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GRANT PROJECT LESSONS AND OUTCOMES

Nokia Saving Lives

GRANT PROJECT DATES

June 2018 to January 2020

Nokia Saving Lives (NSL) is a corporate non-profit initiative that provides innovative communications technology and technical assistance in disaster response. The solution consists of drones, a portable data centre and a mobile broadband network which enables applications such as live video streaming, mapping and analytics for emergency response teams.

NSL received a GSMA grant to work with the Philippine Red Cross (PRC) and Smart Communications (Smart), a local mobile network operator (MNO) in the Philippines, to establish and pilot the NSL technical solution as part of PRC's local emergency response portfolio.

The intention of the NSL project was that in the event of a disaster the system could be deployed by a fully trained NSL volunteer group to support the PRC emergency response teams. NSL enables first responders to collect data through LTE connected unmanned aerial vehicles (UAVs) with real-time applications including video streaming, gas sensing, mapping and search and rescue analytics. This broad set of information gives the NSL team the situational awareness needed to quickly determine and provide the best possible response.

Smart also provided a portable mobile broadband network to ensure reliable and secure communication between the rescues team members, drones and other equipment, which can be particularly useful when Mobile Networks might not be working.

KEY STATS

IMPACT

10,170

INDIVIDUALS INDIRECTLY IMPACTED BY NSL DURING THE PILOT

ACTIVITY

THE SOLUTION WAS DEPLOYED

3X

DURING THE GRANT PERIOD

EMPLOYMENT

25+

NOKIA EMPLOYEES WITH SPECIAL NSL EXPERTISE TRAINED AS PRC VOLUNTEERS

OUTCOME

NSL helped rescuers provide a faster and more informed response to disasters

The NSL solution was deployed in live use-cases three times during the grant period, demonstrating that the solution can improve the speed and situational awareness of emergency response teams. These deployments, as well as live demonstrations, showed that assessing multiple sites from one remote hub reduced the time taken to collect and analyse the preliminary data needed to plan, and the broader response effort.

Following the Porac earthquake in 2019 NSL technology was used by the PRC to help evaluate the surrounding buildings and infrastructure to assess the overall situation. The UAV's cameras provided a unique point of view and enabled the PRC team to identify damage and detect potential hazards not visible from the ground. The live video could also be used to locate casualties and prioritise where emergency assistance would be needed most. The drones were also able to map damage around a collapsed supermarket area that would be useful for the eventual planning and rebuilding of the site.

OUTCOME

NSL can provide autonomous connectivity in a crisis

In a crisis mobile networks are vital to facilitating access to information, coordinating assistance and providing connectivity for both affected communities and digital humanitarian services. Smart used Nokia wireless technology to establish reliable mobile broadband connectivity at emergency response locations. In addition to the aerial insights and data provided by the drones this provided a secure network and critical communication channel for the solution-trained rescue teams and Nokia volunteers.

To test their portable network the NSL team performed a trial flight in Sagnay, Camarines Sur, a province which had recently been placed in a state of emergency following massive landslides and flooding. The technology successfully enabled reliable on site communication and allowed the team to assess remote and inaccessible areas without the need for any external network coverage or infrastructure.

LESSON

Identifying and engaging the right local partners can significantly improve the design, delivery and impact of a mobile-enabled innovation

NSL chose to partner with PRC and Smart as they recognised how beneficial each partner's unique offering would be when developing and implementing their system. By leveraging each organisation's local knowledge, subject matter expertise, technical skills as well as existing infrastructure and networks they were able to optimise the design, delivery and overall impact of their solution.

Philippine Red Cross

By partnering with an existing humanitarian actor and leveraging their local expertise NSL were able to make sure that their solution would meet specific situational needs. The partnership also helped ensure that the innovative technology could be used by, and eventually integrated into, an established recovery network.

Smart Communications

By partnering with Smart from the start of the project NSL were able to involve the local MNO in all relevant design and implementation discussions. This helped ensure that all planned activities could be successfully supported by Smart's existing infrastructure and networks.

"This drone and network solution can help us gather accurate and up-to-date data on the status of lifelines in disaster situations. This in turn can provide us with information vital in the implementation of rescue and assistance to the affected areas."

Elizabeth Zavalla, Secretary General of the Philippine Red Cross

"Disaster preparedness is one of our priority advocacies. At Smart, we provide continuous network service, as well as multi-platform technology and training, as we work with the government and other partners. We believe our communications support for drones will help enhance disaster response and, ultimately, save lives."

Ramon R. Isberto, Head of Public Affairs at Smart

LESSON

Ongoing availability of experts is essential for implementing a technical solution

NSL is an innovative technology solution that relies as much on its equipment as the technical expertise needed to operate it. Emergency support services in the Philippines are mostly voluntary which can be difficult to manage when specific ongoing experience is required.

Nokia employees with specific NSL technical expertise were trained as PRC volunteers and undertook regular exercises to ensure they were able to deploy the technology in emergency situations. Nokia management also agreed additional annual leave for staff volunteers to ensure they were available when needed.

LESSON

Navigating local policies and regulations is essential when trialling early-stage innovations

The regulatory environment can play a key role in supporting or hindering innovative programming so it is important to understand local policies and regulations before planning pilot implementation. The NSL team faced a number of obstacles that needed to be overcome before the project could be launched including cumbersome import and export process for hardware, a constantly shifting regulatory environment for the day-to-day use of drones, as well as the need for specific government authorisation for the use of spectrum by drones.

Although piloting in the Philippines proved difficult it taught the NSL team valuable lessons that may be useful when adapting and deploying the solution in other similarly challenging markets.

Nokia Saving Lives: The Future

Following successful completion of the grant project the PRC incorporated Nokia Saving Lives into their go-to toolkit for demanding search and rescue activities for an initial period of 12 months. Unfortunately, due to unrelated business decisions, Nokia no longer have the same R&D presence in the Philippines, meaning that the solution is no longer operational there.

Nokia have however incorporated the solution into their commercial private wireless offerings for clients undertaking demanding search and rescue activities. The technology underpinning the NSL solution is now being used around the world, in disaster resilience contexts as part of the Sendai City Tsunami Warning System in Japan, Fire Departments in Belgium as well as in infrastructure, utilities and public safety projects such as the New York Power Authority.

"This project underlines our commitment to use Nokia technology for good in collaboration with our partners and existing ecosystems. Furthermore, we have proven, that private wireless and UAV technology in collaboration with first responders can improve the efficiency and ease efforts in the field, when every second counts. Whenever there is a tiny chance of mitigating risks for people or saving lives, every engineering effort is worth it"

Thomas Eder, Head of Embedded Wireless Solutions, Nokia

DATA SOURCES

- **Nokia Saving Lives project reporting**
- **GSMA grant visits**