

You Probably Don't Need Real Time Data



Contact us

T 02380 111 420

E info@i2owater.com

2 Vancouver Wharf, Hazel Road

Woolston, Southampton, SO19 7BN, United Kingdom

www.i2owater.com

This thought piece is designed to encourage senior managers to ask the right questions and ensure that the cost of real-time is justified. It often isn't.

When digital watches first became available it was common for them to beep every hour. A gentle reminder of the passing of time. That doesn't seem to happen anymore. Why?

If you had a watch that chimed the quarters, you'd probably find it amusing for a short time and then rather disruptive. If your watch read out the time to you every minute, you would likely set it to silent or throw it out if that wasn't an option. You certainly wouldn't want it to tell you the time every second.

What you want is a timepiece that you can look at when you need to know the time. And so it is with all useful information.

Increasingly our clients are indicating that they want (near) real-time data. They want their watch to tell them the time more frequently.

Our questions are:

- Why?
- What are you going to do with it?
- What are the use cases for real-time data?

The answer all too often is: I don't know why exactly but it will be there when I need it. They are perhaps thinking of the watch. But the comparison isn't valid. If the cost of transmitting, collecting, bringing together, storing, and manipulating data were zero or low (as for a watch) then real-time would not be a problem. It is true that many of these costs are reducing, some are already negligible. If mains power is available then the cost of real-time data may be marginal, although this doesn't mean that it is necessarily justified. But mains power isn't available out in the network, and people don't have unlimited time for supervision.



BATTERIES

Most loggers deployed on the water distribution network are battery powered. The cost of batteries is around 1/4 of the cost of the logger. And once a site visit is added in this can more than double to around 1/2 of the cost of the logger. Using external battery packs to reduce the number of site visits has the added inconvenience of housing them in places where space can be restricted.

A battery is like a water bottle in a desert: how long it lasts depends on how fast you drink it.

So it is important to use battery power sparingly and only when it's needed. It is not a good idea to use battery power to support a system that is:

- Always on (even having to 'listen' for an incoming 'call' consumes power)
- Frequently sending back data (each use of a modem consumes power)



SUPERVISION

The water industry runs the risk of drowning in data and drowning in alarms.

It simply isn't going to be possible, for a human, to monitor the number of data streams that will be available or to review all the alarms they generate.

The control room has enough of these already without adding to their burden.

Given this, the best answer is a smart logger. That is to say one that communicates only when it knows that the information will be useful.

DROUGHT: WHY WAIT TILL IT'S TOO LATE?

Regimen	How it works	Problem
Infrequent regular communication	Daily dial-ups	<ul style="list-style-type: none"> Data not frequent enough
Frequent regular communication	Dial-ups every 5 minutes	<ul style="list-style-type: none"> Battery runs out fast
Software alarms	Alarms are set and triggered in backend software rather than on the logger	<ul style="list-style-type: none"> More alarms than is useful Battery runs out fast
Simple alarms	Logger dials up only when simple high/low threshold parameters are breached	<ul style="list-style-type: none"> More alarms than is useful Lack of data post-alarm
Decaying alarms	Logger dials up when threshold parameters are breached, and more frequently than normal thereafter until it returns to default dial-up intervals	<ul style="list-style-type: none"> More alarms than is useful
Smart alarms	Logger dials up when smart parameters (which identify the range of normal operation at any one time) are breached, and more frequently than normal thereafter until it returns to default dial-up intervals	<p>NONE</p> <ul style="list-style-type: none"> Battery life maximised Alarms only when justified

Outside this alarm regimen, it is highly likely that 15 minute values delivered daily is perfectly adequate for all other use cases for the data.

i2O helps its clients set appropriate levels for simple threshold alarms for each logger; we are currently implementing decaying alarms; and we plan to develop smart alarms during 2018. We pride ourselves on the quality of our hardware, the ease of use of our software, the way in which we support our clients, and the continuous improvement and innovation that ensures that clients get the best return on investment with our smart network solutions.



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