

PREPAID METERING

Background

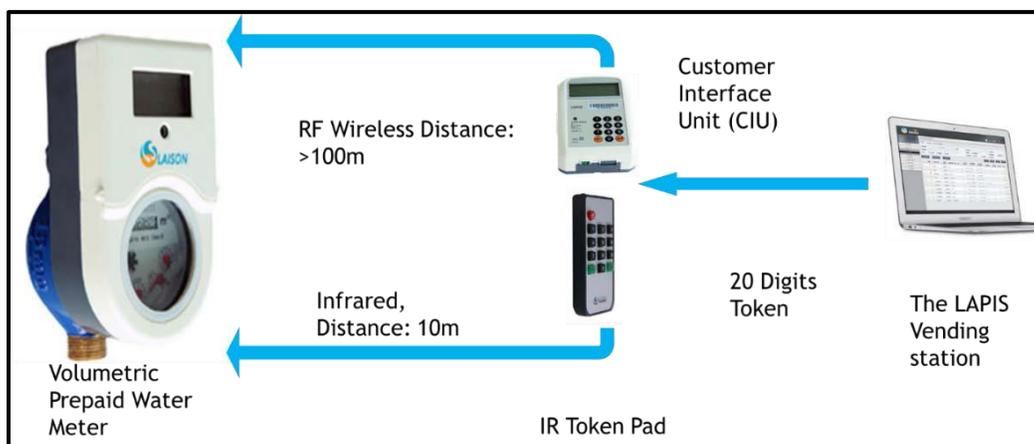
Water For People is working to ensure sustainable access to safe water and sanitation for every community, school and clinic forever, through market based solutions in Uganda. Water For People-Uganda is focusing its water efforts in its Everyone Forever district of Kamwenge, where Water For People is exploring the use of market-based water and sanitation solutions to promote sustainable water and sanitation services. To manage water services, Water For People-Uganda is piloting the use of private operators to manage water supply systems. Under this model, users pay water tariffs as they consume to water sellers who are managed by a private operator.

Problem

The key to sustainably managing water supply and sanitation systems is the ability of private operators to efficiently collect tariffs from consumers. This becomes even more difficult when consumers are accessing water from private connections at their homes, since they can access water without paying first. Overall collection efficiency among the piped water systems constructed in Biguli Sub-county is between 70-80%. The majority of the defaulters have been found to be public institutions (schools) that on many occasions use water beyond their ability to pay for it, and never pay for water consumed. Water For People introduced prepaid metering to help consumers plan ahead and pay for a set amount of water, which Water For People believes will decrease private operator operational costs and increase collection efficiencies.

Hardware Solution

Water For People selected the LAISON Split STS Pre-Paid Water Meter System, which consists of two parts, the Volumetric Prepaid Water Meter and a separate CIU with RF Wireless Communication.





Basic functions of the system are:

- Real-time clock
- Meter recharge using 20-digit token
- Overdraft function for emergency water
- Low credit or insufficient water warning
- Monthly consumption data

The system has a security and anti-tamper system so that if magnetic interference occurs or when a meter's cover is illegally opened, the meter valve closes.

Cost breakdown, inclusive of 18% VAT, is as follows:

Prepaid Water Meter, with one Customer Interface (LXSZ-15, R80, Class B, Multi Jet STS AMI Meter)	126 USD
Infrared Pad - IRPAD	7 USD
Plastic Water Meter Box for DN15 Water meters	10 USD
LAPIS STS Prepaid Management Software with LAPI (One Off)	4,095 USD

Implementation

Water For People purchased twenty prepaid water meters in September 2016 through Davis and Shirliff, and installed them on two piped water supply systems in Biguli Sub-county, Kamwenge District. They were distributed among different categories of users as follows:

- Three commercial users
- Six domestic users
- Eleven institutional users

Eight meters were installed on private connections that previously existed, where customers were paying for water after they consumed it, while twelve were installed on new private connections. One user moved after their meter was installed, and has not yet re-connected it at their new location.

Field Findings

- Planning: All users indicated that the prepaid meter makes it easier to plan water expenses
- Demand: Half the users indicated that they still use the same amount of water that they used to. Five of the users indicated that using the prepaid meter led to a reduction in the amount of water they consumed. For customers that previously

had water debts, they are now consuming less since they are also paying off previous debts.

- Recommendations: Eighteen of the users would recommend the prepaid meter to other users as it reduces the debt burden and helps in planning. In general, customers that previously had private connections find that the prepaid meter is more accurate than their previous system of meter reading and payment based on amounts consumed.
- Payment: All users pre-pay for water consumed, but do so in two different ways. Customers can either pay using mobile money, or can purchase tokens from their private operator.

Challenges

- Some of the users, who are not currently paying using mobile money, need to walk long distances to their water office to purchase water tokens. This is a long and time-consuming process.
- Users have also shared that the price per cubic unit should be reduced, but this is beyond the scope of prepaid meters.
- Users have shared that having only one key to access the meter box is risky, in case they lose this key.

Lessons Learned

- Prepaid meters do reduce volumes of water consumed, however, this is better, because this way, people are only consuming what they can pay for, instead of the private operator essentially providing water for free.
- Prepaid meters reduce private operator operational costs for customers that are hard to reach, as recharging of meter and exchange of money and information can be done via mobile SMS and mobile money, instead of the private operator traveling to collect tariffs from users.
- Prepaid meters have increased collection efficiency, especially in public institutions that were previously the biggest defaulters, and now collections are at 100%.
- Prepaid meters facilitate planning for water usage at all levels by allowing customers to purchase large volumes of water during the harvest seasons when they have enough cash flow in preparation for other seasons when cash is low.

water for people

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