



CLIX: Convenient Living & Integrated Experience

Smart Utility Management for Bangladesh

*Transforming electricity, water, and gas
infrastructure with IoT and AI*

THE PROBLEM - CRITICAL INFRASTRUCTURE LOSSES



INFRASTRUCTURE

Jobaer Chowdhury
16 November 2024, 09:05 am
Last modified: 16 November 2024, 03:59 pm



RELATED NEWS

Salinity increase in rivers forces WASA to curtail water supply by 50 million litres

Severe water crisis hits 16 Ctg areas due to transmission line damage

Ctg WASA's main transmission line damaged, water supply uncertainty in 16 areas

Ctg Wasa set for a Tk3,745cr water supply overhaul

The Chattogram Water Supply Improvement Project, with financial backing from the World Bank, aims to replace 300km of existing pipelines and install 87,000 smart meters across the city



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China hits back to US by increasing tariffs to 125%

Caving to intolerance? Why the renaming of Mongol Shobhajatra matters

4.0 magnitude earthquake jolts Dhaka, other parts of Bangladesh

MOST VIEWED

Water Supply Crisis

- "Chattogram WASA experiences 25-30% non-revenue water loss, much higher than the global standard of less than 5%" ([The Business Standard, 2024](#))
- "A loss of Tk14-17 crore worth of water every month" ([The Business Standard, 2024](#))
- "42 Meter Inspectors for 78,000 connections" leads to inaccurate readings ([The Business Standard, 2022](#))

INFRASTRUCTURE

Jobaer Chowdhury
06 February 2022, 01:45 pm
Last modified: 06 February 2022, 01:46 pm



RELATED NEWS

Severe water crisis hits 16 Ctg areas due to transmission line damage

Ctg Wasa's Tk2,797cr project to connect Kattali to central sewerage system

Ctg Wasa set for a Tk3,745cr water supply overhaul

Chattogram Wasa to install 3,000 smart meters by June

Chattogram Wasa's daily water production capacity is about 45 crore litres, of which 25-30% is wasted either because of illegal connections or leakage reported as system loss or non-revenue sector



Top Stories

China hits back to US by increasing tariffs to 125%

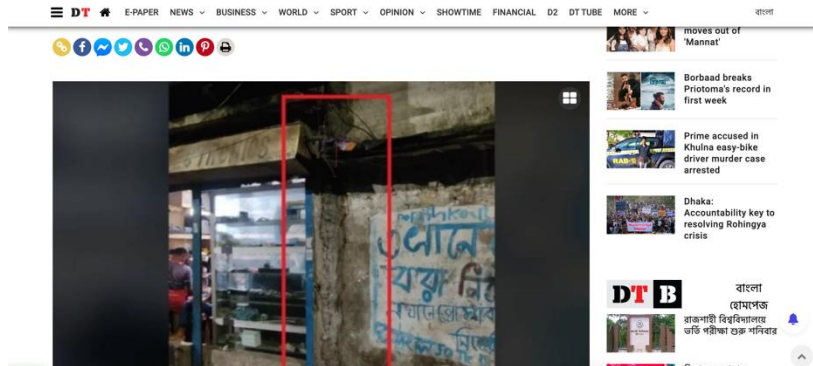
Caving to intolerance? Why the renaming of Mongol Shobhajatra matters

4.0 magnitude earthquake jolts Dhaka, other parts of Bangladesh

MOST VIEWED

Electricity Distribution Failures

- "5 lakh defective meters out of 3.5 crore" nationwide ([ATN News - Jul 16, 2024](#))
- Elderly users struggle with "token codes with over 100 digits" (CLIX exclusive interview)
- "Four people were electrocuted when the power cable fell into the waterlogged area in Mirpur" ([Dhaka Tribune, 2023](#))





Gas System Inefficiencies

- Titas Gas reported system losses of "7.67%, where BRC standardized 2%" ([Independent TV, 2025](#))
- Losses costing "3000 Cr BDT annually" ([Independent TV, 2025](#))
- Factories "cutting production by almost a third" due to inadequate gas pressure ([Daily Star, 2025](#))



The Solution: CLIX (Convenient Living & Integrated Experience)

CLIX

HomeDashboardHistoryOutage

Recharge History

Device	ID	Label	Type	Amount	Time	Date	Invoice
	2040622062	Home Gas Meter	Gas	500.00tk	11:53pm	02/04/2025	
	1239009899	Emrul Electricity Meter	Electricity	1,000.00tk	04:25pm	25/12/2024	
	2040622062	Home Gas Meter	Gas	500.00tk	04:14pm	25/12/2024	
	2040622062	Home Gas Meter	Gas	500.00tk	04:13pm	25/12/2024	
	3972024978	Home Water Meter	Water	500.00tk	03:34pm	25/12/2024	
	2040622062	Home Gas Meter	Gas	650.00tk	03:34pm	25/12/2024	
	2040622062	Home Gas Meter	Gas	650.00tk	03:29pm	25/12/2024	
	1239009899	Emrul Electricity Meter	Electricity	500.00tk	03:29pm	25/12/2024	

CLIX

@2024

Why CLIX?

Convenient Living

Integrated Experience

Links

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FAQ & Help

Contact

Address: Dhaka, Bangladesh

Email: clix@mail.com

Phone: +8801712345678

CLIX

Convenient Living & Integrated Experience

INVOICE

Invoice #: 112

Date: 02/04/2025

Time: 11:53pm

BILL TO:

Nafisa Anzum Dipra

dipra@email.com

+8801812345678

Karwan Bazar, Dhaka

DEVICE DETAILS:

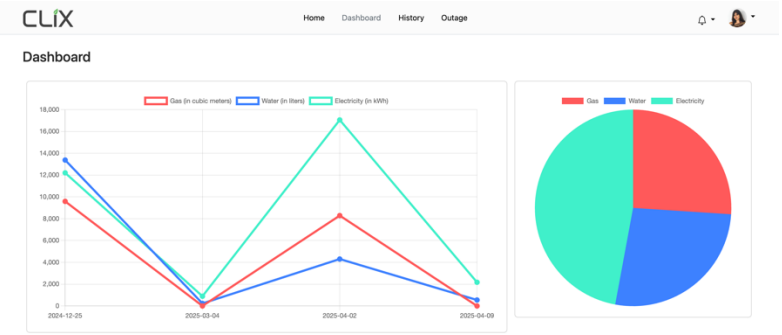
ID: 2040622062

Label: N/A

Type: Gas

Description	Amount
Gas Recharge	500.00 tk
Total Amount	500.00 tk

Thank you for using CLIX services



CLIX

HomeDashboardHistoryOutage

Your Devices

Device	ID	Label	Usage	Total Usage	Balance	Status	Settings	Pay
	1239009899	Emrul Electricity Meter	223.07 kWh	32315.62 kWh	467.50 b	Active		
	2040622062	Home Gas Meter	181.77 m³	17870.89 m³	-14.30 b	Unpaid		
	3972024978	Home Water Meter	50.27 L	18452.37 L	251.20 b	Active		

CLIX

HomeDashboardHistoryOutage

Requested Int Devices

Outage Map

Search area

Outage List

Search area

Type	Area	Outage	Start	End	Status	Range
	Road 4, Mohammadia Housline Societ, Mohammadpur, Dhaka, Dhaka Metropolitan, Dhaka District, Dhaka		02:15pm (27-Dec-	08:19pm (29-Dec-		

CLIX Overview

Integrated Technology Platform:

LoRaWAN-enabled smart meters with tamper detection and AES-128 encryption

Unified management dashboard for real-time monitoring across all utilities

AI-driven analytics for leak detection, theft identification, and equipment failures

Multi-channel payment integration with mobile banking options

Real-time outage management with push notifications

Multi-language consumer portal with usage tracking

Key Objectives:

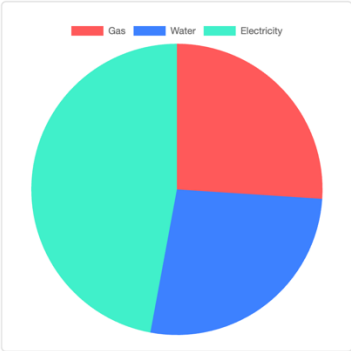
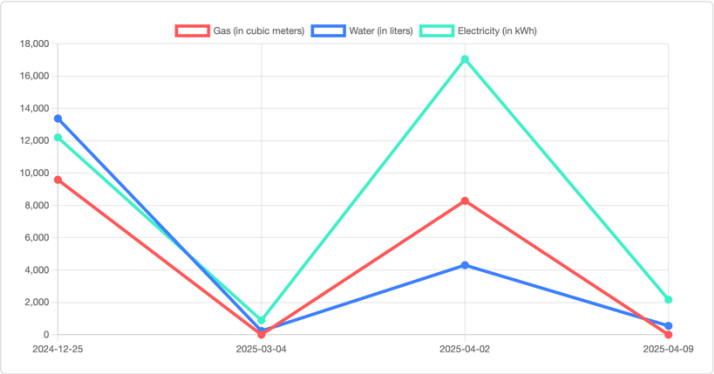
Reduce non-revenue losses across all utilities

Implement automated meter reading and billing systems

Enhance service reliability through predictive maintenance

Create a unified platform for all utility management

Dashboard



Your Devices

Device	ID	Label	Usage	Total Usage	Balance	Status	Settings	Pay
	1239009899	Emrul Electricity Meter	223.07 kWh	32315.62 kWh	467.50 b	Active		
	2040622062	Home Gas Meter	181.77 m³	17870.89 m³	-14.30 b	Unpaid		
	3972024978	Home Water Meter	50.27 L	18452.37 L	251.20 b	Active		

Requested IoT Devices

Device	Request ID	Device ID	Request Time	Status
	18	2625375833	2024-12-25 15:21:04	Pending

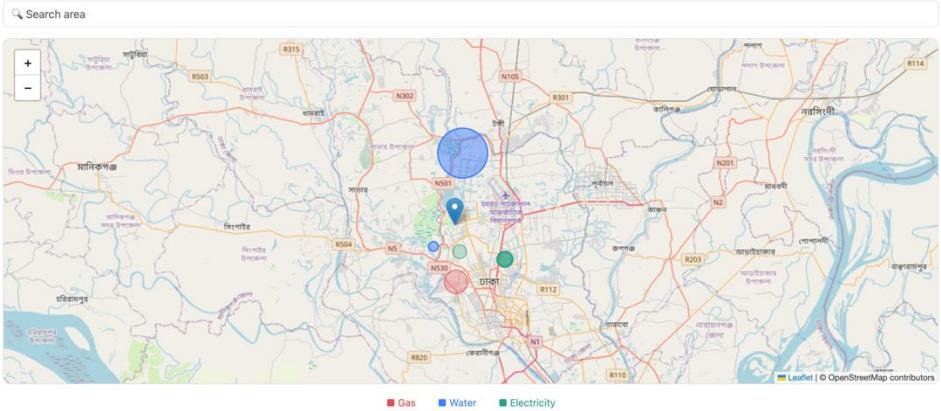
Links

Contact

Dashboard



Outage Map



Outage List

🔍 Search area

Type	Area	Outage	Start	End	Status	Range
	Road 4, Mohammadia Housing Society, Mohammadpur, Dhaka, Dhaka Metropolitan, Dhaka District, Dhaka Division, 1207, Bangladesh	Gas Outage	02:15pm (27-Dec-2024)	08:19pm (29-Dec-2024)	Active	1.2km
	Begunbari, Melartek, Savar Subdistrict, Dhaka District, Dhaka Division, 1916, Bangladesh	Water Outage	04:20pm (26-Dec-2024)	05:20pm (31-Dec-2024)	Active	0.5km
	Naya Nagar, Dhour, Dhaka Metropolitan, Dhaka District, Dhaka Division, 1231, Bangladesh	Water Outage	04:23pm (26-Dec-2024)	04:23pm (26-Dec-2024)	Active	2.5km
	Wireless Road, Chairman Bari, Gulshan, Dhaka, Dhaka Metropolitan, Dhaka District, Dhaka Division, 2467, Bangladesh	Electricity Outage	04:18pm (25-Dec-2024)	04:18am (26-Dec-2024)	Active	0.8km
	Road 20, Ahalia, Uttara, Dhaka Metropolitan, Dhaka District, Dhaka Division, 1231, Bangladesh	Gas Outage	02:18pm (25-Dec-2024)	08:21pm (27-Dec-2024)	Resolved	2.0km
	Habuler Pukurpar, Ahmed Nagar, Dhaka, Dhaka Metropolitan, Dhaka District, Dhaka Division, 1916, Bangladesh	Electricity Outage	04:22am (25-Dec-2024)	04:22pm (25-Dec-2024)	Active	0.7km

Outage Map



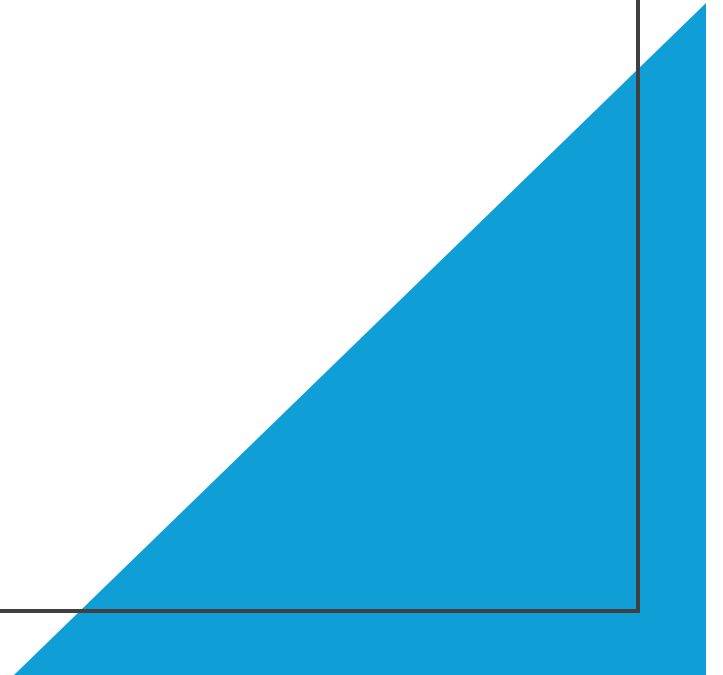
Recharge History

Device	ID	Label	Type	Amount	Time	Date	Invoice
🔥	2040622062	Home Gas Meter	Gas	500.00tk	11:53pm	02/04/2025	📄
⚡	1239009899	Emrul Electricity Meter	Electricity	1,000.00tk	04:26pm	25/12/2024	📄
🔥	2040622062	Home Gas Meter	Gas	500.00tk	04:14pm	25/12/2024	📄
🔥	2040622062	Home Gas Meter	Gas	500.00tk	04:13pm	25/12/2024	📄
💧	3972024978	Home Water Meter	Water	500.00tk	03:34pm	25/12/2024	📄
🔥	2040622062	Home Gas Meter	Gas	650.00tk	03:34pm	25/12/2024	📄
🔥	2040622062	Home Gas Meter	Gas	650.00tk	03:29pm	25/12/2024	📄
⚡	1239009899	Emrul Electricity Meter	Electricity	500.00tk	03:29pm	25/12/2024	📄

Recharge History



Now What is AND Why
LoRaWAN?

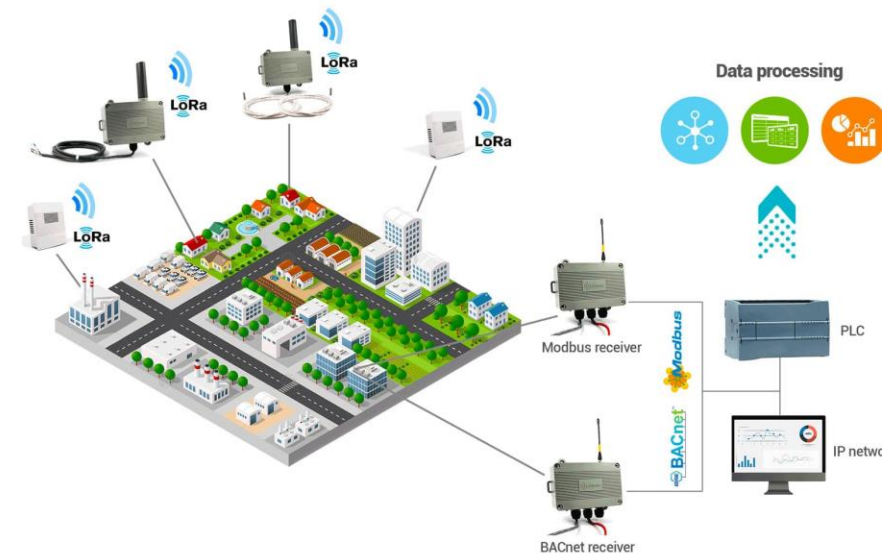


What is AND Why LoRaWAN?

LoRa, short for **Long Range Radio**, is a wireless communication technology designed for low-power, long-range data transmission, primarily used in IoT and M2M applications. Unlike Wi-Fi or Bluetooth, LoRa uses **Chirp Spread Spectrum (CSS)** modulation, which spreads a narrowband signal over a wider channel bandwidth to achieve remarkable range and resilience against interference.

LoRaWAN is the networking protocol built on LoRa that:

- Enables devices to communicate over long distances (10-15km) with minimal power consumption
- Provides ultra-low energy consumption allowing devices to operate for up to 10 years on a single battery
- Implements secure communication protocol with AES-128 encryption for end-to-end data protection
- Operates on license-free spectrum, eliminating ongoing frequency licensing costs
- Supports thousands of devices per gateway with minimal infrastructure
- Enables secure bi-directional communication for large-scale IoT deployments





Applications of LoRa Worldwide

- **Indonesia:** Singapore-based Sindcon is retrofitting 50,000+ smart meters in Jakarta with STM32WLE5 LoRaWAN microcontrollers, enhancing remote meter reading in diverse environments while providing 10-year battery life. ([The GPS Time, 2023](#))
- **Singapore:** Sindcon achieved 90%+ data success rates and up to 7-year battery life with their LoRaWAN smart meters, significantly improving utility management efficiency. ([Smart Energy, 2025](#))
- **Switzerland:** Elvexys and Oiken implemented LoRa-enabled sensors for real-time power grid fault detection, reducing deployment costs by 90% compared to traditional methods. ([Semtech, 2021](#))
- **France:** CAHORS Group's Sentinel® line fault detection solutions use LoRaWAN to monitor power lines, enabling immediate fault identification and preventing costly outages. ([Semtech, 2019](#))

Proven Evidence of LoRa Success in Bangladesh

Chattogram WASA Pilot:

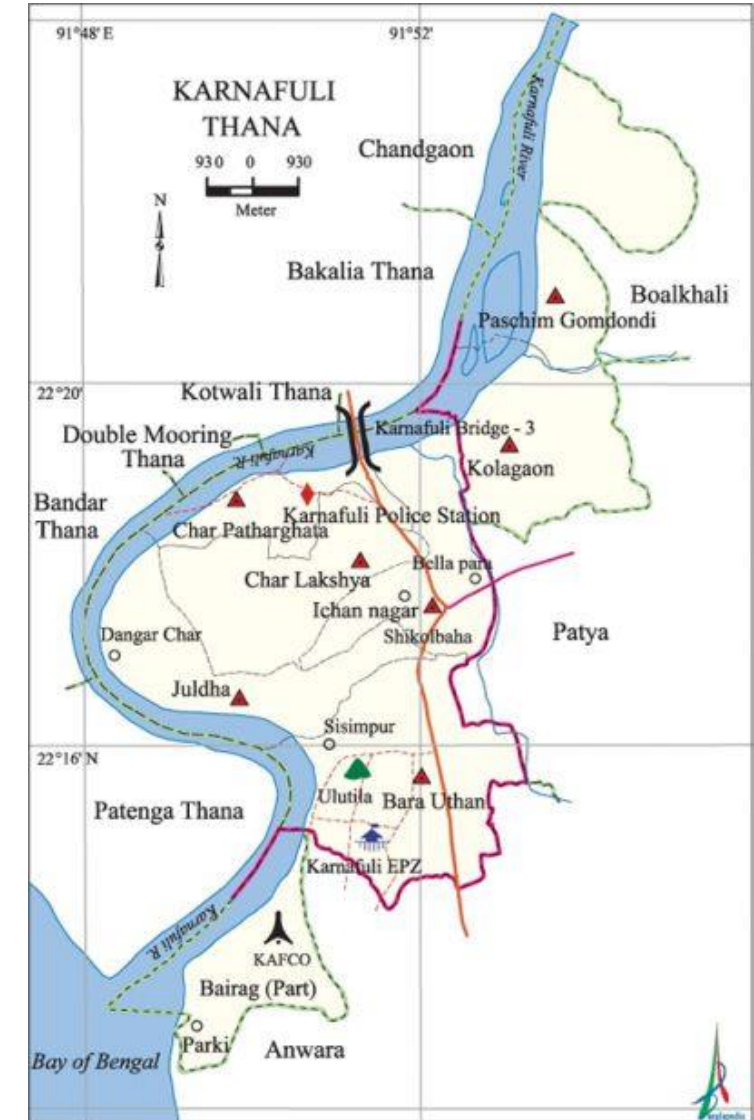
- "3,000 Pure Ultrasonic Digital meters (LoRa)" already implemented ([The Business Standard, 2022](#))
- "With digital meters no one can tamper with it nor can steal. Also all the bills will automatically come to their server." ([Md Samsul Alam, Deputy Managing Director, Chittagong Wasa – Independent TV](#))

Karnaphuli Water Supply Project:

- Successfully "reduced non-revenue water to 10%" ([The Business Standard, 2024](#))
- "The Karnaphuli Service Area... with DMA system providing uninterrupted supply to 46,000 connections" ([The Business Standard, 2024](#))

WASA Official Assessment:

- "Hopefully, if the project is successfully implemented, water wastage will be prevented and Chattogram Wasa's revenue will increase." ([Maksud Alam, Chief Engineer, The Business Standard, 2022](#))





Transforming Bangladesh's Utility Management with LoRaWAN

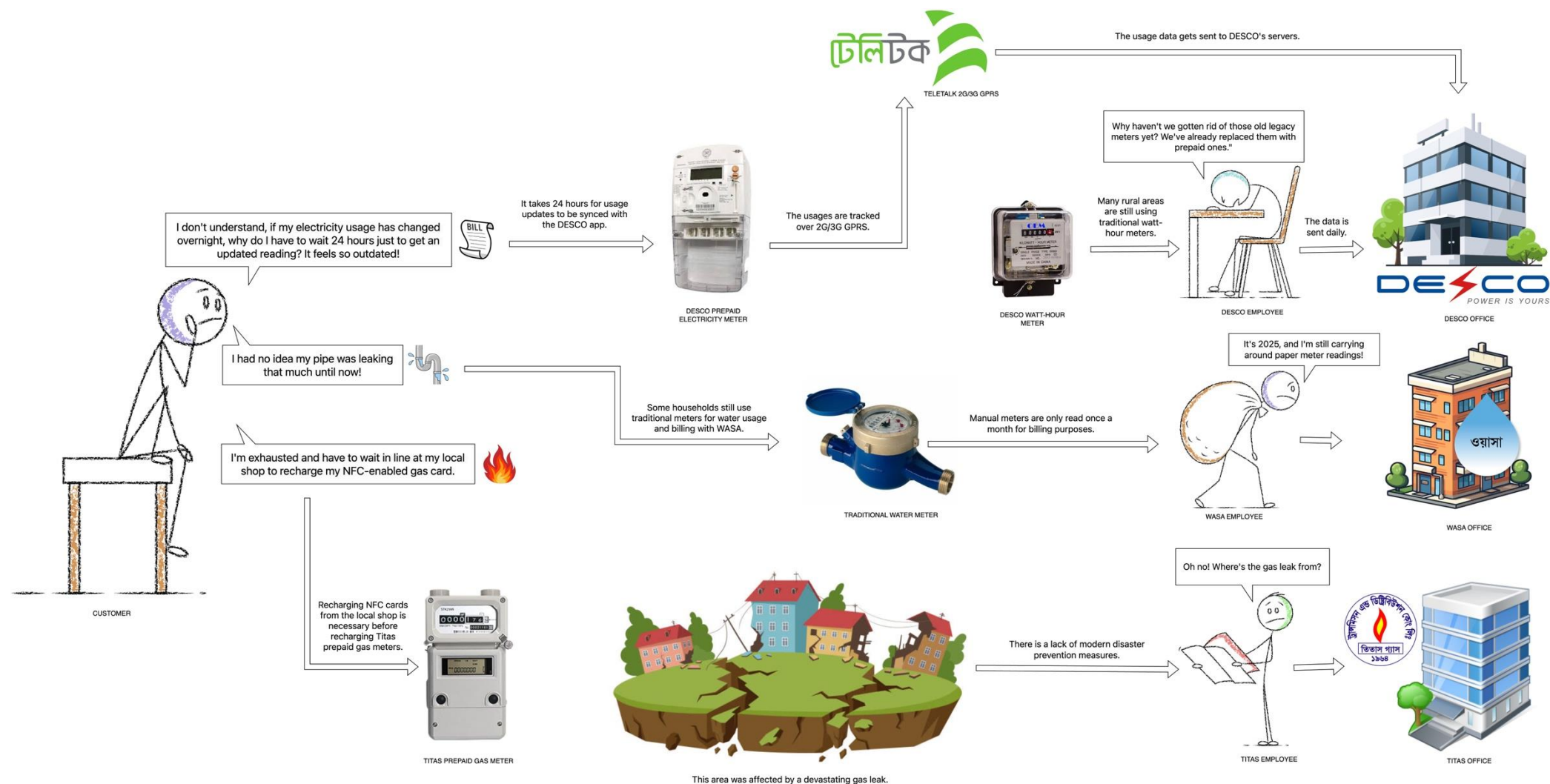
Current Challenges

- **5.72%** losses in electricity. ([DESCO Annual Report 2023](#))
- Limited effectiveness of current GSM-based communication systems

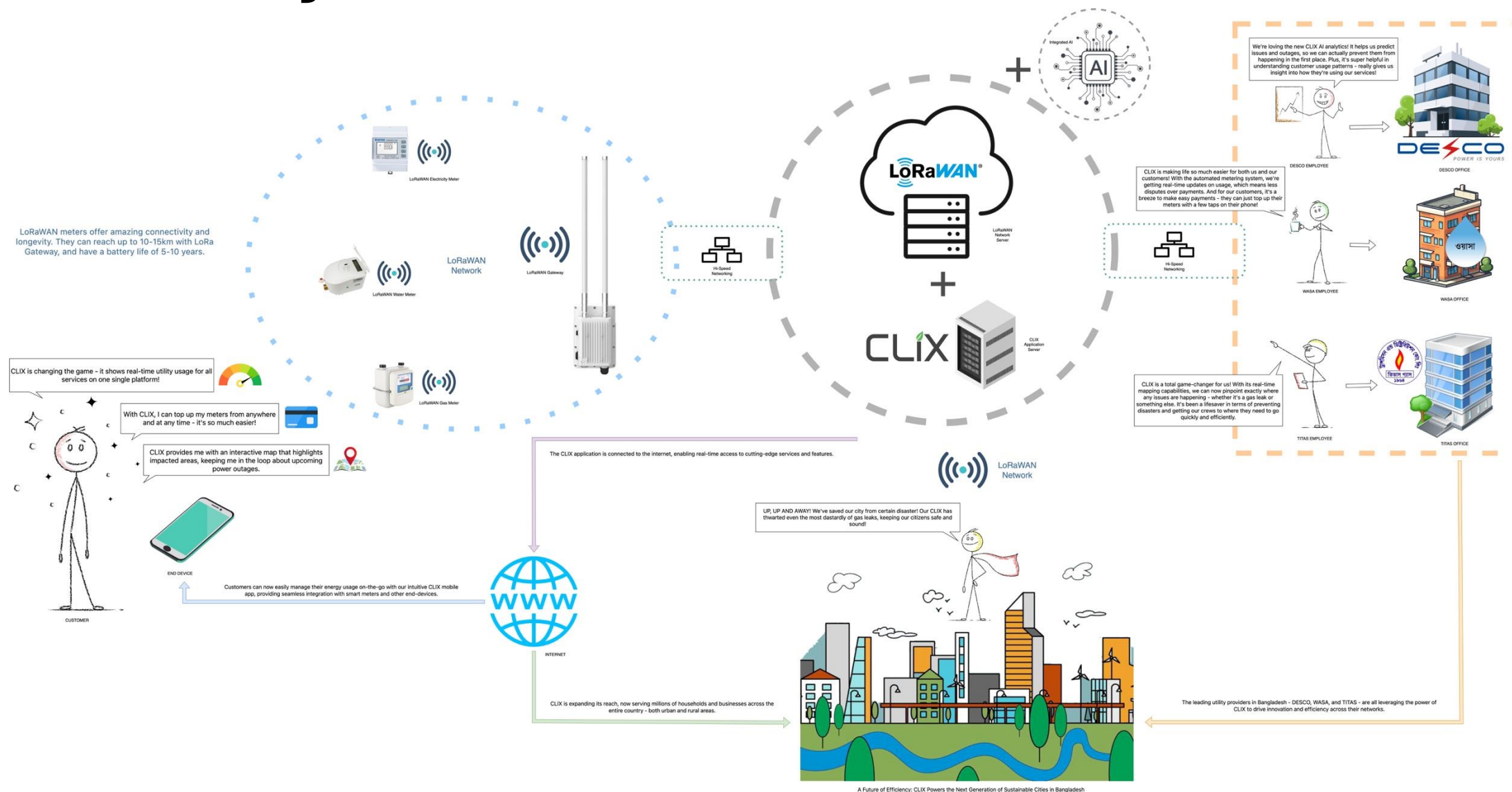
LoRaWAN Solution

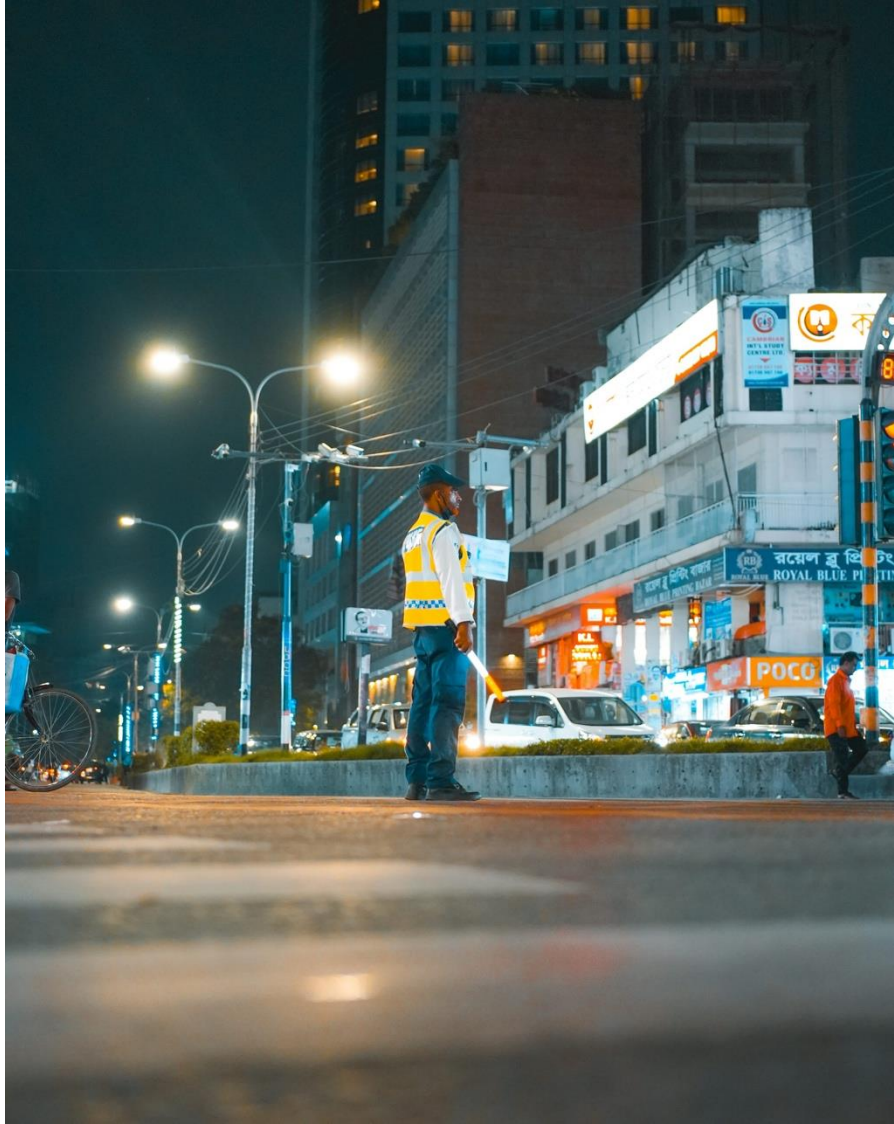
- **Long-range connectivity** ideal for urban and rural deployment
- **Battery life of 7-10 years** reducing maintenance costs
- **90%+ data transmission success rate** as proven in Singapore ([Smart Energy, 2025](#))
- **Cost-effective deployment** (up to 90% savings vs. traditional methods)
- **Real-time monitoring** enabling immediate fault detection and prevention

As Is System



To Be System





Market Size & Opportunity

Target Market:

- 40M+ households across Bangladesh
- 500K+ commercial and industrial entities

Addressing Critical Infrastructure:

- Water supply networks serving major urban centers
- Electricity distribution covering 3.5 crore connections
- Gas utility systems with documented 7.67% losses

Corruption Elimination:

- Evidence that "meter inspectors in collusion with WASA officials show less reading and provide illegal connections in exchange for illegal financial benefits" ([The Business Standard, 2022](#))
- CLIX removes human intervention points that enable corruption

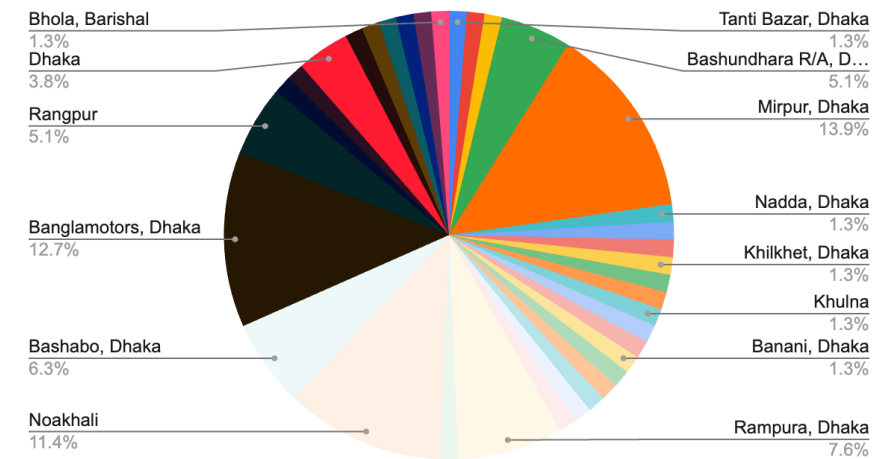
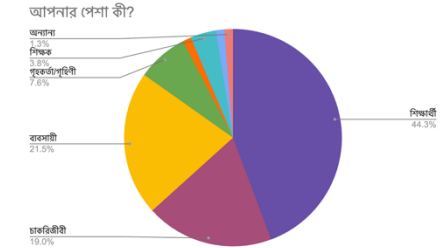
Survey Analytics

We collected **79** surveys (**26 online, 53 offline**). CLIX received "**Highly Helpful**" reviews from **72.07%** of respondents, "**Helpful**" from **23.00%**, "**Neutral**" from **4.65%**, "**Not Helpful**" from **0.17%**, and "**Not Helpful at all**" **0.09%** of respondents.

Feature4	Highly Helpful	Helpful	Neutral	Not Helpful	Not Helpful at all
Emergency gas leak alert at night	88.60%	10.10%	0.00%	0.00%	1.30%
Real-time electricity bill tracking	67.10%	29.10%	3.80%	0.00%	0.00%
Water leak alert when away from home	70.90%	27.80%	1.30%	0.00%	0.00%
One-click bill payment via mobile	74.70%	24.10%	1.30%	0.00%	0.00%
Preventing payment for others' illegal connections	74.70%	24.10%	1.30%	0.00%	0.00%
Load-shedding timing notifications	75.90%	20.30%	3.80%	0.00%	0.00%
Integrated system for electricity, gas, water	65.80%	27.80%	6.30%	0.00%	0.00%
Tech & job opportunities from smart systems	72.20%	24.10%	3.80%	0.00%	0.00%
Accurate billing with usage record	75.90%	17.10%	6.30%	0.00%	0.00%
Disaster-time live utility map	70.90%	25.3%	3.80%	0.00%	0.00%
Usage-based saving recommendations	69.60%	24.10%	5.10%	1.30%	0.00%
Adoption of global smart utility models	73.40%	13.90%	12.7%	0.00%	0.00%
Prior notification of utility personnel arrival	65.80%	22.80%	10.10%	1.30%	0.00%
Knowing which appliances use the most electricity	67.10%	31.60%	1.30%	0.00%	0.00%
Leaving reliable systems for future generations	68.40%	22.80%	8.90%	0.00%	0.00%
Average	72.07%	23.00%	4.65%	0.17%	0.09%

Occupation: 44.3% Student, 21.5%
Businessman, 19.0% Service holder,
7.6% Householder, 3.8% Teacher & 3.8%
Other

Age: 18-25: 35.4% (28 people), 26-35: 25.3% (20 people), 36-45: 19.0% (15 people), 46-55: 12.7% (10 people), 56-65: 6.3% (5 people) & 66+: 1.3% (1 person)





Implementation Plan

Comprehensive Project Lifecycle (36 months):

1. **Research Phase (3 months):** Needs assessment, regulatory compliance research
2. **Design Phase (4 months):** System architecture, UI/UX design, security protocols
3. **Development Phase (6 months):** Core components, integrations, analytics engines
4. **Testing Phase (3 months):** Quality assurance, performance testing, security validation
5. **Pilot Deployment (3 months):** 5,000 households in selected urban area
6. **Full Deployment (12 months):** Phased rollout to urban, suburban, and rural areas
7. **Maintenance & Enhancement:** Ongoing system support and improvement

Key Milestones:

- Urban Deployment (Month 25): 100,000+ connections in major cities
- Full Deployment (Month 31): Nationwide coverage of target areas

Sustainability & Revenue Model

Customer-Based Revenue: Utility providers will share a portion of their revenue with CLIX.

Enterprise-Based Revenue: CLIX will provide advanced monitoring systems to enterprise users. These users will pay utility providers, and CLIX will receive a share of this revenue. Additionally, CLIX will earn income through subscription fees.



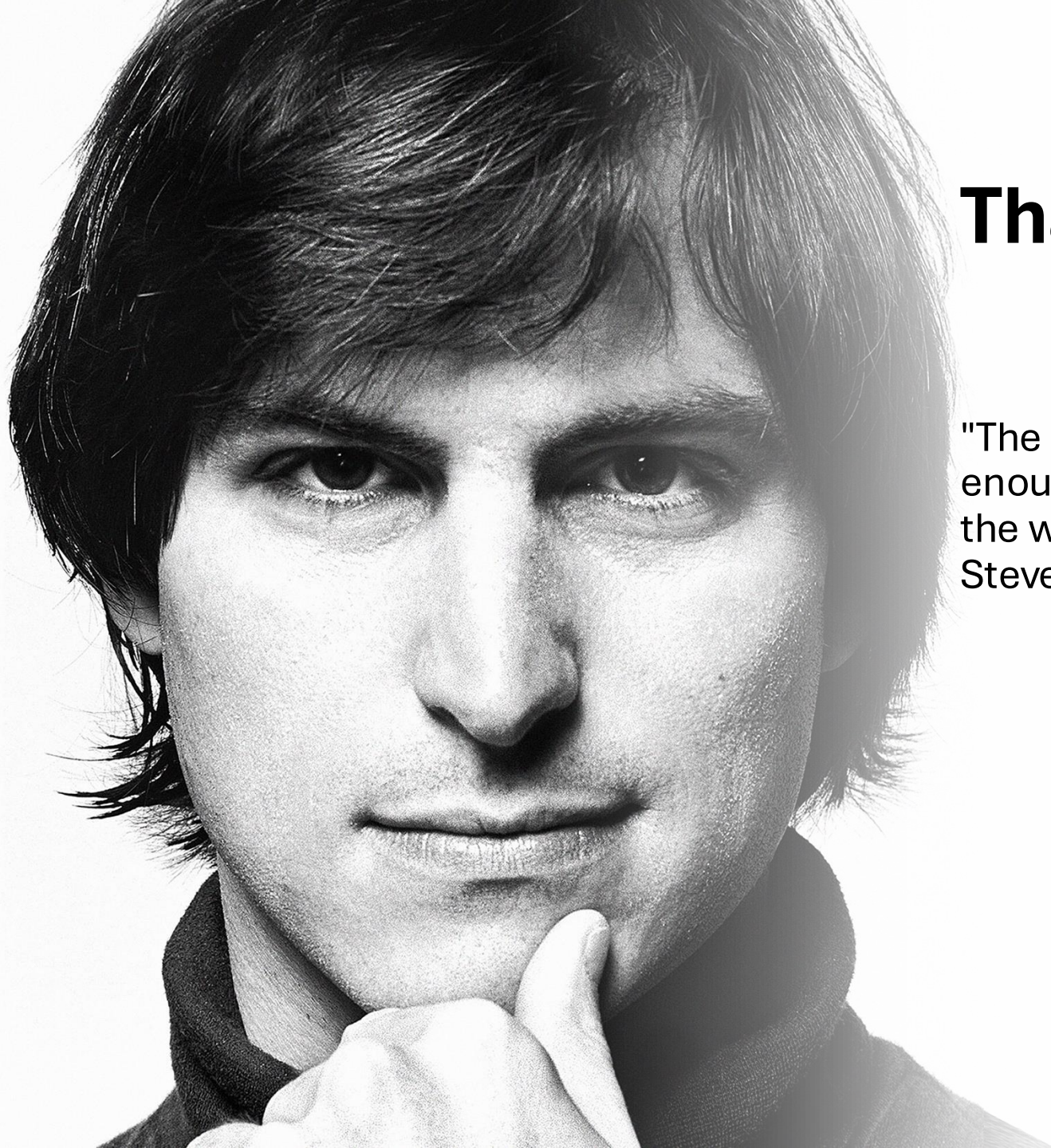
Call to Action

Why Invest in CLIX:

- Building on proven success of Chattogram WASA's smart meter pilot
- Comprehensive implementation plan with clear milestones
- Multiple revenue streams ensuring long-term sustainability

Key Impact Quote: "We are losing more than Tk45 crore in revenue every year [just in Chattogram]. WASA officials hope that digital meters can prevent this wastage and corruption." ([The Business Standard, 2022](#))





Thank You

"The people who are crazy enough to think they can change the world are the ones who do." - Steve Jobs