2. Ensuring a clean water supply for all through mobile technology



Globally, 844 million people lack even a basic drinking water service, while 2.1 billion lack access to safely managed water (i.e. drinking water that is available on premises, when needed and free of faecal and locally relevant chemical contaminants).¹⁴ Through a variety of applications, such as mobile payments for water services, remote monitoring and operation of communal and household water points, as well as better interactions with customer service providers,

Pay-as-you-go water is picking up as mobile operators get more involved

Using mobile payments saves consumers time and money by providing a secure channel to pay for water at a fair and set price. For service providers, mobile payments enable regular revenue collection, reduce administrative costs (usually by eliminating cash management costs) and human error associated with traditional payment methods, and eliminate the risks of handling and keeping cash safe until it can be deposited in a bank.

There is increasing evidence that payments for water services are a promising use case for mobile money adoption and help to improve payment collection rates for both centralised and decentralised utilities. CityTaps, a GSMA M4D Utilities Innovation Fund grantee, has developed a smart water meter that



mobile solutions are helping to improve the delivery and maintenance of water services.

Since 2013, the GSMA M4D Utilities Innovation Fund has awarded 14 grants to trial several business models in mobile-enabled water delivery. The following are three key trends we have observed through our support to water organisations over the last five years.

allows subscribers to pay water via mobile money as they consume it (PAYG). In its pilot, CityTaps found that 72 per cent of users opened mobile money accounts for the first time after using its services. This promising solution is garnering interest from mobile operators and water utilities alike. Another Innovation Fund recipient operating in Africa, the start-up eWATERpay,¹⁵ developed a digital PAYG water solution for communal water points that achieved a 100 per cent payment collection rate.

Although the slower adoption of mobile money outside East Africa and low digital literacy are two of the most pressing challenges in scaling this model, the growing involvement of mobile operators in PAYG water is positive development. Case study 2

Mobile money usage with PAYG water systems: Grundfos kiosks in Kenya

Grundfos, a Danish water pump manufacturer, in partnership with World Vision, local communities and mobile operator Safaricom, has installed 32 self-service water kiosks, called Lifelink systems, in areas of Kenya where there is no water infrastructure to serve homes and businesses. The kiosk is an automated water distribution point integrated with a mobile money payment facility (Safaricom's M-Pesa) and real-time GSM monitoring of water dispensed and payments made.

The GSMA M4D Utilities programme recently conducted a field survey of seven Grundfos sites in Kenya and found that:

- In six of the seven locations surveyed, mobile money was the only mode of payment being used to purchase water at Grundfos sites.
- While mobile money usage had previously been limited to receiving and withdrawing money and buying airtime, users are now using the pay bill function for shopping and to pay school fees. In fact, Safaricom's data suggests that **35 per cent of all Kenyan** Grundfos customers used the pay bill function for the first time when using Lifelink ATMs, a sign of advanced mobile money use.

"Paying via mobile money is more convenient since you don't get to carry around cash. When you deposit money in your phone, it also limits your chances of misuse as compared to having it in cash." – LifeLink user, Kenya



Monitoring mobile-enabled water points demands a strong business case

Today a variety of mobile-enabled use cases are supporting the exchange of valuable real-time data to monitor and deliver water more efficiently, from the functionality of water delivery points to water consumption patterns, leaks, broken meters and regular or on-demand user feedback.

Water points can be monitored in the following ways:

 Manual reporting to service providers by water service attendants or end users through mobile services (voice, SMS, apps): GSMA M4D Utilities Innovation Fund grantee, Safe Water Network (SWN),¹⁶ digitised operational data collection for peri-urban and rural small water enterprises by transitioning away from a paper-based manual system to a mobile app. The app collects water station data, such as sales, meter reading and

Figure 2

Mobile-monitored water delivery



Status monitoring (leakage, theft, device mal-function): Piped and Non-piped

NextDrop, Safe Water Networks, Manobi , Upande, Grundfos, EMS, Vergnet

However, it is important to identify the business case for collecting monitoring data from the beginning. Ultimately, the water and sanitation monitoring pilots we have supported that did not have a clear way to finance the additional costs of mobile technology and service maintenance (by consumers or government) either did not continue or failed to scale. In contrast, GSMA M4D Utilities Innovation Fund grantee, Manobi, developed a digital management platform for small water providers in Benin that enables mobile payment for water, and profit and loss reporting, to help them become more investible. Manobi has since been awarded a contract by the government to scale its solution with small water providers across Benin. water quality, and has reduced station monitoring costs (travel and accommodation to station locations) by 50 per cent and monthly downtime from 12 to eight hours per month.

 Remote monitoring using M2M technology without human intervention at reporting stages: One of the first GSMA M4D Utilities Innovation Fund water grantees, Portland State University (PSU), and its partners SweetSense Inc.¹⁷ and Living Water International,¹⁸ developed GSMenabled sensors that send daily data on pump functionality (water pressure) to servers over GPRS networks. In the sanitation sector, GSMA M4D Utilities Innovation Fund grantee, Sanergy,¹⁹ also used SweetSense sensors in its Fresh Life Toilets to estimate fill levels and schedule waste collection.

Souce: GSMA M4D Utilities

(<u></u>

Quality monitoring reporting through user-operated testing kits/remote sensing

Sarvajal, Grundfos, SWN

A clear business case for mobile monitoring is particularly important in rural areas where service use tends to vary by season and payments are limited. The cost of investing in monitoring devices or staff can outweigh the perceived value and, even if this data is collected and stored in an actionable format, using it to drive investment can be tricky.

Paying more attention to the business case and financial sustainability of mobile monitoring solutions for water would also be good news for the mobile industry, as innovative payment models would be built into mobile-enabled water services.

Digitising utilities is helping to reduce non-revenue water and improve services

Water utilities often suffer from high rates of nonrevenue water (NRW), which are usually caused by infrastructure problems, such as leaky pipes, or commercial issues, such as incorrect billing, faulty meters or illegal connections to the water network. For instance, water utilities in Kenya lose 30 to 85 per cent of revenues due to faulty infrastructure.²⁰ By failing to collect revenue for all the water they treat and distribute, utilities with high NRW rates cannot provide a sustained and reliable service for their customers as they lack the resources to fix problems. Extending the network also becomes more difficult, creating a vicious cycle of service decline.

Digitising processes such as meter reading, billing, payments and complaint management systems, has

shown a clear reduction in NRW for many utilities. GSMA M4D Utilities Innovation Fund grantee, Wonderkid, has developed a suite of mobile tools for water utilities in Kenya to adapt and scale a complaint management, self-meter reading and payment system for users. The project saw a 28 per cent increase in revenue collection and an eight per cent increase in revenues billed for the utility.²¹ The results were similar for CityTaps, whose digital meters, mobile payments and backend platforms have helped a water utility reconnect customers in arrears. This has increased revenue from low-income consumers and reduced the number of people connecting illegally, which has a negative impact on service delivery for all customers.

More partnerships are needed for PAYG to make a breakthrough in the water sector

While replicating the success of PAYG models beyond solar energy has been discussed for a while. it is finally beginning to show promise in the water sector and is particularly interesting for mobile operators serving urban households. Digitising utilities gives mobile operators the opportunity to drive mobile money adoption at scale.

For instance. Wonderkid's mobile solutions increased the number of mobile money transactions for bill payment at local water utility KIWASCO by 71 per cent and the value of transactions by 50 per cent. Mobile

operators can also drive their businesses by offering bundled services to the utility, such as handsets, data, mobile money integration, bill management apps, USSD integration, SMS packs and short code.

WATER

WONDERKID

MOBILE-ENABLED CUSTOMER CARE AND BILLING FOR WATER UTILITIES



PROBLEM: The National Development Plan of Kenya seeks to make basic water and sanitation available to all by 2030. Currently, just over 50 per cent²² of Kenyans have access to improved water sources.²³ Kenyan water utilities lose 30 to 85 per cent of their revenues due to commercial or infrastructure problems.24

SOLUTION: Wonderkid offers software-as-a-service solutions, such as billing, customer management and revenue management, for public- and private-sector enterprises to gain real-time insights into their operations. In 2012, Wonderkid developed a customer complaint management system, MajiVoice, which received support from Kenya's Water Services Regulatory Board.

GRANT SUMMARY: In May 2015, the GSMA M4D Utilities Innovation Fund awarded a grant to Wonderkid to help it develop a suite of mobile tools for four water utilities in Kenya. The grant supported a complaint management and tracking system that allows customers to report maintenance and upkeep issues. It also offered a mobile app for meter



W⁽)NDERKID

USE OF MOBILE CHANNELS SMS / Mobile Apps / Mobile Money

Wonderkid Multimedia LTD.: Digitising water utilities in Kenya

readers that allows meters to be photographed, helping to address disputes and verify meter readers' activities in real time. A self-meter reading and payment system allows users to send their own meter reading via SMS and receive a preliminary bill with instructions for paying via mobile money using Safaricom's M-Pesa.

IMPACT: KIWASCO, one of four utilities supported by the project, recorded a 28 per cent increase in revenue collected and an eight per cent increase in revenue billed. The average complaint resolution time dropped from more than 15 days to six days. During the project, the number of mobile money transactions to pay water bills increased by 71 per cent and there was a 50 per cent increase in the value of transactions.

LOOKING AHEAD: Using the tools developed and improved during the project, as of December 2018, Wonderkid is serving over 22 water utilities across Africa, providing services that are accessible to over four million customers using mobile platforms.

ßß

Previously, logbooks were used and a lot of documentation and filing [was done; these were then] dispatched to different offices [and field zones]. It was guite a process compared to now – complaints are logged first on the computer then passed on to the right person for action [via computer or mobile phone], which is fast and direct.

KIWASCO CUSTOMER CARE STAFF, KISUMU, KENYA

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WATER

CITYTAPS

SMART PREPAID WATER METERS FOR URBAN HOUSEHOLDS



LOCATION \odot Niger MOBILE OPERATOR PARTNER Orange Niger



USE OF MOBILE CHANNELS Mobile Money / M2M Connectivity (LoRa)

Bringing water to every urban home with the power of mobile: An update on our grantee, CityTaps

PROBLEM: Water supply disconnections due to non-payment is a common issue for urban residents of Niamey, Niger.²⁵ Meanwhile, Niger's national water utility faces challenges serving the poor with affordable and clean running water, while also reducing the physical and commercial losses it needs to remain financially sustainable.

SOLUTION: CityTaps has developed a water utility subscriber management solution that includes a smart prepaid water meter that uses Orange mobile money and M2M technologies. The solution allows households to make microprepayments for their water at any time using mobile money. CityTaps also provides a software management system and a subscriber management dashboard to monitor usage and performance of the meters remotely.

GRANT SUMMARY: In September 2015, the GSMA M4D Utilities Innovation Fund awarded CityTaps a grant to launch 250 smart prepaid water meters in Niamey, Niger, in partnership with the local water utility, Société d'Exploitation des Eaux du Niger (SEEN) and Orange Niger. In April 2018,



CityTaps received another GSMA grant to continue scaling this service

IMPACT: As of October 2018, CityTaps has installed 460 of its CTMeters. An initial survey revealed that 62 per cent of CityTaps customers are first-time mobile money users, and 88 per cent of surveyed users felt that their water spending had decreased since the project began. Ninety per cent of women using the service felt that they spent less time obtaining water.

LOOKING AHEAD: Building on the project funded by the GSMA M4D Utilities Innovation Fund, CityTaps plans to reach 200,000 people by the end of 2019 and more than two million by the end of 2022. The company has also been selected to participate in the OrangeFab France program, which will provide support to integrate and deploy its solution in other Orange-footprint countries, such as Senegal and Côte d'Ivoire. In October 2018, CityTaps raised one million euros and has received an order for 10,000 meters from SEEN to scale its service.²⁶

G	G	

I can do what I want with my money, because I don't need to wait until the end of the month to know how much I need to pay for water.

CITYTAPS USER, NIGER



WATER

SAFE WATER NETWORK IMPROVING WATER DELIVERY THROUGH MOBILE MONEY AND M2M TECHNOLOGIES



PROBLEM: Nearly 18 per cent of the population in Ghana relies on an unprotected well/spring or surface water to meet their daily needs. An additional 17 per cent has access to an improved water source, but the supply is extremely limited.27

SOLUTION: Safe Water Network (SWN) builds and owns water treatment and distribution stations and has worked alongside communities in Ghana since 2009 to provide training and support to ensure the stations can be locally managed and operated.

GRANT SUMMARY: In September 2015, SWN received a grant from the GSMA M4D Utilities Innovation Fund to develop an app to digitise its manual water station data reporting systems for 37 water stations. In May 2018, SWN received another grant from our Innovation Fund to trial mobile







USE OF MOBILE CHANNELS Mobile Apps / Mobile Money / M2M Connectivity

Reducing water station operational costs through mobile monitoring

money services and M2M connectivity for water ATMs and prepaid household meters in partnership with MTN Ghana.

IMPACT: The 2015 project reduced station monitoring costs by 50 per cent and helped to reduce maintenance response time per station by four hours per month. SWN has converted over 100 households in two communities from postpaid meters and cash-only transactions to prepaid meters with the option to use mobile money instead of cash.

LOOKING AHEAD: The current mobile monitoring tool captures financial and operational metrics, but development is underway to track consumer parameters, which builds on the current system. This additional functionality will allow SWN to measure how volume purchased is affected by customer demographics and seasonality, and how customer activation campaigns affect household participation.

GG	
We are now at the forefront of technology; hence ways reporting issues have great improved. I don't need to tr miles just for collection of d	of y avel for ata.
SWN STAFF, GHANA	55

WATER

DRINKWELL



MOBILE-ENABLED WATER ATMS TO PROVIDE CLEAN WATER TO LOW-INCOME HOUSEHOLDS IN DHAKA

LOCATION \odot Bangladesh MOBILE OPERATOR PARTNER robi Robi Axiata

USE OF MOBILE CHANNELS Mobile Apps / Mobile Money / M2M

PROBLEM: 41 per cent of all improved water sources in Bangladesh are contaminated with E. coli bacteria, which suggests a high prevalence of faecal contamination. About 13 per cent of the country's water sources also contain arsenic levels above Bangladesh's legal limit.²⁸

SOLUTION: Drinkwell, a US-based company with subsidiaries in India and Bangladesh, has developed a sensor-based water treatment solution for purifying water and distributing it through water ATMs.

GRANT SUMMARY: In October 2017, the GSMA M4D Utilities Innovation Fund awarded a grant to Drinkwell, in partnership with Dhaka Water Supply & Sewerage Authority (DWASA) and mobile operator Robi Axiata, to operate water ATMs in Dhaka fitted with remote monitoring technology to ensure a safe and reliable water supply.

IMPACT: 96 per cent of Drinkwell customers at six water ATMs found their current water supply extremely or mostly

safe and clean. As of December 2018. Drinkwell has installed over 80 M2M-enabled water treatment and distribution points. It has so far delivered over one million litres of water to over 200 systems across India, Bangladesh, Laos, Cambodia and Nepal, giving over 250,000 people safe water by partnering with organisations including WaterAid, USAID. Dhaka Ahsania Mission. GIZ. DWASA. India's Department of Science & Technology and Tata Trusts.

LOOKING AHEAD: In addition to Bangladesh. Drinkwell also operates in India, Nepal, Laos and Cambodia. Drinkwell is now preparing to test mobile payments, which would no longer require ATM caretakers to transfer funds to the DWASA. In May 2018, Drinkwell secured a contract with the DWASA to expand its services to 300 water ATMS in Dhaka, and another contract from the Water Supply & Sewerage Authority to pilot three water ATMs in Chittagong, Bangladesh. Drinkwell's vision is to reach five million people by 2020 and one billion by 2030 by expanding to markets in China and Africa.



2	2	

Drinkwell is good even if you have to pay for it, because the water is good.

DRINKWELL USER, DHAKA

WATER

NEXTDROP

USING MOBILE PHONES TO OPTIMISE REAL-TIME WATER DELIVERY INFORMATION



USE OF MOBILE CHANNELS SMS / Mobile App



of when their water would be turned on, helping consumers to manage their daily routines. Most importantly, NextDrop provided near realtime visibility into ground-level information to Bangalore Water Supply and Sewerage Board (BWSSB), leading to data-driven decisions that should result in better service.

GRANT SUMMARY: In January 2014, the GSMA M4D Utilities Innovation Fund awarded NextDrop a grant to build and trial a water information system (WIS) for the BWSSB to track monitor and validate water distribution timing, frequency and duration in real time for 40 per cent (over three million) of Bangalore residents. By enabling two-way communication

eWATERPAY

PAY-AS-YOU-GO WATER IN AFRICA

PROBLEM: Due to scarcity, water distribution in

Bangalore is managed by about 400 "valvemen"

who manually turn on and off 8,000 valves

around the city. This creates delays and has a



USE OF MOBILE CHANNELS Mobile Money / M2M



informally, by village water committees that collect fees manually and maintain the taps. However, there is little accountability with the collection and spending of maintenance fees.

SOLUTION: eWATERpay has designed GSM-monitored water taps that dispense water when users present their NFC³¹ tag, which accesses prepaid water credit stored on the cloud. In each village, at least one water retailer has a \$130 smartphone loaned to them by eWaterPay. Credit is added either when the customer pays an agent in cash, who then uses an app on their smartphone with NFC to top up their balance, or when customers pay for it themselves using mobile money to top up their account

PROBLEM: 35 per cent of the rural population in The Gambia relies on surface water or has extremely limited access to clean water.30 Communal water points are managed, often

GRANT SUMMARY: In April 2016, the GSMA M4D Utilities Innovation Fund awarded eWATERpay a grant to install eWATERtaps in three villages of The Gambia



FIND OUT MORE NextDrop: Water.Simplified

significant impact on end users as the process and information flows are not conducted in real time.

SOLUTION: The NextDrop solution bridged this gap by gathering information from valvemen and giving consumers 30 to 60 minutes notice

between the BWSSB and city residents, the solution tested whether the water supply would be more reliable if supply information was available in real time.

LOOKING AHEAD: NextDrop collaborated with the non-profit Foundation for Environmental Monitoring to develop Mira, a mobile phone solution to test the water quality in Bengaluru, India. The solution is due to launch in early 2019.29

Whenever the messages come, I go and check our tap and am really happy that the messages are accurate. Keep up the good work! NEXTDROP USER, 55

BANGALORE, INDIA



FIND OUT MORE

Using IoT to monitor and introduce pre-payment for remote water stands in The Gambia

IMPACT: By June 2017, 100 taps had been installed across the Gambia. Improving services for over 9,000 people. As of December 2018, eWATERpay is operating in two more countries, Tanzania and Ghana, serving over 51,000 people eWATERpay estimates that three times more revenue is collected through its solution than when payments are collected in cash.³² The eWATERpay meters now have full over the air capabilities allowing real-time software updates via the GSM AnvNetSecure Sim module.

GG At night, we can't go to the well but we can go to the tap. With your tag, you can take water, that's why it's important. EWATERPAY CUSTOMER THE GAMBIA

55

WATER

DEVELOPMENT WORKSHOP ANGOLA

MISSED CALLS FOR MONITORING COMMUNITY WATER SERVICES



USE OF MOBILE CHANNELS Mobile Services

PROBLEM

SOLUTION / PROJECT

About 30% of the population of Huambo, Angola's second largest city, relies on water from often unreliable communal water points, and another 40% on unimproved shallow wells at some households. This forces people to rely on informal water vendors who sell water at 10 to 15 times the normal price.33

Development Workshop Angola (DWA) and its technology partner, SeeSaw, developed the VerAgua programme to monitor communal water points. This included SeeTell, a water point status reporting system for caretakers that uses missed calls to different numbers to report different statuses, and SeeView a mobile app for field staff to view and update the water point status in the database

In January 2014, the GSMA M4D Utilities Innovation Fund awarded a grant to DWA to trial VerAgua in informal settlements in Huambo through a pilot of 120 water points.

UPANDE

REMOTE MONITORING AND GIS MONITORING FOR WATER UTILITIES IN KENYA



USE OF MOBILE CHANNELS M2M Connectivity

PROBLEM

In Kenva, studies show that nonrevenue water (NRW) levels among water service providers range from 31% to 85% in various counties.³⁴ Curbing NRW is a critical part of extending access to improved water resources for underserved Kenvans.

SOLUTION / PROJECT

governments and multilateral and bilateral agencies. In May 2015, the GSMA M4D Utilities Innovation Fund awarded a grant to

connectivity solutions, to develop GSM-enabled remote monitoring sensors, a communication module and GIS tool. These were intended to measure the water flow rate and generate alerts related to leaks and bursts, and align the boundaries of the district metering areas with the master meters to calculate the losses that lead to NRW.

PORTLAND STATE UNIVERSITY

MOBILE-ENABLED SENSORS TO MONITOR RURAL WATER HAND PUMPS TO IMPROVE SERVICE DELIVERY



USE OF MOBILE CHANNELS M2M Connectivity



LOOKING AHEAD

SweetSense's low-cost remote sensors are now being widely used in about 15 countries for government, non-profit and for-profit applications in water, sanitation, energy and infrastructure. For example, sensors have been deployed for water sanitation and hygiene projects in Ethiopia, rural Kenya and the Somalia

WATER

THE LILONGWE WATER BOAR

AUTOMATED PREPAID URBAN WATER KIOSKS USING MOBILE MONE

LOCATION \odot Malawi

USE OF MOBILE CHANNELS Mobile Payments

PROBLEM

48% of the population in Malawi either relies on unprotected well/spring or surface water to meet their daily needs, or has access to less than 30 minutes of clean water supply.37 Many households collect water from public water kiosks that are manually operated

SOLUTION / PROJECT The Lilongwe Water Board (LWB) is

Malawi with a mandate to supply pot surrounding areas.

and payments are made in cash. This limits access and prevents transparent accounting.

In September 2015, the GSMA M4D L LWB to test a solution developed to from communal water points (kiosks topping up their account with mobile

UDUMA S.A.S

SMART WATER HAND PUMPS USING MOBILE MONEY PREPAYMENTS

LOCATION \odot Mali

USE OF MOBILE CHANNELS Mobile Services / Mobile Paym

PROBLEM

37% of the population in Mali does not have access to even basic clean drinking water, and a number of those who do rely on communal hand pumps to draw water.³⁸ Broken hand pumps lead to increased use of unsafe water and long walking distances for women and girls.

SOLUTION / PROJECT

Uduma S.A.S provides operation and maintenance services for water hand pumps and small piped water services in Mali.

In May 2017, the GSMA M4D Utilities Innovation Fund awarded a grant to Uduma to trial e-pumps in 11 municipalities in Mali. This involved using a cashless payment system through an offline POS terminal operated by a pump caretaker. Customers can pay using NFC cards connected to their mobile money account, which can be topped up at local sales points and agents. The technology also enables caretakers to receive valuable data about ongoing operations and possible maintenance requirements.

MANOBI

MOBILE PAYMENTS AND TOOLS FOR RURAL WATER UTILITIES IN BENIN

LOCATION \odot Renin

urban population.39

According to the WHO/UNICEF Joint

Supply and Sanitation, only 30% of

Benin's rural population has access to

piped water, compared to 57% of the

Monitoring Programme (JMP) for Water

PROBLEM

USE OF MOBILE CHANNELS Mobile Payments



SOLUTION / PROJECT

microwater utility networks

In May 2015, the GSMA M4D Utilities Innovation Fund awarded a grant to Manobi to develop new functionalities for UtilitY85 that would enable mobile water bill payment and profit and loss reporting. Manobi integrated its platform with mobile operators MTN's and Moov's platforms to enable water consumers to pay their water bill using mobile money.





After the grant ended, DWA implemented a USAIDfunded water and sanitation project in Huambo. They also implemented VerAgua in Luanda.

Úpande

Upande provides internet, web mapping and GIS services to the private sector. Upande, in partnership with BRCK, a Kenyan company developing locally relevant

Portland State

MIN

PROBLEM

In Rwanda 58% of the population relies on groundwater resources.35 According to Living Water International (LWI), over 40% of hand pumps installed in the country to access groundwater are nonfunctional.36



SOLUTION / PROJECT Portland State University's (PSU) SweetLab and SweetSense Inc. developed mobile-enabled sensors that report the status of hand pump functionality and flag repairs for maintenance staff in real time.

In November 2013, the GSMA M4D Utilities Innovation Fund awarded a grant to PSU in partnership with LWI and SweetSense to test M2M sensors for LWImanaged hand pumps that would provide real-time data on pump uptime. frequency of use, time to repair and other key indicators. While about 181 sensors were installed for this pilot, operations in Rwanda did not have continued funding.

36 Ensuring a clean water supply for all through mobile technology

Upande has developed Washmis further and spun off Vipimo (a Swahili word for measurement). These tools are being used by many water companies, as well as several horticultural and logistical firms.

LOOKING AHEAD

RD Y	
Enni Enni	
	LOOKING AHEAD
a parastatal water utility organisation in table water to the city of Lilongwe and Utilities Innovation Fund awarded a grant to allow low-income consumers to buy water) at any time using NFC-enabled cards after e money.	As of December 2018, due to significant operational and partnership challenges, LWB is still working to get the kiosks operational.
	UDUMA Automatika
ients orange"	
	LOOKING AHEAD

Through its partnership with Orange, Uduma is aiming to increase financial inclusion through mobile money use, while also making regular water payments more affordable for low-income customers.



Manobi has developed the UtilitY85 platform, a digital management platform for small water pipe system operators to log operational data from their rural

LOOKING AHEAD

In October 2018 Manobi was awarded a contract for \$2 million to scale across Benin and provide the platform to water-piped schemes. It also plans to scale in Senegal Nigeria, Ghana and Kenya.