The PULA app: a customer acquisition and tracking tool for vacuum tanker businesses

Practice Note | November 2017

Service providers involved in faecal sludge management are held back by a lack of current data on their customer base, operating standards and levels of service. This Practice Note introduces PULA, an innovative mobile app now being developed to bridge the data gap.

Citywide FSM service provision: a logistical challenge

The majority of urban households across the developing world are not connected to a sewerage network, relying instead on concrete pit latrines or septic tanks to collect their faecal waste. The provision of citywide faecal sludge management (FSM) – which refers to the collection, transportation, treatment, and finally the safe reuse or disposal of faecal waste – is resource-intensive and logistically challenging. FSM services are typically provided by private vacuum tank operators, who may or may not be formally licensed by the municipality to deliver such services; while municipal authorities often lack the funding and the staff to monitor and coordinate the sector. This leads to situations in which the FSM services on offer are neither safe nor effective, causing water and soil to become polluted and aiding the spread of diseases such as cholera, dysentery and typhoid. These issues are particularly pronounced in low-income urban areas.

Using mobile technology to bridge the data gap

In WSUP's experience, one key barrier to citywide FSM service provision is lack of data. This means a lack of up-to-date information about the areas of the city being serviced by FSM businesses; about the target customer base for these businesses, and the extent to which businesses are reaching low-income households; and about operating standards (the extent to which businesses are providing a safely managed service). Without this data, authorities are left in the dark about the state of sanitation service provision in their city, undermining their ability to plan, implement and evaluate FSM interventions.
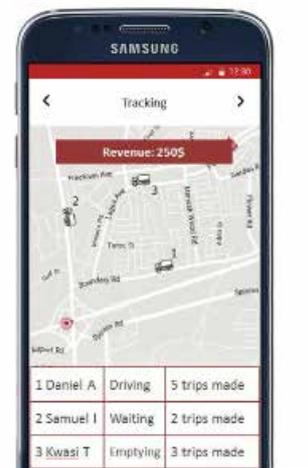

Image: Screenshot of 'Tracking' function of PULA app

A mobile app has the potential to respond effectively to these challenges, by facilitating real-time, accurate data collection. This in turn will give municipal authorities a clear picture of sanitation in their city; and support the professionalisation of vacuum tanker businesses, by giving drivers the means to collect detailed information about their customer base and jobs completed.

PULA: the design process

WSUP and project partners BoP and UX are in the process of developing the app through an iterative human-centred design process, with the aim of ensuring app design and functionality respond to genuine user requirements. Initial, intensive 'Design Sprints' have been conducted in Ghana and Kenya to develop early prototypes and gather feedback through interviews and workshops with target users, including vacuum tanker business owners and water and sewerage utilities.

The aim is to develop an app which can be customised to the local context, enabling vacuum tanker owners, drivers and municipal sanitation authorities to choose from a menu of features. Potential features for inclusion in the app are described on the next page.

PULA: user benefits

Key features of the PULA app will respond to the requirements of target users, who can be categorised in three main groups: vacuum tanker businesses; municipal sanitation authorities and regulators; and sector-focused organisations (including unions, assemblies, NGOs, and waste treatment facility operators). Vacuum tanker businesses are the primary group, as the active users who interact with the app daily. Municipalities and sector-focused organisations are indirect users who will make use of the data collected by the app and subsequent analysis.

The core functions of the app are to are expected to include enhanced customer acquisition and operational tracking. PULA is still in development, with multiple additional features being tested as the software continues to be refined (Table 1).

Key feature: enhanced customer acquisition

Many vacuum tanker businesses experience fluctuations in service demand, notably more so in the rainy season. There is typically very little active customer acquisition (ACA) – drivers and operators tend not to call customers, instead waiting to be called – and no pre-emptive emptying of septic tanks to prevent them becoming full.

PULA will enable drivers to maintain an up-to-date database of client details, which can be used to reach out to potential customers to offer their services at times of low demand. Drivers will be able to send out mass text messages to customers, with the option to sort by location and the date their pit or septic tank was last emptied.

Key feature: operational tracking

Vacuum tanker businesses can be held back by lack of oversight of driver activity on the ground, with some owners resorting to constant phone calls to the driver to ensure work is progressing as planned.

PULA will enable ongoing tracking of vehicle location, the number of trips made and revenue generated. This feature will have benefits for all parties: drivers will have proof of slow business days; owners will be positioned to view progress against key performance metrics at one glance; while municipalities could use the data to help identify illegal disposal points, and to assess the impact of interventions.
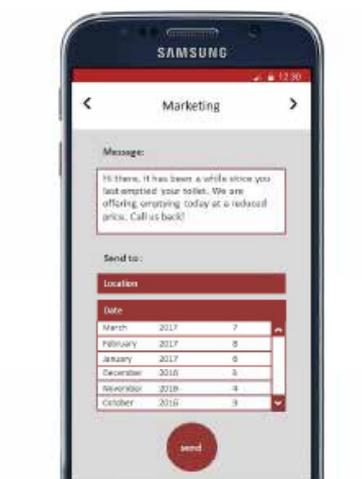

Image: Screenshot of 'Customer acquisition' function of PULA app

Table 1: Optional designed features of the PULA app

Feature	User benefits
Daily/monthly calendar	Reminders for prearrranged emptying; reminders to collect outstanding customer payments; improved short- and long-term business planning
Financials	Monthly overview of trips made and revenue generated; financial data can be exported to preferred format (e.g. Excel); enhanced financial data available to municipality
Truck maintenance	Reminders to have regular maintenance; keep track of wear and tear to keep trucks from breaking down (e.g. mileage since previous check-up)
Driving instructions	GPS enables drivers to avoid traffic and serve more customers
Disposal verification	Legal disposal through GPS tracking and verification

Next steps: towards a Minimum Viable Product (MVP)

User feedback on the PULA prototype developed in Ghana and Kenya has been positive: operators recognise the potential of the app to streamline operations and increase revenues, while authorities have expressed interest in leveraging the data to better understand citywide FSM operations and to plan interventions. The confidence shown in the product, combined with further funding from Bill & Melinda Gates Foundation and VIA Water, means that the prototype will be developed into a minimum viable product (MVP). A pilot period in Zambia and Mozambique will result in real-time feedback detailing how the MVP works on the ground and what aspects require further improvement, with the MVP expected to be available for public download by mid-2018.