



CASE STUDY

Water Monitoring

This customer story focuses on NestBuilders International (NBI), a multiservice international development consulting firm that provides expert advice and services to governments, development partners (INGOs/NGOs) and private sector organizations across Sierra Leone.

Problem

GUMA VALLEY WATER CORPORATION

For our first assignment using Fulcrum, we were contracted by the World Bank and Guma Valley Water Corporation (GVWC) - the Government owned utility responsible for providing clean water to the inhabitants of Freetown, Sierra Leone.

The overall objective of this assignment was to support GVWC in a data collection exercise of existing customers connected to the water network. GVWC is Sierra Leone's largest provider of water. However the company is in a critical state. Pressing issues facing GVWC include: inability to supply adequate water to meet demand, an old and inadequate distribution system, and insufficient funding.

When considering the inadequacy of funds to support improvements in service provision, funding issues can partially be attributed to poor billing and revenue collection. A major obstacle in the way of GVWC billing and revenue collection is proper customer data and records management.

The current billing system used by the GVWC is very outdated. Existing customer data is not reliable or complete; there are inconsistencies and erroneous data in the database, and even basic information such as the



name, address and telephone number of a GVWC customer is incorrect or missing. A very small proportion of customers in the database that are actively billed monthly pay regularly. Additionally, with the booming urban population growth in Freetown, there are many illegal connections which are not currently in the database.

Therefore, the overall objective of this assignment was to support GVWC in a data collection exercise of existing customers connected to the water network. The data that we needed to collect was relatively simple: customer name, address, contact number and home ownership status, along with details on the individual that pays the water bill. Additionally, photographs of the property frontage and ID cards were captured, alongside the GPS location of the property. This up-to-date, completed data for existing, paying customers will then be populated into a new billing system for GVWC.

Searching for a Solution

Before using Fulcrum to collect data, our fieldwork activities were generally conducted using paper surveys. Following this, the coded data would be manually entered into a database for analysis. We have also conducted one survey on maternal health using SurveyCTO, on mobile phones in very rural areas of the country.

How they use Fulcrum

Tool creation: We found that it was very simple to create a survey in Fulcrum. Rather than struggling with creating and formatting a Microsoft Word copy of a survey, single- and multiple-choice questions could easily be created online. We have also found the visibility rules (skip logic) very helpful, as enumerator error in collection can be mitigated.

Instant access to data: For previous data collection methods, our supervising team would not be able to access the collected data until field activities were completed and every paper-copy survey had been transcribed into a database. This was both a lengthy and inefficient process. By using Fulcrum, newly collected data can be instantly accessed for quality check. This provides scope for enumerator error to be eliminated as fault identified can immediately be reported and rectified. As a result, our data contains fewer errors. We also spend less time cleaning a database once it has been created, as incoming data is continually monitored.

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In Fulcrum, you can view data by location, on a map. This is a significant advantage working in less developed regions where mapping of areas is dated and inaccurate.

It's easy to track data collector's daily performance: On a similar theme, as data can be instantly accessed and is automatically collected with date and time of completion, it is easier for us to assess each enumerator's work ethic and progress daily. We can ensure that each member of the team is equally completing their quota of work, while GPS coverage also allows our supervising staff to assess the reach of our work every day.

Flexible survey forms: Throughout the research process, we generally find that questions have to be adapted or added. Using the previous system of paper surveys, adaptation to the tool would require us to re-print potentially thousands of copies of surveys. However, to change a tool in Fulcrum is an incredibly easy task — you can add or adapt questions very quickly. These changes will then register onto the devices immediately.

Increased range of data collected: Collecting both GPS readings and photographic data would have previously been time-consuming and difficult to capture during data collection activities prior to our use of Fulcrum. We have collected GPS readings for a variety of projects using GPS handheld devices; however, this involved a lengthy process of matching each paper survey to its GPS coordinates. Fulcrum does this automatically. You can even view the data on a map by location using Fulcrum's web tools. This is a significant advantage working in less developed regions where mapping of areas is outdated and inaccurate. Our current survey also requires us to capture a number of photographs (including the front of a customer's property and water meter). Again, the capture and collation of this data is very easy with Fulcrum.

Results & Benefits

Reduced time of data collection: Due to the ease of tool-creation and alteration, time spent entering data is reduced and we have more opportunity to continually refine our data. We have found that Fulcrum has increased the speed of completing data collection projects.

Back-up of data: Executing data collection projects across Sierra Leone is sometimes very difficult! Reaching rural areas is particularly trying, especially if we have to transport a vast amount of surveys on paper. Sometimes our field staff have had to walk miles to reach rural villages. The use of handheld devices increases our mobility. We have also found it comforting to know that the data is backed up to the Fulcrum cloud server as soon as our devices connect to the internet.

WHY FULCRUM?

Cost: After investing initially in handheld devices, the running costs of a project are reduced — compared to collecting data using paper surveys (which requires printing, manual labor for data entry, and increased hours of supervision work during the cleaning of a new database). We also do not need to purchase GPS-reading devices or cameras to capture additional data.

A NEW SKILL SET FOR DATA COLLECTORS

In Sierra Leone, there are very few jobs available for the continually growing skilled workforce. Sadly, as our consultancy firm is project-based, we are unable to employ our entire register of data collectors full-time. The provision of a new skill-set, including the collection of data using handheld devices and familiarly with key data collection software packages such as Fulcrum, will boost our staff's employability. We also found Fulcrum to be very user-friendly. Even our staff that do not own smart phones/have never used a computer could easily operate the software.

CONSTANT SUPPORT

We also felt that it was very important to mention the great support from Fulcrum's customer service team! This project has also been a learning curve for our team, as we adapt our operations to a new form of data collection. We have felt supported throughout this process: The Fulcrum team have answered any questions (whether valid or not!) very quickly and provided expert advice to us, ensuring that this exercise has been a success!



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