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Reducing Leakage Losses In Water Supply

AN ASIAN CASE STUDY

Overview

1. Client Profile
2. Problem Statement
3. Xylem Solution
4. Outcome

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Client Profile – Malaysian Utility

- Municipal water utility provider for a large Malaysian state

- Key Statistics:
  - >3 million population served
  - >6000km of water mains ranging from 300mm to 2200mm
  - Area of coverage ~8000km^2
  - High non-revenue (NRW) in 2017 at 33.3%

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Problem Statement

- Utility using conventional manual methods of identifying leaks and bursts → Leaks/bursts especially in remote areas can run for a long time before discovery → **Need for quicker response to minimize leak runtime and disruption**

- Leaks were noticed to be recurring on the same pipelines → **Greater sight of hydraulic network behavior needed for root cause identification and rectification**

Overarching Objective: Identify leaks earlier and more cost-effectively, reduce NRW, improve public reputation by minimizing event signature

Xylem Solution – Water Loss Management

- Utilized pressure transient and acoustic monitoring components of Xylem's Water Loss Management solution

- Real-time monitoring of acoustic energy and pressure readings in pipelines allows for:
  - 24/7 leak detection and alerting
  - Monitoring of pressure behavior providing early warning of damaging transients so that action can be taken before pipe failure

- Program started in 2018 with deployment of 500 sensors that has since grown to >1600 sensors

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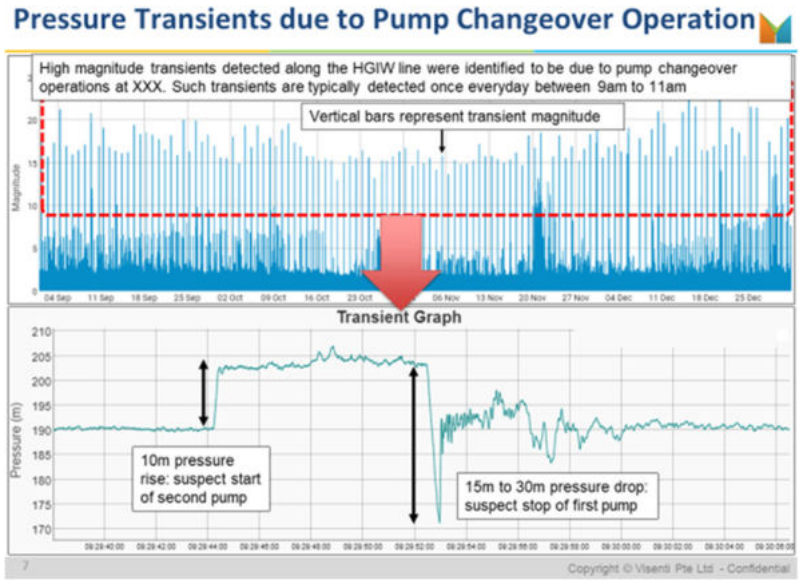
Xylem Solution – Water Loss Management

- Leak detection
  - Unique solution combining pressure and acoustic monitoring to generate leak alerts
  - Automated process supervised by team of analysts 24/7
  - Helps utility efficiently prioritize and direct ground crews for leak response

- Pressure transients analysis
  - Analysis helps identify damaging transients and localize potential sources
  - Identified sources helps utility design interventions that allow them to manage the transient magnitudes and reduce stress on pipeline infrastructure

*pictures are for illustration only and not related to project



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Outcome

- Leaks being identified at a rate of 2 per week → hundreds of leaks found and repaired since start of program

- Pressure transient data has helped utility better optimize pumping schedules and changeovers to reduce likelihood of pipeline damage and prolong asset lifespans

"As a public utility, we wanted to reduce bursts and improve our customer service, and the continuous monitoring solution is helping us achieve those goals."

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Thank you