

SEVERN

TRENT

SERVICES

Innovative Water Metering Systems

**Presented by Patrick Egan
Severn Trent Services International**

23rd February 2010

Contents

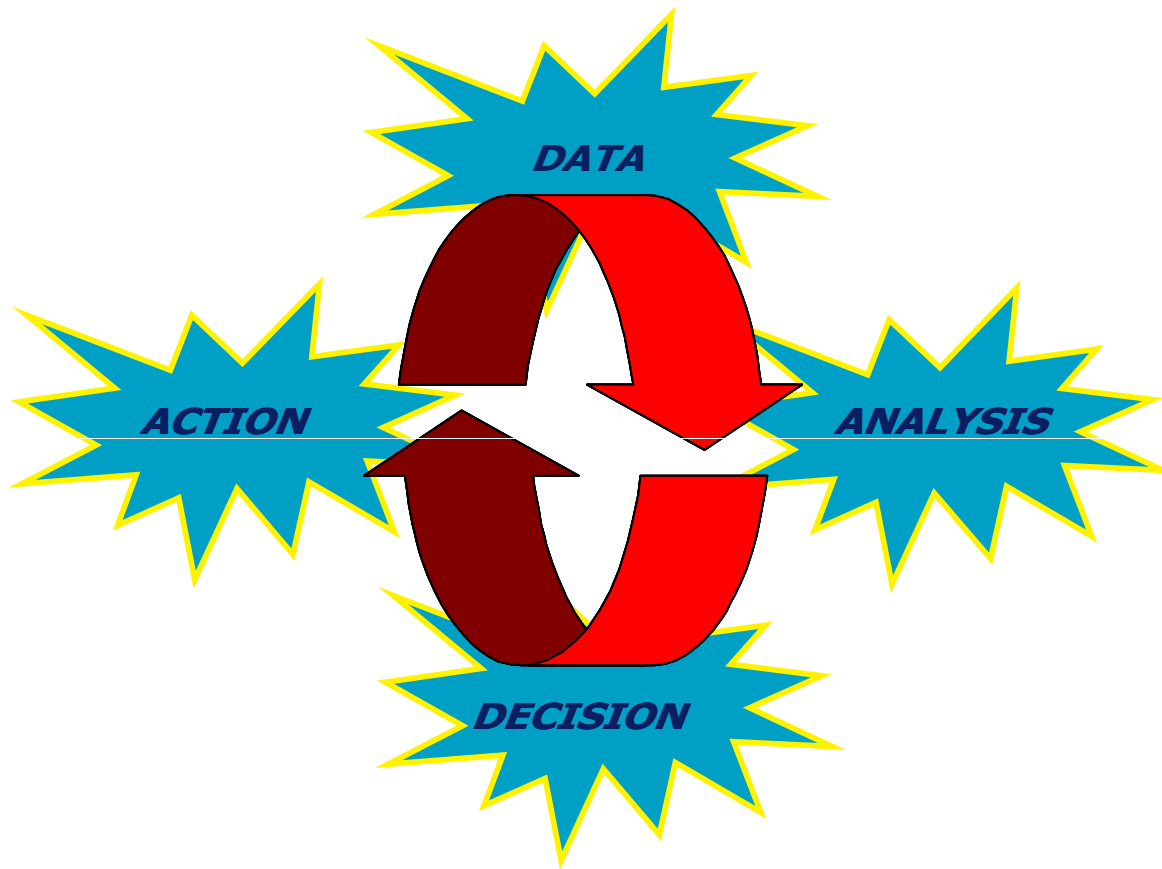
1. Objectives of Presentation
2. Data Integrity
3. Common Meter Issues
4. Flow Meter Solutions and Design
5. Data Monitoring
6. Prioritisation of Leak Detection
7. Case Study 1 – Leak Reduction
8. Case Study 2 – Revenue Increase
9. Conclusion
10. Any Questions

Objectives of Presentation

Show how Automatic Meter Read (AMR) technologies can assist in:

1. Managing District Meter Area (DMA) leakage;
2. Reducing operational costs; and
3. Increasing revenues.

The Importance of Data Integrity



- Review the right **DATA**
 - do the right **ANALYSIS**
 - then you will make the right **DECISION**
 - and take the right **ACTION**
- *Performance will IMPROVE*

Flow meters provide fundamental operational and revenue data to the water company

Common Meter Issues

From UK and international experience, meters are often:

- Oversized - same size as installation pipe
- Poor installation – insufficient upstream and downstream straight lengths
- Old and in poor condition - causes inaccuracy / under-read
- Stopped or broken – not discovered until next meter read
- Tampered – meter slowed causing under-read
- Wrong Class – unable to measure low flows
- Manual data transfer – handling and typing errors
- Difficult to access

Latest Automatic Meter Reading Technology and Data Monitoring will Resolve these Issues

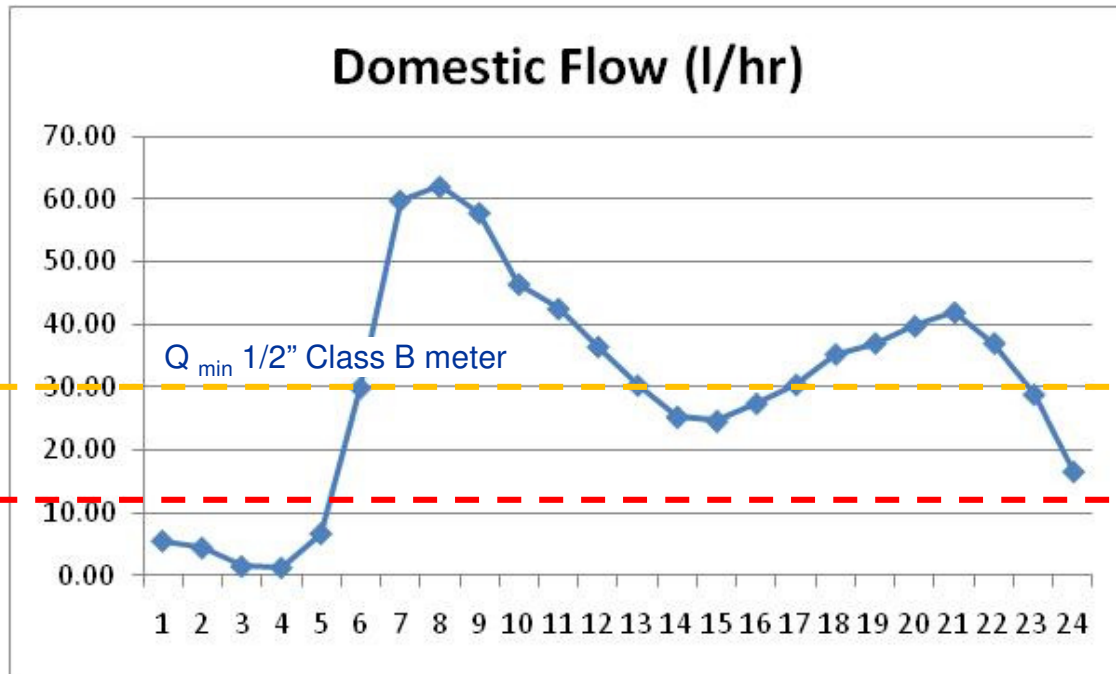
Meter Issues – Example 1



Size and Installation:

- Meter oversized (300mm)
- Insufficient straight lengths
- Meter damaged by air in pipe
- Under-reads by 9% (7,000m³/month)
- Significant revenue loss
- Contributes to NRW

Meter Issues – Example 2



Wrong Meter Class:

- Over 2 million properties
- Class B meters installed
- Under-reads low flows
- 17% of daily demand unmeasured
- Significant revenue loss
- Contributes to NRW

Class B 1/2" Domestic Meter		
<12 l/hr	100%	under read
12 – 30 l/hr	15%	under read
30 – 120 l/hr	5%	under read

Meter Issues – Example 3



Remote Site



Locked Premises

Difficult Access:

- Remote meters
- Locked premises
- Apartment blocks
- Aborted visits
- Significant meter read costs
- Estimated readings

Flow Meter Solutions

Purpose	Type	AMR	Severn Trent's Track Record
DMA Supply	Electro-Magnetic	Internet	800 installed on 300 UK public sector sites
	Mechanical	Internet	4,500 installed on Severn Trent Water DMAs
Large Industrial (Revenue)	Electro-Magnetic	Internet	800 installed on 300 UK public sector sites 45 installed in Kedah, Malaysia
	Mechanical	Internet	500 installed within Severn Trent Water
Commercial and Domestic (Revenue)	Fluid Oscillation	Touchpad Radio	1 million in Severn Trent and Gulf using touchpad and some radio
	Mechanical	Radio	Successful trial on STW apartment block; due for roll-out across difficult access sites