Data Collection in Emergency Relief: The Spanish Red Cross Case Study

According to UNHCR, there were 65.6 million displaced people at the end of 2016[1]. This figure includes refugees and internally displaced people due to man-made or natural disasters. Luckily, there are organizations like The Spanish Red Cross (SpRC) at the forefront of emergency relief to bring solace to the affected. SpRC is a non-governmental organization founded in 1864 to care for the vulnerable, safeguarding life and relieving human suffering across the World.

Organizations working in emergency relief, such as SpRC, rely on technology tools to help them identify where and what the needs are and collect critical data to inform the response. Data collection often happens in challenging environments with limited infrastructure or internet connectivity.

To combat these challenges, more organizations have been looking to open source solutions. A prominent example being Open Data Kit (ODK), a free and open-source set of tools which help organizations author, field, and manage mobile data collection solutions. ODK allows users to collect and visualize information offline without the need of an online server through tools such as briefcase or a virtual machine installed on a laptop.

The Spanish Red Cross deployed Open Data Kit (ODK) to collect data on their sanitation response in Kalikasthan, Nepal after the earthquake; map out water distribution points in Haiti in the aftermath of Hurricane Matthew; and establish a health registration system during the European migration crisis in Greece, among other places.

ODK has helped several organizations collect valuable data to inform such lifesaving and time sensitive interventions. In the recent refugee crisis in Europe, for example, several migrants had no known medical records. Tracking and treating diseases is crucial to ensure the health of refugees and communities around them.

“ODK helped me collect data about our patients, common diseases, treatment, [and] vaccines,” said one official working with the SpRC in Greece.

“I used ODK to collect answers from 400 respondents for an end line survey linked to the recovery of populations affected by Typhoon Haiyan in the Philippines. The survey focused on shelter/habitability and livelihoods,” said another SpRC staff working in the Philippines.

While electronic data collection is a better alternative to paper-based collection, working in emergency relief environments provides an additional challenge as poor communication infrastructure and internet connection is often a reality. By using ODK, SpRC found a preferential alternative to data collection in difficult environments.

[1] UNHCR, Global Trends, Forced Displacement in 2016, published 2017

“With the data we collect and analyze, we are improving decision-making and providing better accountability to beneficiaries, donors and [the] public in general” said an ODK user based in Spain.

CHALLENGES

- Sometimes, it is very difficult to correct possible mistakes (for example if you select a drug by mistake, you cannot go back and delete it, or when you select the option "others" and you write something, what you wrote does not appear in the Dashboard. But it still appears on the .csv file that you can download from the server.
- It is not possible to add questions to the form and some situations can require it.
- Data visualization is difficult with Aggregate: graphics cannot be saved as images and the select multiple answers does not visualize the information in an aggregated way.
- Users that can access data in one Aggregate’s instance, can access the data of all forms in that instance. Data access management is sometimes a challenge if you work with many different users.
- Data cleaning or data scrubbing is not possible to perform in Aggregate.
- We need to better understand how the new European Data Protection Law, applicable since 2018, will affect data collection and storage. The type of data that can be collected might be limited.

RECOMMENDATIONS

- It is important to have a good feedback mechanism between the staff collecting the data and those aggregating information, to ensure data being collected is useful and productive.
- Installation and its management use as a server is OK when someone in the team has some IT knowledge, but it becomes so difficult if there is not an IT-interested person around. An integrated platform would be desirable.
- Online server-based installation is still complex, while offline seems to be the most needed one according to the reality in the field (as many struggle with poor or no internet connection). I would recommend simple set-up procedures for both.
- For any new user, I would strongly recommend proper orientation on the overall functioning, while orienting end-users thoroughly and allowing a testing day before launching an actual survey (non-technical).
- Depending on the amount of data collected, the generation of visualizations through CSV files can be slow, for this reason we work with Visual Basic Applications to create reports, Excel to create graphics and pivot tables among others, Google Earth and GIS programs such as QGIS for geolocation, and Business intelligence tools such as Pentaho in order to improve the decision making and reporting in real time.
- For projects with a big amount of data collected, procedures requesting access have been created and different Aggregate instances were created by sectors, in order to avoid access from delegates to sectors that they didn’t belong to. For smaller projects or trainings, specific instances were created for those purposes. And only people that will manage the data can access them.
- Data cleaning or data scrubbing is either made with Excel files in small projects or by MySQL database management in big projects.
- The non-technical challenges are often addressed by awareness, training, institutional support and demonstrating the advantages and results that can be obtained using these new technologies, including improving accountability, quicker decision making, and providing faster responses to detected needs.

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