Mobile for Development Utilities

Water and Sanitation: Innovative Mobile Solutions to Improve Service Delivery

World Water Week
29 August 2017

About the GSMA

THE GSMA WAS FOUNDED IN 1987

12 OFFICES WORLDWIDE:

LONDON • DUBAI • ATLANTA • BRUSSELS • BARCELONA • HONG KONG • BRASILIA • BUENOS AIRES • SAO PAULO • NAIROBI • NEW DELHI • SHANGHAI

The GSMA represents the interests of mobile operators worldwide

UNITING NEARLY **800** MOBILE OPERATORS

WITH **300+** COMPANIES in the broader mobile ecosystem

The world's leading mobile industry events, Mobile World Congress and Mobile World Congress Shanghai, together attract **130,000+** people from across the globe each year

The GSMA works to deliver a regulatory environment that creates value for consumers by engaging regularly with:

MINISTRIES OF TELECOMS • TELECOMS REGULATORY AUTHORITIES • INTERNATIONAL & NON-GOVERNMENTAL ORGANISATIONS

CONNECTING **27,000+** Industry Experts

Exclusively for GSMA Members, InfoCentre[2] is your place to connect with a global community of industry experts

GSMA Working Groups provide frameworks and standards in commercial, operational and technical matters that help maintain and advance mobile industry ecosystems

7.5 BILLION+ MOBILE CONNECTIONS WORLDWIDE

The Mobile Industry and the Sustainable Development Goals

"Mobile is about much more than technology — it's about people and society, connecting people to essential services."

- Mats Granryd, GSMA Director General, Mobile World Congress 2016
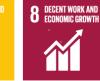
GSMA Mobile for Development Utilities

Our mission

The global opportunity

To unlock **commercially sustainable** business models that leverage **mobile** to deliver affordable and improved **energy, water and sanitation** services in emerging markets.

SDG 6: ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL BY 2030

SDG 7: ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL BY 2030

SANITATION

WATER

ENERGY

2.4 BILLION
people lack access to improved sanitation facilities.

663 MILLION
million people lack access to an improved drinking water source.
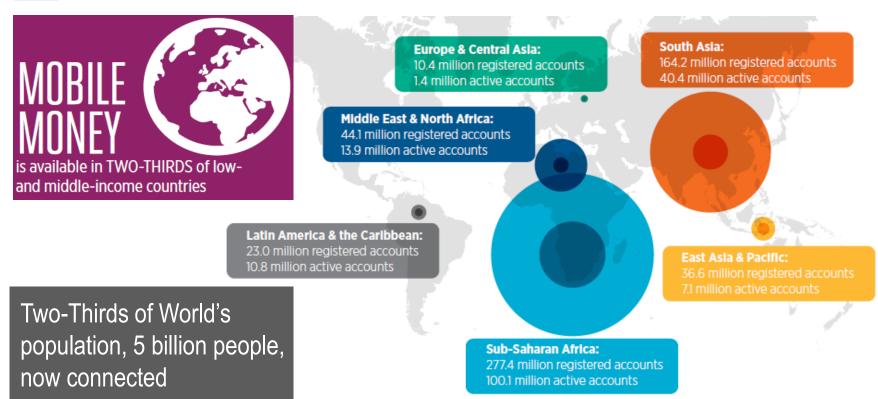
1.2 BILLION
people lack access to energy.

1.8 BILLION
are covered by mobile networks.

289 MILLION
are covered by mobile networks.

772 MILLION
are covered by mobile networks.

The Global Opportunity

MOBILE MONEY is available in TWO-THIRDS of low- and middle-income countries

Europe & Central Asia:
10.4 million registered accounts
1.4 million active accounts

South Asia:
164.2 million registered accounts
40.4 million active accounts

Middle East & North Africa:
44.1 million registered accounts
13.9 million active accounts

Latin America & the Caribbean:
23.0 million registered accounts
10.8 million active accounts

East Asia & Pacific:
36.6 million registered accounts
7.1 million active accounts

Sub-Saharan Africa:
277.4 million registered accounts
100.1 million active accounts

Two-Thirds of World's population, 5 billion people, now connected

Mobile Channels

Mobile Services	Mobile Payments	Machine-to-machine connectivity	Sales, distribution and branding	Mobile Operator Customer Data

Speakers

- Case Study 1 – Optimising water utilities with mobile technology
  Daniel Kamiri, Wonderkid

- Case Study 2 – Mobile and the sanitation value chain
  Lindsay Stradley, Sanergy

- The mobile-enabled service provider journey
  Mary Roach, Loowatt

- Q & A

Mobile Technology in Utilities

Lessons from Utilities leveraging on Mobile Technology

Daniel Kamiri

Team Leader

Wonderkid Multimedia LTD

www.wonderkid.co.ke

Mobile for Development
Utilities

GSMA

WONDERKID
let's make a difference

Mobile Technology in Utilities

Source of lessons

GSMA Mobile for Development Utilities Innovation Fund, 2015 / 2016
targeting 800,000 consumers
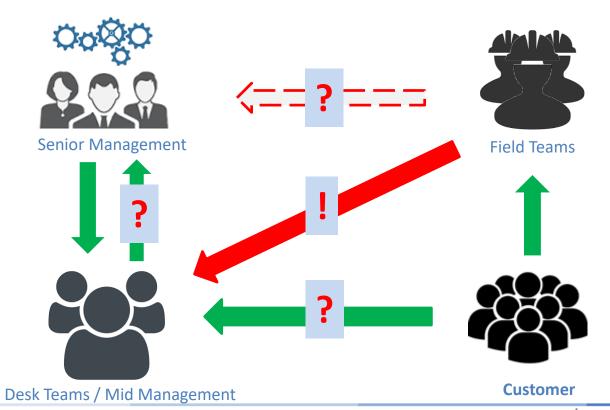
Lessons from Utilities

1. Customers are willing to pay*

2. Management Teams appreciate data*

3. Staff do not mind supervision*

4. Leadership determines success of solutions*

5. Less Complaints = Bills Paid on Time*

6. Availability of Timely Data = better decisions*
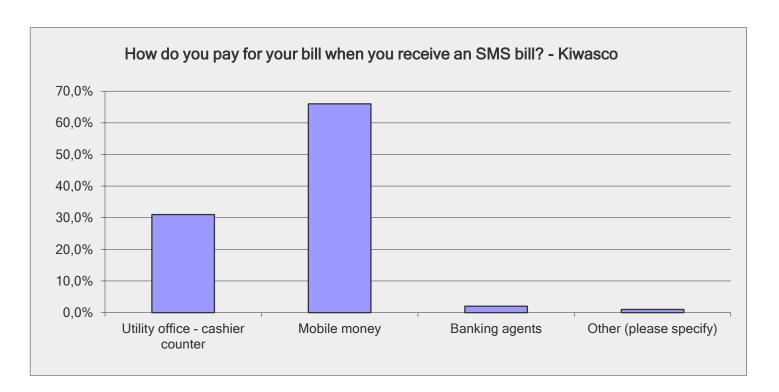
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Increased Mobile Money Transactions

How do you pay for your bill when you receive an SMS bill? - Kiwasco
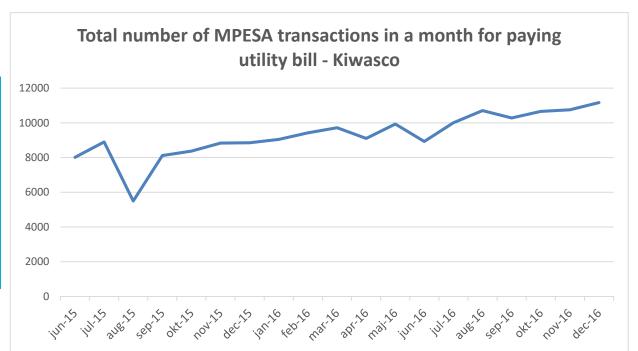
Increased Mobile Money Transactions

Customers trust the bills; and mobile phone as a medium of communication with utility
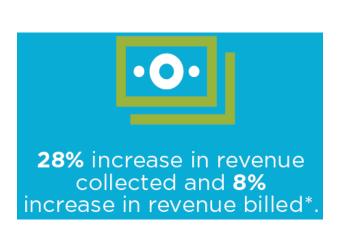
71% increase in the number and **50%** increase in value of mobile money transactions*.

Total number of MPESA transactions in a month for paying utility bill - Kiwasco

WONDERKID
let's make a difference
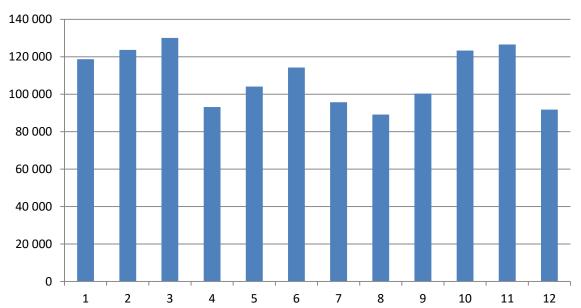
Increased Revenue per Month

Revenue increase from accurate bills and reduction in illegal connections; metered customers

28% increase in revenue collected and **8%** increase in revenue billed*.
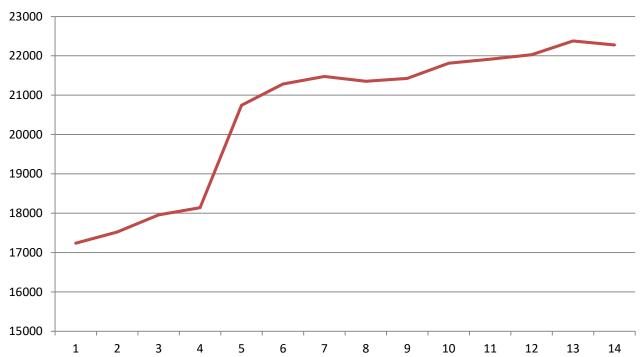
Revenue

Bills on Actual Readings
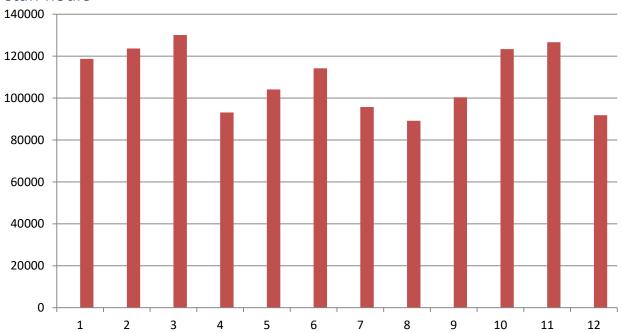
Customers Billed on Actual Bills

Success Factors

The Mobile Technology is not a solution in itself but just part of a bigger strategy

Leadership / People is everything

All Inclusive Approach

Define the Processes

Leverage on Partnerships

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Challenges & Opportunities

The landscape is quickly changing – and there is enormous opportunities for industry players

MNOs

1. Service rates

2. Device Security

3. Additional Services

4. Quality of Service

OEM

1. Customized Devices

2. Better Pricing

Knowledge Sharing

1. Colloquiums

2. Benchmarking

Asante

Danke

Shukran

dankjewel

Thank you

kiitos

Merci

Gracias

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Mobile Tech for Scaling Safe Sanitation

Lindsay Stradley, Sanergy
World Water Week – August 2017

Sanitation crisis in Kenya

8 million
in Kenya's urban slums

17,000
Sanitation related child deaths per year

$270 million
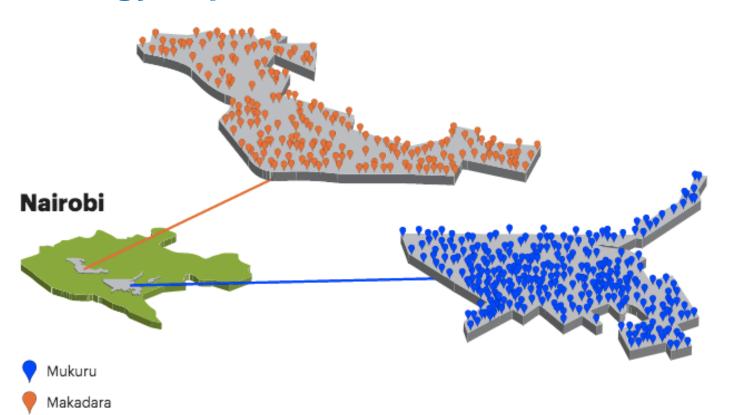Lost in GDP each year

We take a
full value chain approach to tackling the sanitation crisis

Build

Franchise

Support

Collect and treat

Convert and distribute

Sanergy Impact to Date

Nairobi

🔵 Mukuru
🟠 Makadara

Total population of Mukuru and Makadara: 500,000 people

555 FLOs

1,200 Fresh Life Toilets

50,000 Uses per day

4,000 Tones of waste per year

Why invest in mobile?

EFFICIENT SYSTEMS FOR SCALE

 Improved Customer Experience

 Improved Employee Experience

 Improved Operations

Franchise

Improved Customer Experience

PROBLEM: Loan repayments were at 50% in 2015. We identified that negligence came from not being pro-active enough in reminding our customers.

TECH OPPORTUNITY: Better communication through developing Infobip to track loans efficiently as well as send automatic reminders via SMS. Enabled us to identify clients in danger of defaulting.

RESULT:
- Loan repayments improved to 75%.
- Credit officers now working at a ratio of 65:1 FLOs: Credit Officer
- Received a 5x increase on our credit line.

Payment made easy

1. 99% of customer payments made using **M-PESA**

2. User experience – seamless and reliable for our customers

3. Accountability – easy to track has eliminated fraud

Support

Improved customer and employee experience

PROBLEM: Customers were frustrated with how long it was taking to fix problems. Indeed, we were at 20% in July 2016 for case management.

TECH OPPORTUNITY: Develop a mobile integrated system for employees to report problems, assign tasks, and track updates.

RESULT:
- Key insight: triaging system was not properly calibrated.
- Case management now resolved at 80% against how long it was expected to take.
- Employees are much happier as they can clearly set expectations for their operators, and also plan their work schedules more effectively.

Collect and treat

Improved Operations

PROBLEM: With rapidly growing network – 60 facilities per month – it is hard to determine most optimal way to undertake waste collection

TECH OPPORTUNITY: Develop a mobile system + GPS mapping to allow for optimized and real-time route collections that could be dynamically updated when necessary.

RESULT:

- From June 16 – July 17, network expanded by 40%; waste collection personnel stayed the same.
- Cost / kg of waste collected dropped by 20%

Collect and treat

Improved Operations

PROBLEM: Cartridges are not always filled, meaning that what is collected often has spare capacity.

TECH OPPORTUNITY: Using mobile to develop a tracking system to know when they will be filled
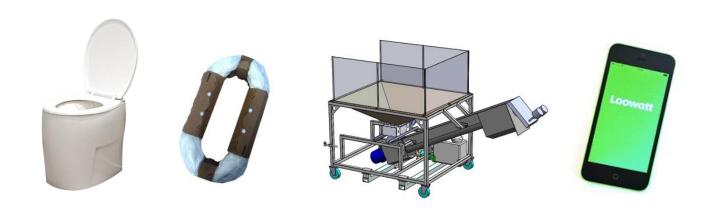
RESULT:
- Inbuilt Sanergy Mobile App helped to determine that the sensors were not as accurate
- Proved to be more difficult than we expected, as well as the cost of sensors was prohibitive for expansion.
- As sensor costs come down and accuracy improves, Sanergy is open to trying sensors again to achieve real time demand-driven collections.

Loowatt

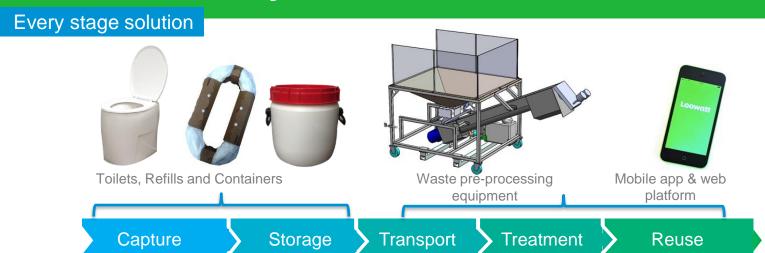Sanitation Solutions for a Water Scarce World

Mobile Technology Journey

Loowatt develops safe, closed-loop sanitation solutions that provide high-quality access for all

Loowatt

21st Century Sanitation Value Chain

Toilets, Refills and Containers

Waste pre-processing equipment

Mobile app & web platform

| Capture | Storage | Transport | Treatment | Reuse |

Expertise and Standard Operating Procedures Across Value Chain

Loowatt

Proof of Concept

Urban pilot system in Antananarivo, Madagascar:
- 100 household toilets installed, 600 toilet users a day
- 25 m^3 anaerobic digester including CHP generator, pasteurisation system, and net energy yield of 40 kWh/day, and vermicompost
- 1.4 tons household toilet waste processed every week
- >95% Roso toilet customers purchase a refill every week for c. US$ 1.00
- 75% contract holders are women

Loowatt

Why use mobile?

- **Streamline operations:** collection routes

- **Improve customer service**: customer service number

- **Integrate mobile payments**: reduce costs and transparency

- **Capture Data:** Customer files, productivity of our operations …

Loowatt

Mobile Context:

	Kenya	Madagascar	Haiti
HDI Ranking (2014)	147	157	164
SIM Penetration (Q4, 2015)	78%	31%	68%
% internet users (IWS-03/17)	81.8%	5.1%	12.8%

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Our Partners

airtel

acrea

Every Interaction.

MNO Partner:
- Mobile Money
- Green Line
- SIMs

Developer:
- Architecture
- On-going support

UX Design:
- User friendly

Loowatt

The Solution

Web Platform &
Mobile Application

"Green Line" –

Dedicated SMS line

Mobile Money

The Good, the Bad and the On-going

The Good:

- Office has real-time information on field-operations
- Customers feel their voice is being heard.
- Improved perception by our clients on "professionalism" of our service, and of our household collectors
- Field staff realise the value of their work
- Household collectors have improved status in community but some struggle with use of mobile application.

The Good, the Bad and the On-going

The Bad:

Challenge	Choice of what to prioritise
Piloting service and building a platform	Flexible back-end we could adapt
Limited mobile money experience	Invest in education
Tech provider with sanitation experience	Prioritise good tech over experience
Mobile literacy of our field team	Design with user in mind (QR codes etc..)

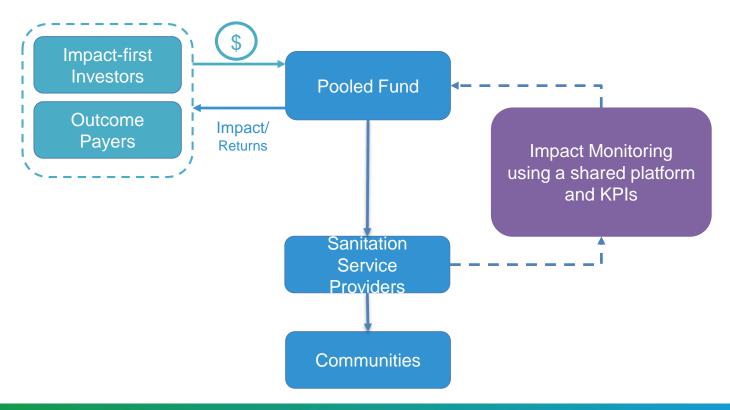Loowatt

The Good, the Bad and the On-going

It's more of a journey than a one-time project. We need to invest more time and resources to refining the solution

On-going challenge	Current thinking
Mobile money usage	New approaches beyond direct from customer
Network outages	Change partner? At what cost?
Upkeep costs	Switch to local supplier?
More development	Work with others!

Loowatt

Looking ahead

- Limited advantage of a proprietary solution in the sanitation space

- There are benefits in co-operation:
  - Reduces cost burden to any one service provider
  - Removes barriers to entry
  - Supports compliance to standards and rating systems
  - Can be used in developing PPPs
  - Can be used to provide targeted subsidy for specific geographic areas, to provide services to the most disadvantaged etc…
  - Aggregate demand and ease supply of funding

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Looking ahead

Questions?

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Transforming Sanitation Marketing through Mobile
Erica Lloyd, SOIL Systems Director
World Water Week, August 2017

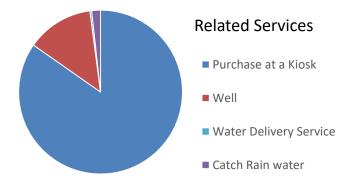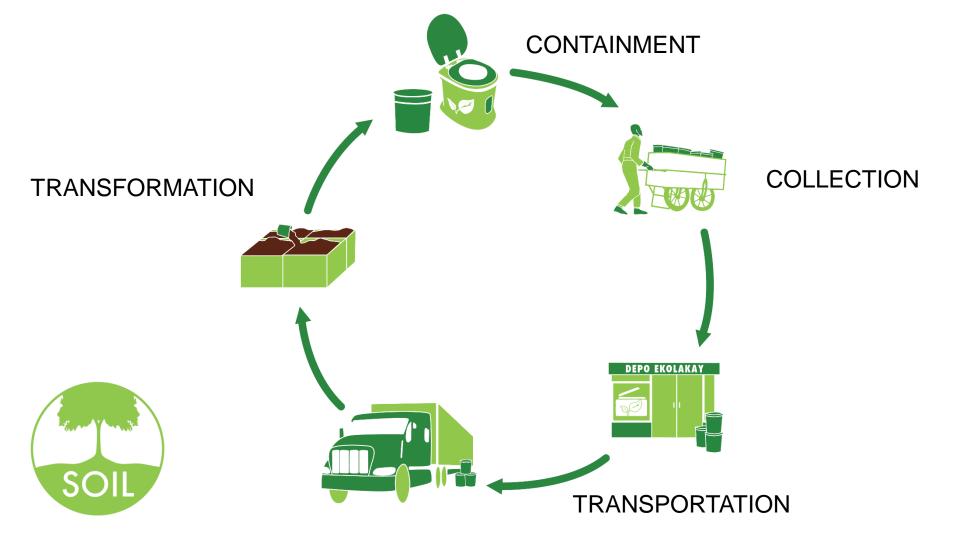# Using Mobile to collect and analyze detailed data about:

Prospects and clients

Employees

Marketing channels

- Normal operations
- Client Referral
- Community Events
- Door-to-Door
- Special Offers

Related Services

- Purchase at a Kiosk
- Well
- Water Delivery Service
- Catch Rain water

CONTAINMENT

COLLECTION

TRANSPORTATION

TRANSFORMATION

DEPO EKOLAKAY

SOIL

Panel

- **Erica Lloyd**   SOIL

- **Mary Roach**   Loowatt
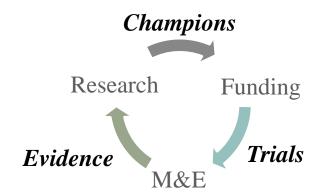
- **Lindsay Stradley**   Sanergy

- **Daniel Kamiri**   Wonderkid

Programme Activities

- Knowledge Sharing and Convening
  - **Asia Working Group**:15-16 November
- Advisory Services
- Innovation Fund
- Market Building

Champions

Research   Funding

Evidence   *Trials*

M&E

UKaid
from the British people

Publications

The role of mobile in improved sanitation access

Unlocking access to utility services: the transformational value of mobile

The IoT development Journey for utility enterprises in emerging markets

Mobile money payment toolkit for utility service providers

Innovation Fund

£5.9 million
Disbursed

4 million
Beneficiaries

£142 million
Raised in follow-on
investment

£1.4 million
Left to disburse

Contact Information

Innovation Fund deadline September 3rd!

https://www.gsma.com/m4dutilities-innovation-fund

GSMA Mobile for Development

@GSMAm4d #M4DUtilities

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