How CILE transforms water management through smart solutions

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Water production and distribution is not a too sexy business
How to make it a true « LONG FLEUVE TRANQUILLE »

William De Angelis,
Top5 Finalist CDO of the Year in BE
6.a DC water/sanitation, expand capacity support

6.1 Achieve access safe drinking water for all

6.2 Access equitable sanitation / hygiene

6.3 Improve water quality

6.4 Increase water-use efficiency

6.5 Implement IWRM at all levels

6.6 Protect & restore water related ecosystems

6.b Support participation local communities water
CILE at a glance

Private LORAWAN network using the water tanks for the transmission
LoraWAN performance

Key Points

**Water Meter**
- Battery Lifetime (15 years)
- Payload (Meter + Alerts)

**Public sector**
- Cost Efficiency
- Deployment
The Smart Initiatives

Transforming Water Network Operations to become more Sustainable

1. SMART LEAK
   Datalake

2. SMART GRID
   Smart Rollout
   Smart Billing
   Smart Conso ($$$)

3. SMART METER
4. SMART CITIES
   IOT use cases and service catalogue

Water network performance 73.5%
Using the CISCO Technologies

- Actility Cloud Services
- HTTPS/MQTT
- Azure Cloud Services
- API
- SAP Cloud
- AI Services for prediction

CILE OT Network → Actility Cloud Services → HTTPS/MQTT → Azure Cloud Services → API → SAP Cloud
The impact on the organisation and the market

<table>
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<tr>
<th>GOALS</th>
<th>ACTIONS</th>
<th>BENEFITS</th>
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<tr>
<td>Identify Leaks for high water users (such as buildings, swimming pools, agricultural sites and hospitals) including concealed leaks</td>
<td>Deploy DMA-Connected water meters at strategic end points Deploy consumption-monitoring capability for high-usage customers known through historical billing data Plug leaks for high usage customers and provide opportunity to drive behavioural changes</td>
<td>Improve billing efficiency Increase visibility Reduce environmental and social impacts Reduce financial burden</td>
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<td>Reduce energy costs through remote monitoring and better control of power usage at water assets (including pumps, reservoir, storage, water and waste water treatments plants)</td>
<td>Use LoraWAN IoT technology to complement SCADA systems by connecting LoRaWAN Enabled sensors (including pressure reduction valves, smart valve controls, water quality probe, flow monitoring systems and water level sensors)</td>
<td>Manage water use more efficiently Reduce energy and carbon footprints Better balance supply and demand Create digital twins of water infrastructure</td>
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<tr>
<td>Empower households to better manage their water consumption and detect network leaks and water leaks</td>
<td>Roll out automated meter reading (residential water metering)</td>
<td>Support water savings via water protection programmes Improve customer experiences Support water strategy programmes Reach sustainable development goals</td>
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<td>Leverage the IoT LoRaWAN network to deploy third-party use cases and scale up</td>
<td>Use LoRaWAN network roaming capabilities to support new use cases (such as city networks and planning, other utilities and agricultural irrigation) Enable versatile smart city connectivity for parking, smart street lighting, people counting, smart waste management, asset monitoring and other use cases</td>
<td>Amortise the cost of the LoRaWAN network by reaching out to new users Create more collaboration between city agencies Enable smart city collaborations with local governments and/or with utilities that share smart city infrastructure Leverage LoRaWAN versatile connectivity and device offering to enable collaboration resulting in a lower total cost of ownership</td>
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The major difficulty we encountered:

No business cases could be produced with ROI restricted by the high cost of data Transmissions by local TELECOM providers.

Our innovative architectural concept resolved those challenges:

We own our IOT telecom network using the water tanks for the transmission.
SmartCities UseCases - Cities Objectives

- Air Quality monitoring
- Waste Management
- Parking Management
- Light Control
- Outdoor Air Quality monitoring
- Water Quality Control
- Asset Tracking
- Smart Metering
How NTT Smart Solutions works

Data sources 
**collect data**
With LoRaWAN.

This data is just noise and complexity.

Big data engine curates and calibrates data.

Data analytics transforms data into valuable assets.

We create Real-time alerts

We discover insights and trends

We generate predictive analytics

Outcomes presented **through a display layer**.
NTT Truth In Sustainability Solution

Enables measurement, reporting and data driven optimization actions to achieve environmental sustainability goals faster

Quick Start to Baseline Carbon Footprint

Ease of Use and Compliance Reporting

Data Driven Decision Capabilities

Service Driven

Ease of Integration

Flex and Expand

Enhance Efficiency

Measure

Insights/Report

Optimize

What-if Analysis

CO2e

Emission factors

Azure, AWS, NTT, hybrid, On Prem

Sustainability and other use cases

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