



Digitalization for water- utilities: Antwerp case

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Hydroko NV

- Flemish SME , est. 1983, Kapelle-op-den-Bos
- Distributor of hardware for water distribution networks and house connections
- Need to differentiate from typical (large) distributors
- **Vision:**
 - **Develop, Assemble & Distribute unique innovative products**
- HydroKonekt Classic Lead-free Valve (2005)
- HydroKonekt Smart (2014)

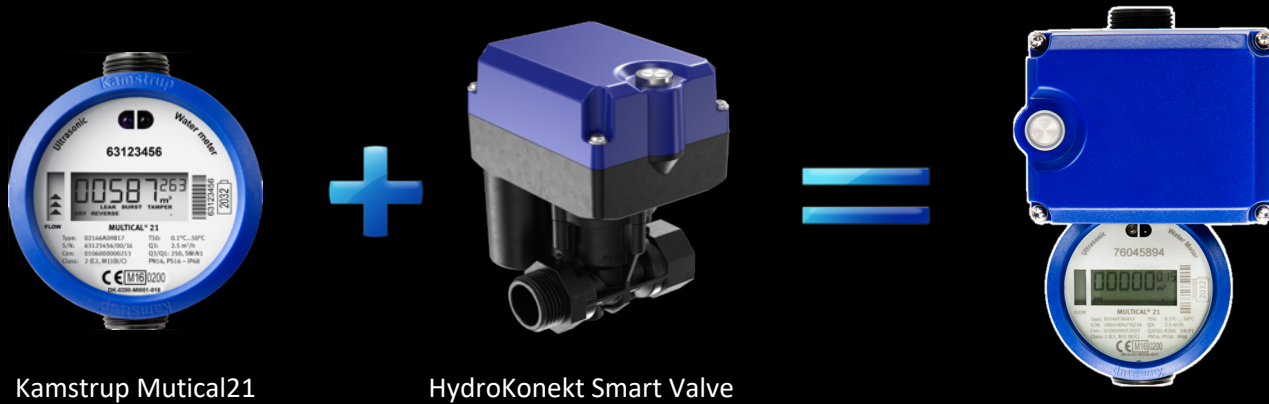


- **Main Business Drivers Smart Metering Project**
 - **High OPEX contract management.**
 - **Non Revenue Water**
 - **Strong drive to become Service Oriented Organisation**
 - **Large scale Meter replacement program was imminent**

➔ Smart Metering Solution needed enabling a positive ROI in the Long Term.

- Positive ROI was mandatory and drives solutions requirements
 - Remote controlled valve
 - 16 years of battery life-time.
 - Data-granularity ≤ 1 day.
 - Data latency ≤ 1 day

- **Development of IOT (valve) solution**



- **16 years battery life-time**
- **Daily & Hourly Consumption Profiles**
- Lead-free solution
- Plug & Play
- **High accuracy over entire lifetime**
- **Integrated Alerts (e.g. leakage)**
- Fraud resistant
- IP68 rating

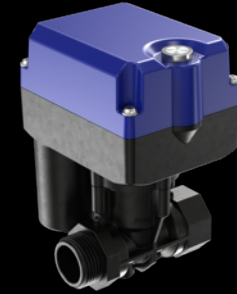
Remote Controlled Valve



HydroKonekt Classic valve



Stepper motor; Gearing mechanism;
Electronics



Remote Controlled Smart Valve

- **Flow control**

- **Stepper motor**
- 40.000 steps to bridge 20 mm. → 1 step = 0,5 μm
- Very accurate positioning

→ Pressure independent flow control via closed loop regulation.

→ Minimum flow regulation



Valve Membrane

Kamstrup Sigfox Embedded

Development by Kamstrup in an open collaboration with Hydroko to be able to meet Antwerp expectations.

- Multical21 (DN15, DN20)
- FlowIQ3100 (DN15 → DN100)
- Up to 16 years Battery lifetime
- Daily Consumption Data
- Real-time Alerting
- Sigfox Class0



Key technical Design Choices

- **Communication Protocol: Sigfox**
- **Battery : Li-Ion non-rechargeable**
- **State-of the art Cyber-security**
- **Privacy By design**
- **One integrated data-platform**

Key Learnings

- **Don't believe everything you read.**
 - Stay critical and test!
- **Legal aspects (GDPR, tendering-rules)**
 - Data as a Service
- **Collaboration and open-innovation is the key to success.**
 - Hydroko <-> Kamstrup
 - Hydroko <-> water-link
- **Start assessing business impact asap.**

Project Update – Added Value of data

- Installed base
- Connectivity
- Data examples
- Max-flow
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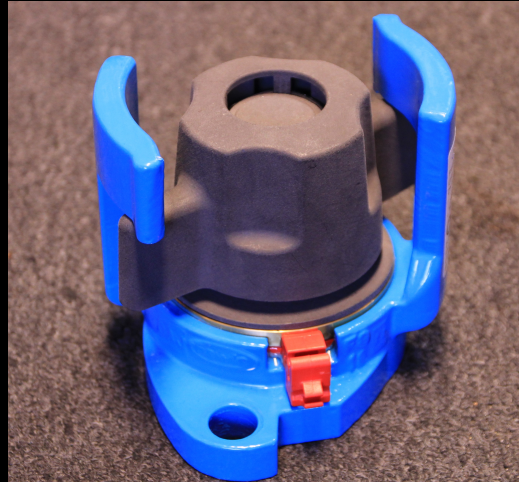
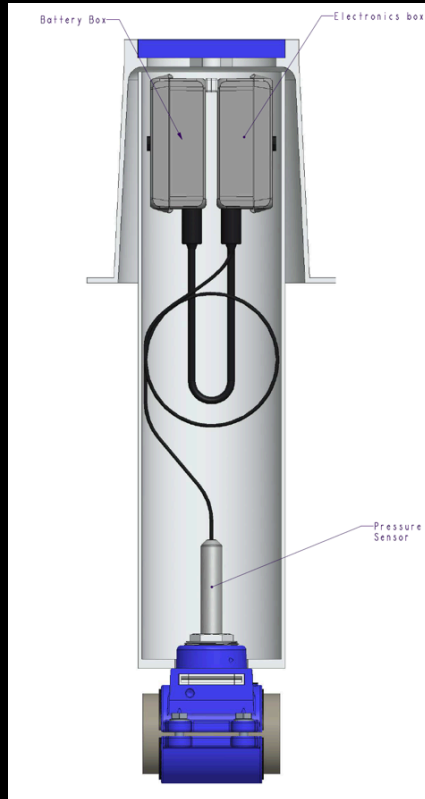
New Business Models



- Increase efficiency – Reduce Opex
- Alternative for cutting of water
 - Flow Regulation
- **Increase Customer Engagement**
 - Consumption awareness
 - Pre-paid water
 - Leak detection + automatic shut-off
- Asset Management
 - Non Revenue Water
- **Active & Passive Consumption Control**
 - Variable pricing
 - Flow Regulation
- **Smart Water-Grid**
- ...

IOW

Flush Automation



MORE TO COME...

