Importance of Engaging with Communities

During the research period for this study, a field visit took the author to a Barangay (the smallest administrative unit in the Philippines) that had been badly affected by the floods in August 2012. The Communications Captain of the Barangay Tumana in Markina City, described how they were using Smart's Infoboard service to monitor weather systems and determine when to initiate an evacuation. However in order to communicate with the neighbourhood leaders charged with spreading evacuation information amongst the community, the Captain was inputting 60 phone numbers into his mobile separately to send an SMS to each of the community leaders to notify them about evacuation orders. The Smart representative who had previously worked with the Barangay through Project Noah's Ark was able to identify an opportunity to implement Smarts Infoboard Service, in order to enable more efficient, streamlined communication of vital information between the Barangay leadership and the community.

Employee Training and Volunteerism

Smart has supported several employee training sessions delivered by the Red Cross on disaster management and first aid for all of its field units and key personnel (thus far they have trained approximately 400 people) in addition to the general employee emergency training. The Human Resources team in partnership with the Asset Protection team regularly recruit and train volunteers with the aim of fostering a culture of preparedness among employees. There are both dedicated teams of trained people in addition to individuals who volunteer and are trained on an ad-hoc basis.

Maximising Core Competency

"It is our obligation to subscribers to keep our network up and running and to maintain our subscribers' connections especially in circumstances when they might need communication the most. As before, our engineers were briefed and prepared to be always on the alert and to respond to any connectivity problem that should arise." [10] – Ramon Isberto, Head of Public Affairs, Smart Communications Inc.

Communication is Smarts core business, and Senior Management within the company recognises the social utility they provide and the inherent public service component of their networks to connect people in crisis. Smart reports that its engineers are often the first on the scene in a disaster. Since the inception of their Disaster Response programme they have sought to train their engineers on the ground to get to know the communities they are working in. There is a concerted effort within Smart to support activities where it has direct technical and communication expertise, and leverage assets of other partners where it can play a supporting, rather than lead role.

Respecting "high and low" technology

Smart has demonstrated a strong understanding of the appropriateness of different kinds of technology for different scenarios, and that in some circumstances, existing or more "*traditional solutions*" may be preferred or more suitable to the local environment and context. For example, where signal is less reliable in more isolated regions of the Philippines, SMART has deployed warning bells in communities across 300 provinces to alert inhabitants of the need to evacuate. In most cases, Smart will not enter communities with a technology solution until it understands the needs and capacity. They recognise the reality that in some instances, "*low tech solutions*" like a painted flood meter post, will be relied upon as much as an SMS alert as decision support for an evacuation.

In line with the above priorities and principles, Smart has chosen to focus on the following activities are core components of its programme.

10 Ramon Isberto, quoted in PhilStar "During typhoons, your cell phone can be your lifeline" August 19th 2012 http://www.philstar.com/Article.aspx?articleId=839399&publicationSubCategoryId=449

Libreng Tawag (free call centres)

Smart sets up of free call stations called "*Libreng Tawag*" in evacuation centers, with access to charging facilities and internet provision, with deployment of SMART staff to support. Smart typically allocates 1,000 free calls per day in an emergency for a length of between two and three minutes, but have the capacity to provide as many as 3,000 both locally and internationally.

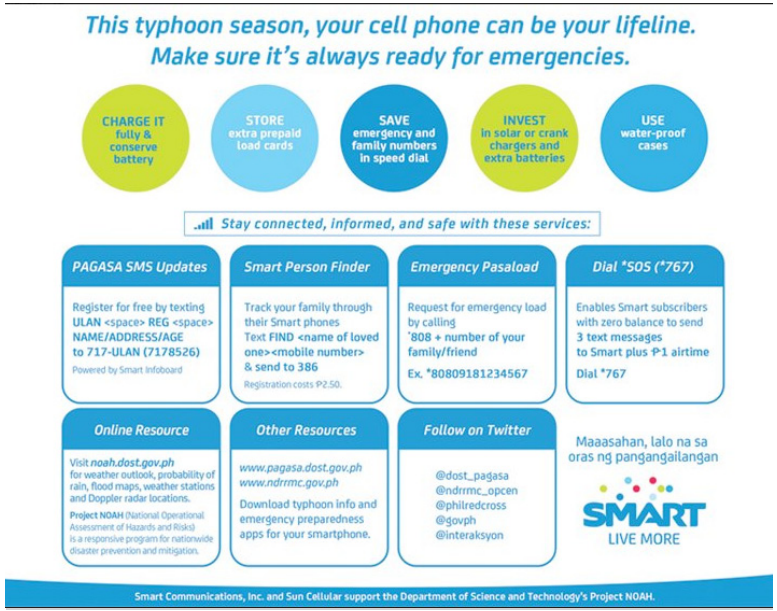
Project Noah's Ark

The Noah's Ark Project is implemented in partnership with the Corporate Network for Disaster Response, of which Smart is key member (see further in partnership section). The project works with flood-prone communities throughout the country to improve local capacity within government units and at-risk populations to enhance preparedness, with an emphasis on community early warning and evacuation drills. The goal of the programme is to achieve zero casualties during future disasters.[11] In Cagayan De Oro City, approximately 500 casualties or missing people were reported following flooding in 2011. Between March and August 2012, Smart worked with its partner, the Corporate Network for Disaster Reponse (CNDR) and local volunteers to develop early warning systems and emergency communication protocols and drills. During the flooding in August 2012, the training proved successful, and zero casualties had been reported in that community.

Cellphone Charging and Guidance tips

Smart issues information advisories for customers ahead of disasters reminding them to fully charge their phones, and adjust settings to maximise batter life. They also provide a bulletin reminding subscribers to sign up for weather alerts, their person finder service and store critical numbers for emergency services.

11 Noah's Ark Project Briefing Note, CNDR



A free top-up facility for those with a zero balance: *SOS provides customers with 3 SMS messages and airtimee

Infoboard: Smart has partnered with weather bureau PAGASA to bring weather updates through SMS to receive free updates. Smart's Infoboard solution is a tool offered to government officials, key government and municipal agencies and subscribers. Infoboard enables government officials and disaster risk reduction and management council to quickly send and receive official bulletins and situation reports via SMS, including the dissemination of early warning messages and evacuation orders.

Project NOAH

Project NOAH, or Nationwide Operational Assessment of Hazards (NOAH), is a responsive disaster prevention and mitigation program developed by the government in partnership with Smart and other private companies, using current disaster science research and development projects and the latest technologies. It was launched in July. The Project NOAH website, and recently launched complementary app, provides disaster mitigating weather information that is used for decision support by government agencies, communities and Smart itself. The mobile app uses location-based information to provide relevant weather information to users based on where they are.

Key Lessons

- Local community input and engagement is key to developing strong response capacity internally and externally. Regular communication with vulnerable and affected communities and responders ensures that appropriate technical solutions are identified, and allows for rapid trouble-shooting where problems exist.
- Working directly with communities improves core business outcomes. Brand recognition and loyalty are enhanced if an operator is seen to be engaged in supporting community resilience. Working "*at field level*" provides both commercial and social intelligence that can be leveraged to design more targeted services for customers.
- Shifting the emphases to preparedness is both more cost-effective and impactful. Smart used to prioritise provision of relief goods after disasters had struck, but realised it was more expensive and less effective for affected communities than prevention and mitigation.
- A well-articulated and documented Disaster Response Plan which outlines what different business units are responsible for, and steps to initiate different parts of the plan (ie. free call stations) is key to enhancing clarity within an operator, and between operators and their partners, thus supporting coordination and predictability in times of crisis.

Internal Organisational Structure

Key Considerations for Internal Organisational Structure:

- How vulnerable is your market to natural disasters? How many full-time employees (if any) should be dedicated to disaster preparedness and response- what are their responsibilities, and how will they be supported across the business?
- Which unit should take the lead? Disaster response cuts across many different areas of the business- where should the core decision-making and management sit?
- What is required to develop a strong corporate culture of disaster preparedness amongst employees and externally?
- How can key organisation figures be harnessed to champion disaster response?

One of the reasons the leadership at Smart believes their disaster preparedness and emergency response activities have been so successful is due to the prioritisation and inclusion of related objectives across its business units. Strong organisational structure, supported by strong senior leadership is a keystone to Smart's achievements. Although primary responsibilities for administering the programme lie within the Public Affairs and Corporate Social Responsibility Departments, there is significant involvement of other parts of the company, and an appropriate headcount of staff dedicated to the Disaster Response and Emergency Preparedness Programme full-time, in addition to employees, and employee volunteers who have clear roles and responsibilities specific to disaster situations.

Public Affairs, Community Outreach and Corporate Social Responsibility

Core responsibilities for Smart's Disaster Preparedness and Response Programme lies within Smart's Corporate Social Responsibility Department. The head of the programme is supported by a senior community partnerships manager and the broader Public Affairs department. This ensures that whatever activities the CSR team decides to implement are effectively communicated to the public. Importantly, Smart has dedicated, full time staff working on developing and managing their programme so that lessons are captured, partnerships are maintained on a regular basis, and a preparedness agenda can be driven both within the company, and within Smart's subscriber communities.

Asset Protection:

This department is responsible for the protection of employees and their immediate families. Smart has a list of key decision makers that are prioritised by rescue efforts so that they are able to perform critical functions. Smart is one of the only private companies in the Philippines to develop its own capacity to rescue employees. During monsoon Habagat, Asset Protection rescued over 200 Smart employees from flooded areas. Smart has determined that ensuring their employees and their families are well supported in emergencies is critical to business continuity. For example, during 2011, Tropical storm Washi struck Mindano (an area typically by-passed by storms) triggered flash floods which killed an estimated 430 people and displaced thousands. During the disaster, Smart noticed that because employees in the affected area had not been adequately prepared, they did not return to work because of the need to ensure the safety of their families. Since then, Smart has ramped up preparedness training for staff. The Human Resources team has also created a service in partnership with the technology team that sends a text blast to employees in the event of a crisis, and asks them to reply with "*safe*" and their employee identification number. Smart believes that this allows them to account for 80% of their employees within an hour of an emergency.

Smart has the advantage of having access to the assets of other companies that are owned by its parent company, PDLT. This means that in addition to strong relationships with the military for logistical and transport support, Smart is able to utilise helicopters, planes, and transport trucks owned by other companies if required. Tropical storm Ondoy in 2009 represented a turning point for Smart – the Chairman approved the purchase of resources to aid in the rescue of employees and Smart now has a cache of 20 rescue boats and other equipment that it can deploy.

Technical and Business Continuity

Business continuity during disasters is fundamental for Smart, both from a commercial perspective, and because of the value they place on serving communities as a public utility. The business continuity team works closely with Asset Protection to ensure that all employees are accounted for, and that internal and external partners are aware of key points of contact within Smart. The Philippines is preparing for the possibility of a severe earthquake, and is currently developing contingency plans to identify and protect critical sites, and outline the minimum business continuity objectives of each team within Smart. When a disaster strikes, Smart sets up a Command Centre where key personnel convene to determine which personnel are required onsite, and what decisions to take based on the damage needs and capacity assessments carried out by the field teams. However there is still an emphasis on flexibility and adaptability through decentralised decision making at the regional level. Regular testing of the network and business continuity management plans are conducted on a six-monthly basis, with the aim of ensuring coordination and synchronisation among business units. Most recently, Smart joined the Asian Private Sector Partnership on Risk Reduction, an initiative supported by the United Nations Office for Disaster Risk Reduction, in which business leaders adopt Business Continuity Management (BCM) as a first step towards protecting their businesses during disasters.

Technical Resilience:

"None of the uses of the network matter if the network isn't ready and able to cope with calamities."

Debbie Hu, Department Head, Regional Operations, Technical Services Division

Smart has set minimum network restoration targets at 20% coverage for a given location within 2 hours, and 4 hours for achieving maximum restoration. During Ondoy, some of Smart's infrastructure and switches were badly affected, impacting services. Smart was able to restore 75% of affected base stations within two days of the storm, and immediately deployed its network engineers who were pre-positioned to respond. Although rapidly responded to, the network team vowed that they would improve preparedness and resilience, and have prioritised the latter as a key deliverable within the network technical team. They have since implemented Project Elevation (a CAPEX funded initiative) to raise their generators to higher ground in order to prevent power outages and damage to the switches. The success of Project Elevation was witnessed during the August 2009 flooding when the network remained largely resilient and operational.

Tropical Storm Ondoy highlighted the importance of back-up power as a core component of technically preparing the network to withstand disasters. During the storm, Smart's electricity provider cut back on power provisions, and some sites including transmission centres were without power for 24 hours. Since then, Smart has reconfigured sites to add additional, longer life back up batteries, and ensured that transmission equipment is hooked up to a redundant port in the rectifier, so that even if the BTS is affected, the transmission can remain resilient and umbrella coverage can be sustained. Smart now works towards ensuring that each site is equipped with 5 days of emergency fuel for back up power.

When Smart has early warning of an impending disaster, they activate NETWATCH which alerts and dispatches teams of contractors, engineers and equipment to strategic areas to minimise response time. Through the WIND TOWER PROJET, Smart is investing in sturdier, self-supporting towers in typhoon pathways that are able to withstand winds up of to 250 km/hr. MEOWs (multi-element on wheels) are also deployed to sites as required, and extra capacity has been built into Smart's new networks to cope with congestion problems. Because of the reality of disaster vulnerability in the Philippines, resilience to natural disasters is a central component of network design, and improving preparation and management is a key priority for the Network Operations team.

Corporate Communications and Social Media:

Smart has prioritised its social media channels as essential modes for communication both internally and with its subscribers during disasters. The communications team reported seeing a significant surge in visitors to its Facebook page, where it provides news on prevention and preparedness tips which are integrated with its regular public affairs communication strategy. Smart has taken the view that even if there are problems with the network, Facebook will still be running and it can be a great vehicle for providing real time information about how the network is being impacted, what relief activities are underway, as well as offering advice to subscribers- for example where they can access free calling stations. For more predictable natural disasters such as typhoons, Smart can have up to 3 day's of early warning to prepare. They are able to use this lead time to send out advisories to all of their employees, send local advisories and MMS weather advisories.

Smart also maintains a closed Facebook group for its staff with emergency contacts for rescue and relief and coordination between employees in addition to the regular email and SMS advisories that are circulated. Employee Facebook accounts that act as a work platform interfacing with the public to provide information to a wide audience are also maximised. Smart also uses Twitter to send and receive real-time information from its followers and regularly updates its network advisory page with information about coverage and outages. From Smart's perspective, one of the most beneficial aspects of leveraging social media is that the information is often picked up by different news and media outlets and is verified and disseminated to a wider audience with an enhanced degree of credibility. They have found that in recent disasters where their preparedness tips have been posted on social media channels, they have then been taken up and re-distributed by mainstream media. Smart has also found that its subscribers are more active on their supported social media platforms during disasters because they see their contributions and posts as being useful.

In addition to social media, Smart still relies on traditional media to create comprehensive information campaigns. They view the media as a "*partner-at large*" and are pragmatic about the limits of the mobile network to provide complete information in disaster scenarios.- A 160 character SMS can only provide a certain amount of information and context about a given scenario. The leadership at Smart is cautious about mitigating the potential for misinformation and panic to spread amongst the population in circumstances where information disseminated over the mobile network may not be sufficient. An example of this is a Tsunami Alert 2 which was issued in a region in August 2012. The community that received the early alert did not know how severe a level 2 tsunami alert was, and panic and rumours spread amongst the population. Smart views the context around early warnings and alerts as essential, and therefore values the contribution of other media to provide a more complete picture of disaster situations and risks.

Key Lessons:

- **Organisational commitment:** A clear vision of how an operator sees its role and responsibilities in disaster situations is essential. Support and leadership by Senior Management can drive a culture of preparedness and engagement in this space, and ensure that preparedness is prioritised and that decisions can be made swiftly in times of crisis.
- **Dedicated Resources:** in markets where disasters occurs frequently, it is critical to have functional roles dedicated to disaster preparedness and response and have clear objectives for supporting core functions identified across other business units.
- **Clear and tested plans:** One of the challenges of disaster preparedness and response is that it tends to be reactionary, and prioritised only after an event has occurred. Regular review of plans, frequent engagement with partners and trials of plan is crucial to success in actual disaster scenarios.
- **Balancing central leadership with flexible and decentralised decision making:** autonomy to make critical decisions in the midst of disaster situations is important to ensure that activities and actions are appropriate to circumstances.
- **Communicate with customers –** rather than sidestep around problems with the network in emergency situations, it is better to proactively inform subscribers of any problems, and what is being done to remedy them and what customers can expect over a variety of mediums.
- **Social media** can be used to enhance and elaborate on information sent over the mobile network, and can also be a means to provide subscribers with preparedness tips and information about emergency services- for example, Smart lists is libreg taweng free call centre locations on its Facebook and twitter.
- **Social media** can provide an effective channel for both internal organisation and external communication.

Partnership Development

Key considerations:

- What Government agencies are best placed to work with mobile operators on disaster preparedness and response - is there a framework for public private partnerships defined by the National Disaster RR Management Council?
- Where can mobile operators leverage the assets and capabilities of other agencies and organisations for disaster response, and what is required to develop agreements in advance?
- What can mobile operators offer partners in terms of communication support, infrastructure and human resources?
- How should a mobile operator internally structure itself to ensure productive, coordinated and mutually beneficial partnerships?

Key Partners:

Government

"Our cellular network has withstood some of the country's worst disasters and this gives us the ability to support the government's critical disaster preparedness programs and the need of people to stay connected during times of calamities," Ramon Isberto, Smart Communciations Inc.

The Government of the Philippines has created structures that enable it to develop public private partnerships at various levels, and convene regular meetings in advance of the tropical storm season to bring key parties together. Smart engineers participate in a technical working group, and, where overall response approaches and responsibilities are discussed, representatives from the Public Affairs Department and Regulatory team will attend. There is a growing movement towards nationally rooted response, rather than relying on external and international governments and agencies. One of the key developments to enhancing disaster preparedness and response in the Philippines was the passing of both the 6 Republic Act 10121 and the Philippine Disaster Risk Reduction and Management Act of 2010. The latter allows up to 70% of calamity funds to be released in advance of a disasters. This has driven the government to engage with the private sector in advance more readily. Previously, there had been a feeling that telecommunications companies were disproportionately looked to for response support; however there has been increasing involvement from other sectors. The National Disaster Committee in the Philippines uses a cluster approach to coordinate their disaster response activities, and Smart sits within the emergency telecom cluster to provide communications support. Communications protocols are still being defined, and at the time of writing, there was a push by the NDRRMC to institute blanket cell broadcast for early warnings to the public. The team at Smart was concerned that cell broadcast was not the most appropriate solution for information dissemination in the Philippines because of its limited ability to provide context and complete information about impending threats. There is a strong hierarchy of cascading information from different levels of government into the population in the Philippines and, for the time being, a decision has been taken to implement the Infoboard service rather than cell broadcast. However, there is a memorandum of agreement between the government and telcos that mandates the operators to send out messages designated by the NDRRMC through shortcode 1456. However it has not yet been utilised.

Smart has developed relationships with the military (both the Navy and the Air Force) for "*angel deliveries*" so that in emergency situations, should equipment need to be transported, there is space allocated for Smart.

"Establishing best practices as a community, and sharing credit is important. We're convinced that the service is saving a lot of people. Making people resilient enough so they don't have to worry about being victimised by the next disaster is important. The combination of science, technology and cooperation means that communities can have faith knowing someone is watching out for them."

Raymund Liboro, Director, Science and Technology Information Institute, Department of Science and Technology (DoST)

PAGASA

PAGASA, or the Philippine Atmospheric, Geophysical and Astronomical Services Administration, is an agency that sits under the auspices of the Department for Science with the responsibility for issuing weather alerts and natural disaster warnings. PAGASA has signed a Memorandum of Cooperation with two mobile operators in the Philippines to collaborate on Project Noah- an initiative that will co-locate 600 rain gauges to monitor flood levels at 18 vulnerable river basin sites across the country.

This initiative builds on the success of an earlier MOU signed between Smart and PAGASA that saw the co-location of 63 automatic rain gauges on its cell sites in 2011. According to PAGASA, the partnership with Smart ensures that their monitoring equipment is better protected, and they will use Smart's network to transmit critical weather data for analysis and to inform the national flood warning system. From Smart's perspective, the co-location agreement helps to position BTS sites as more than a commercial and taxable asset, highlighting the role of the network as critical infrastructure that can be leveraged to help cope with and warn of hazards. The project also feeds into Smart's Infoboard service, and draws on data from The Philippine Institute of Volcanology and Seismology (PHILVOLCS) to ensure that early warnings and weather alerts come from a credible, verifiable single source. Within these partnerships, Smart has prioritised

1. Real communications provision
2. Supporting communications protocols
3. Supporting information distribution for the community that are distributed via the Government.

Philippine Bureau for Social Progress (PBSP)

The Chairman of Smart/PDLT acts as Chair for PBSP, which works with companies and international donors on implementing CSR projects. Most recently, Smart and PBSP cooperated on a project in Southern Leyte to strengthen disaster preparedness by SMS after a series of landslides swept away villages in the region. The project focuses on using Smart's Infoboard service for improving community education and preparedness, creating multi-hazard contingency planning, and rolling out early warning and response systems based on SMS. Smart provides Infoboard and 30,000 SMS messages for free on a monthly basis to allow the provincial disaster management council and other government agencies to send alerts when necessary, and to provide preparedness tips to the local community. The project is likely to be replicated by the World Food Programme and World Bank in other disaster-prone regions.

The Corporate Network for Disaster Response (CNDR)

CNDR is a network of businesses and foundations that work with local communities and the private sector to improve capacity to prepare and respond to natural disasters. Smart works with CNDR on Project Noah's Ark on Smarts involvement spans both project partnership and a seat on the Board of CNDR. There is strong knowledge sharing between these organisations and CNDR sees itself acting as a conduit for information and resource sharing between different private sector and public sector bodies. Smart benefits from participating in CNDR because the network provides training, advice on coordinating and leveraging assets of different members in disaster scenarios, and providing a platform for cooperation between Smart and other ecosystem players.

Academia:

Smart works with a network of schools and universities, including the Ateneo de Manila University on research and innovation around weather monitoring and early warning systems that can be supported by mobile technology. Access to wireless broadband and data has been essential for the data gathering required to predict and monitor intense rains to inform early warning systems. Smart also works with the developer community, sponsoring "*hackathons*" and app development competitions. A recent winner of the former created the Project Noah mobile app for android which will extend the capability to share critical weather information on both web and mobile devices.

Key Lessons:

Developing strong partnerships may be best approached by starting small and developing trust and a working relationship outside of crisis situations to enhance longevity and predictability in the engagement. An explicit governance structure, or an MOU or NDA may help foster trust. Smart looks at developing 3-5 year partnership agreements to support this.

- Focus on maximising core competencies, rather than trying to do it all. Seek partners who have complementary skills and resources. Trust in the ability and expertise of your partner(s) and ensure that you know their capacity and assets as well as your own.
- Working with government agencies and meteorological agencies is critical - however these agencies may not necessarily understand the full breadth of technology (and its limitations). Regular engagement and clear points-of-contact are critical to strong partnership development. It may also be preferable to work directly with local or smaller government agencies to enhance flexibility and efficiency.
- Clarity of responsibility: ensure that each party knows what its role is before, during and after a disaster to prevent duplication and confusion. A combination of technical and communications experts is important to ensure that any information conveyed to the public through a partnership is accurate, credible and clear.
- Take advantage of opportunities to drive the agenda: developing partnerships in advance of disasters is preferable; however there is often a window of momentum immediately after a disaster which can be leveraged for creating new strategies and relationships.

Conclusion:

This case study presents the preparedness and response activities taken by Smart and provides an analysis of their experiences in dealing with natural disasters. Just as mobile markets are distinct, every natural disaster is different and presents a unique set of challenges. However, prioritising preparedness and having tested plans, partnerships and protocols can make a significant difference to the success of an operator's response.

The context of the country, or affected area, will always play a primary role in helping an operator determine the most appropriate kind of support. For example, in the case of the Philippines, Smart is aware of the high uptake of social media. It therefore uses it in advance of (and during) disasters to communicate both essential and potentially life-saving information to its customers. Additionally, it uses the same channels to provide updates on the status of its network, and real time updates on repair works to address communication failures. Although social media may not be the most effective means for the dissemination of this kind of information in all markets, the lesson that operators have an important role in informing customers both of service challenges and remedies, as well as emergency information, is widely applicable.

Despite market-specific opportunities and constraints, one constant across countries is that affected people themselves are at the frontline of disaster response. This not only highlights the critical role that reliable mobile networks play in facilitating communication amongst them, but also the importance of prioritising community based disaster risk reduction as part of Disaster Response Programme.

Equally, a mobile operator designing a Disaster Response Programme should ensure that there is strong leadership within the organisation, and that there is a sound internal organisational structure to support programmatic activities. In areas that are particularly vulnerable to disasters, it is optimal for an operator to have a dedicated team of qualified individuals who can implement the programme. It is also critical that an operator have in place a tested mechanism for ensuring employee safety in the event of a disaster, as this is best practice not only from an employee relations standpoint, but also from a business continuity perspective.

A well thought-out Disaster Response Programme does not require that a mobile operator involve itself in every aspect of relief. Focusing on maximising core competency in the provision of reliable lifesaving communications is, however, critical. Creating solid, predictable partnerships with Government agencies, civil society and humanitarian organisations can drastically improve clarity and coordination in the immediate aftermath of a crisis, leading to a more effective and efficient response.

Mobile communications are increasingly acknowledged as a humanitarian need. The role of operators and the resilience of their networks become paramount. Through their disaster preparedness and response activities, Kabalikat sa Kaligtasan, Smart Communications has demonstrated the contribution of the mobile industry in supporting effective, life-saving support to subscribers, and response agencies. It also demonstrates the pressing need for the industry to share experiences between operators, and among the wider preparedness and response community.

Disaster Response

When you restore the mobile network,
you rebuild the human network

GSMA Head Office
Seventh Floor, 5 New Street Square, New Fetter Lane, London EC4A 3BF UK
Tel: +44 (0)207 356 0600
www.gsma.com
disasterresponse@gsm.org