telemetry
smart monitoring

Franchisee Introduction

Background.

- Rolling 12mth soft drink score across the McDonald's UK estate is currently only **85**
- That's approx. **100m** drinks served poorly every year*
- It's the worst in Western Europe

- Telemetry started testing remote monitoring sensors in McDonald's Restaurants back in 2017 to see if soft drink quality could be improved through the use of better data.

- We do this by measuring the overall performance of key parts of the soft drink system & have 3 key metrics

  - **Ice Bath Efficiency:** this measures what % of time the Ice Bath remains cold (within agreed parameters)

  - **Equipment Performance:** this measures how well the whole system is performing

  - **Power:** we know what a Multiplex should be using & can tell what's wrong when it's using too much/too little

- Approval for adoption was given after long-term oversight by the OST & RSG
- Telemetry is a standard installation in all new restaurants in every McOpCo
- Currently installed in 350+ restaurants and growing

*All EPoS data supplied by McDonald's UK

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Equipment Performance.
Last 15mths

Monthly Equipment Performance FZ & McOpCo

%

Legend: ■ EP scores (McOpCo) ■ EP scores (FZ)
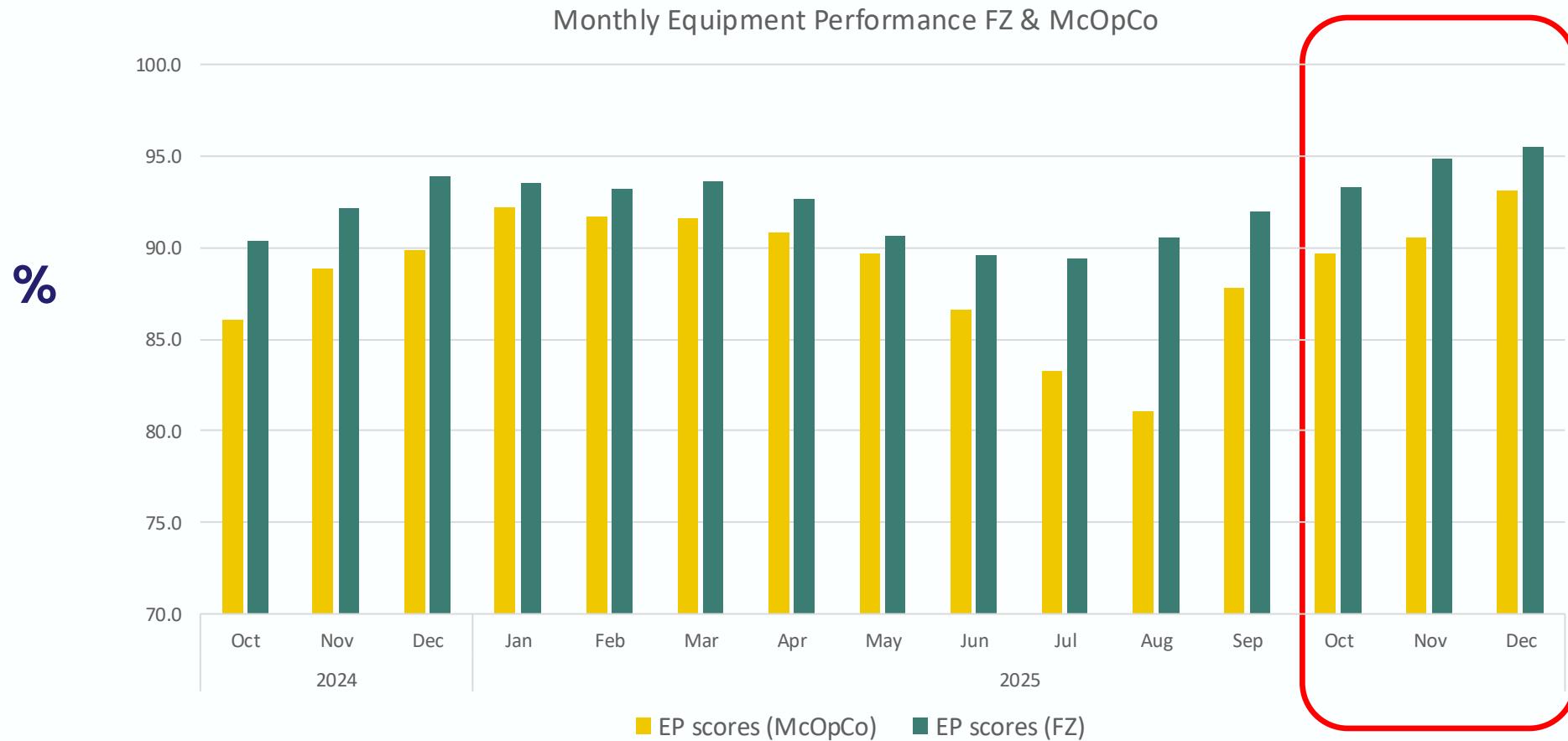
*Based on average soft drink sales across a 24hr period.

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Water Flow & Temperature Sensor Map.

Mains Water In

A — WATER FLOW SENSOR

PRE FILTER

H — AMBIENT TEMPERATURE SENSOR IN EQUIPMENT ROOM

DRINKS TOWER

WATER BOOSTER SYSTEM

WATER FLOW SENSORS

B

C

ICEMAKER

BIC

COFFEE MACHINES

DP 190 FILTER

TEMPERATURE SENSOR (FLOW) — **F**

G — TEMPERATURE SENSOR (RETURN)

D

E — POWER SENSOR

TEMPERATURE SENSOR IN ICE BATH

COOLER/CARBONATOR

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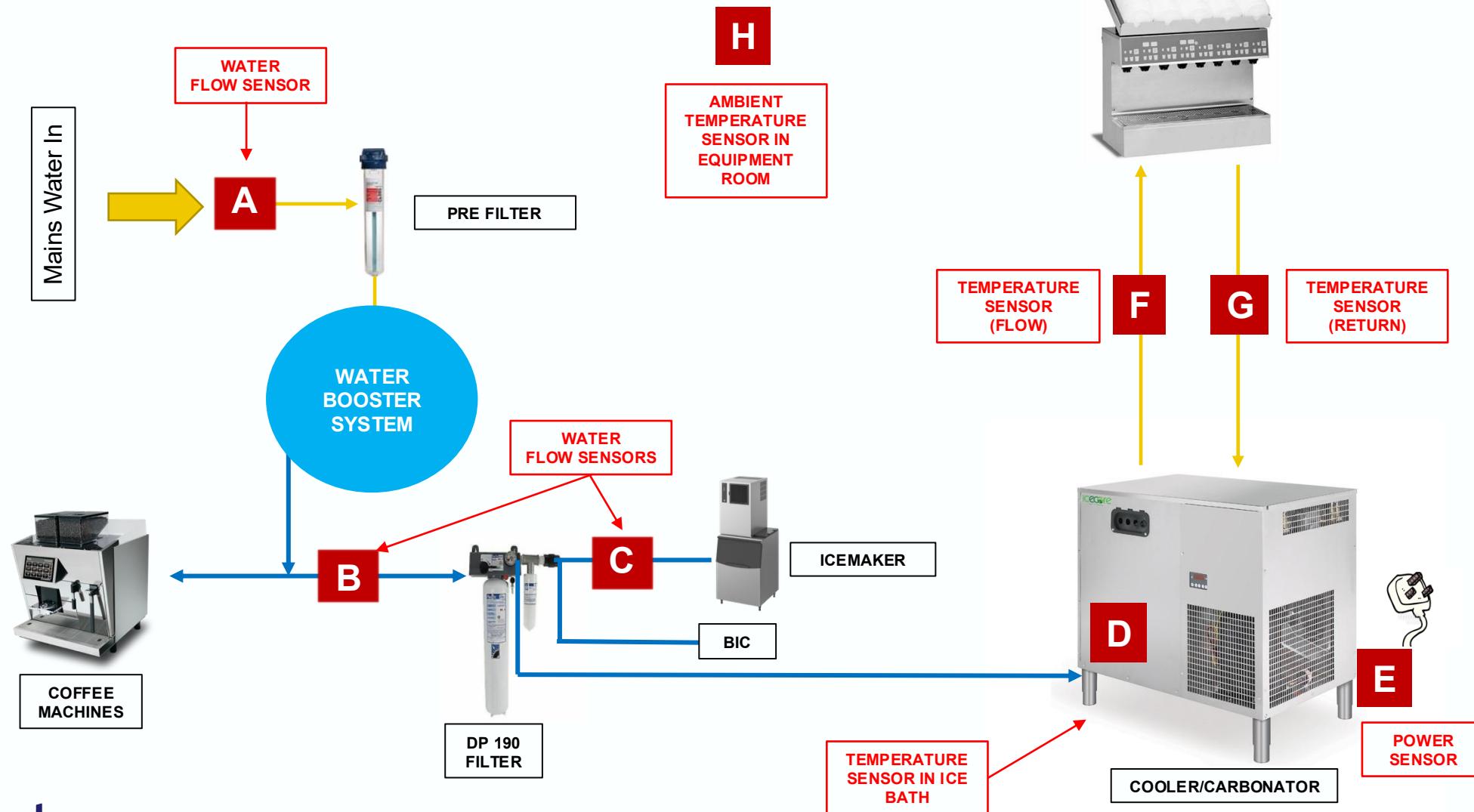
Portal.

Each restaurant gets its own page on our portal.

The performance of every sensor can be seen/monitored in graph format with adjustable timeframes & units (minutes/hours/days)

Alert parameters can be set/altered whenever necessary

The portal is integrated with eTech & logs all eTech tickets raised against soft drinks
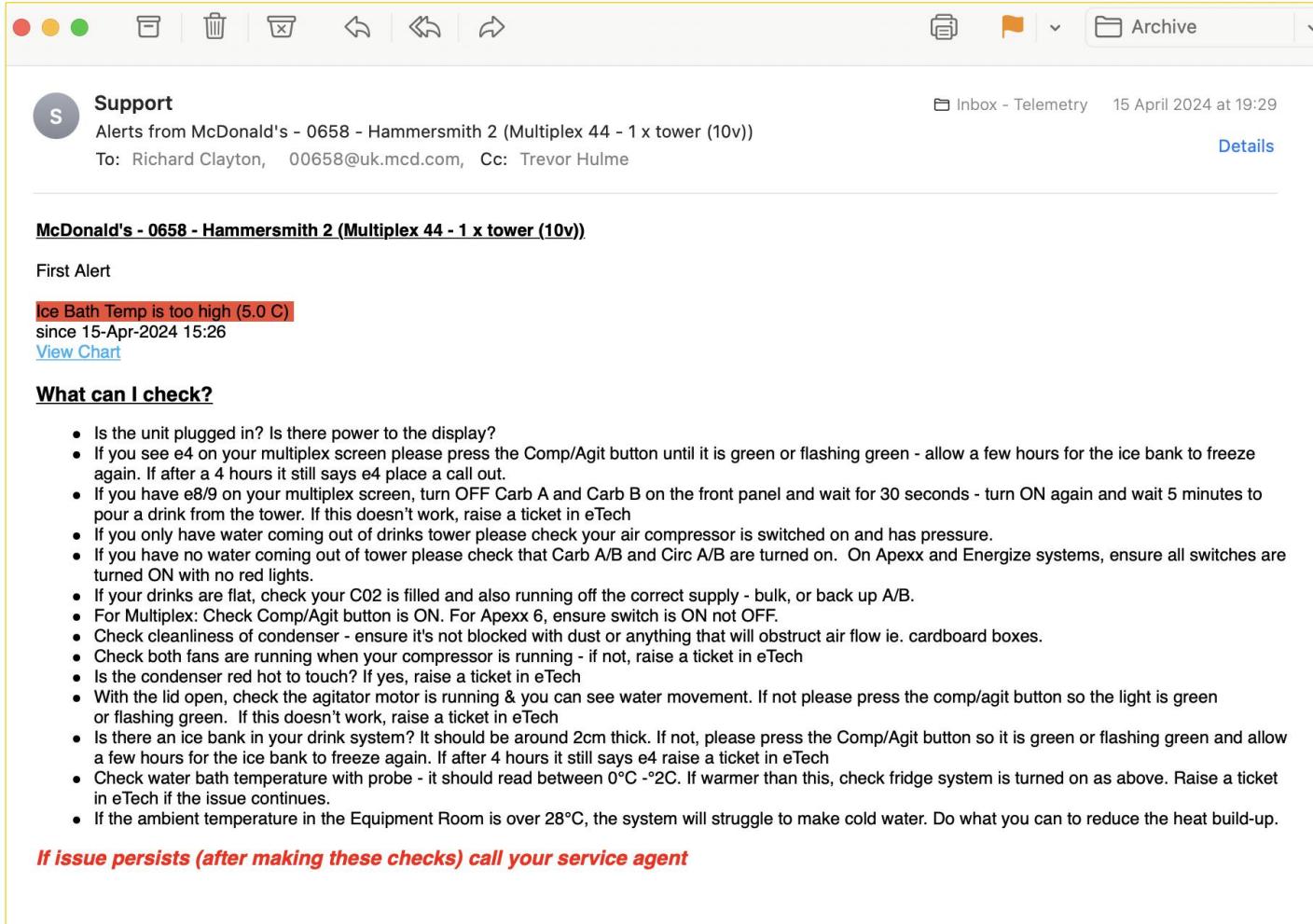
![telemetry smart monitoring]

Alerts.

Restaurants & Service Companies receive 4 major types of alert:

- Ice Bath temp
- Poured Drink temp
- Excessive Power use
- Excessive Water use

*Some also receive Chiller/Freezer/Boiler temperature alerts

Restaurants have to acknowledge each alert.

Fault Analysis.

Accurate fault analysis is key to sending the right engineers to the restaurant with the right part to avoid multiple visits
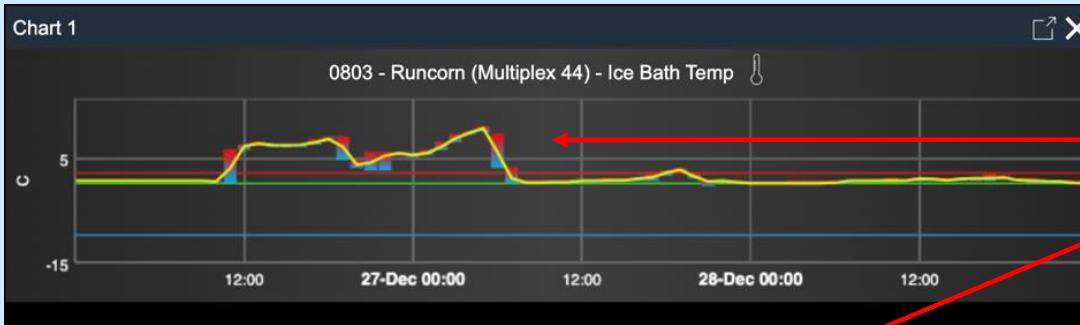
Ice bath temperature rise + power drop in Multiplex = possible accidental mistake **OR** refrigeration issue (thus needs a specialist refrigeration engineer)
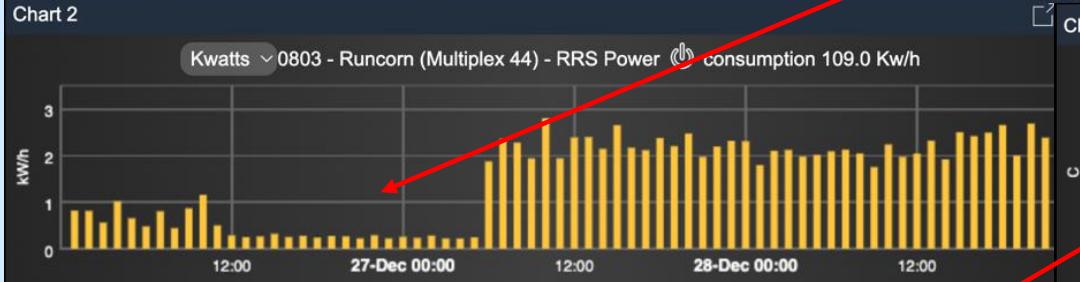
Ice bath OK but rise in flow temperature to drinks tower = recirculation or agitator motor fault (parts not normally carried by Service Companies)
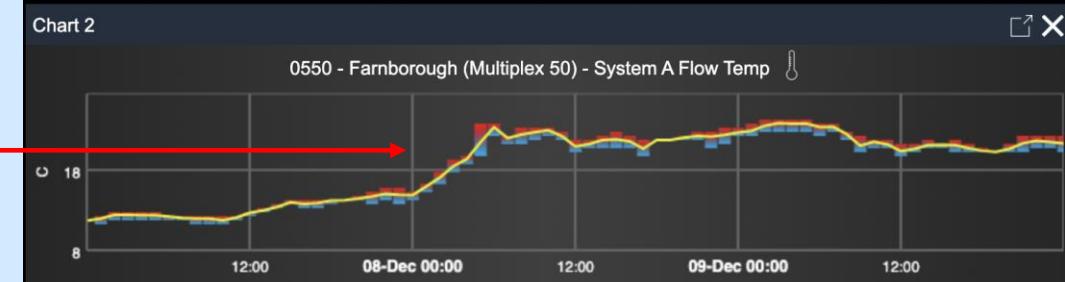
Service Company Integration.
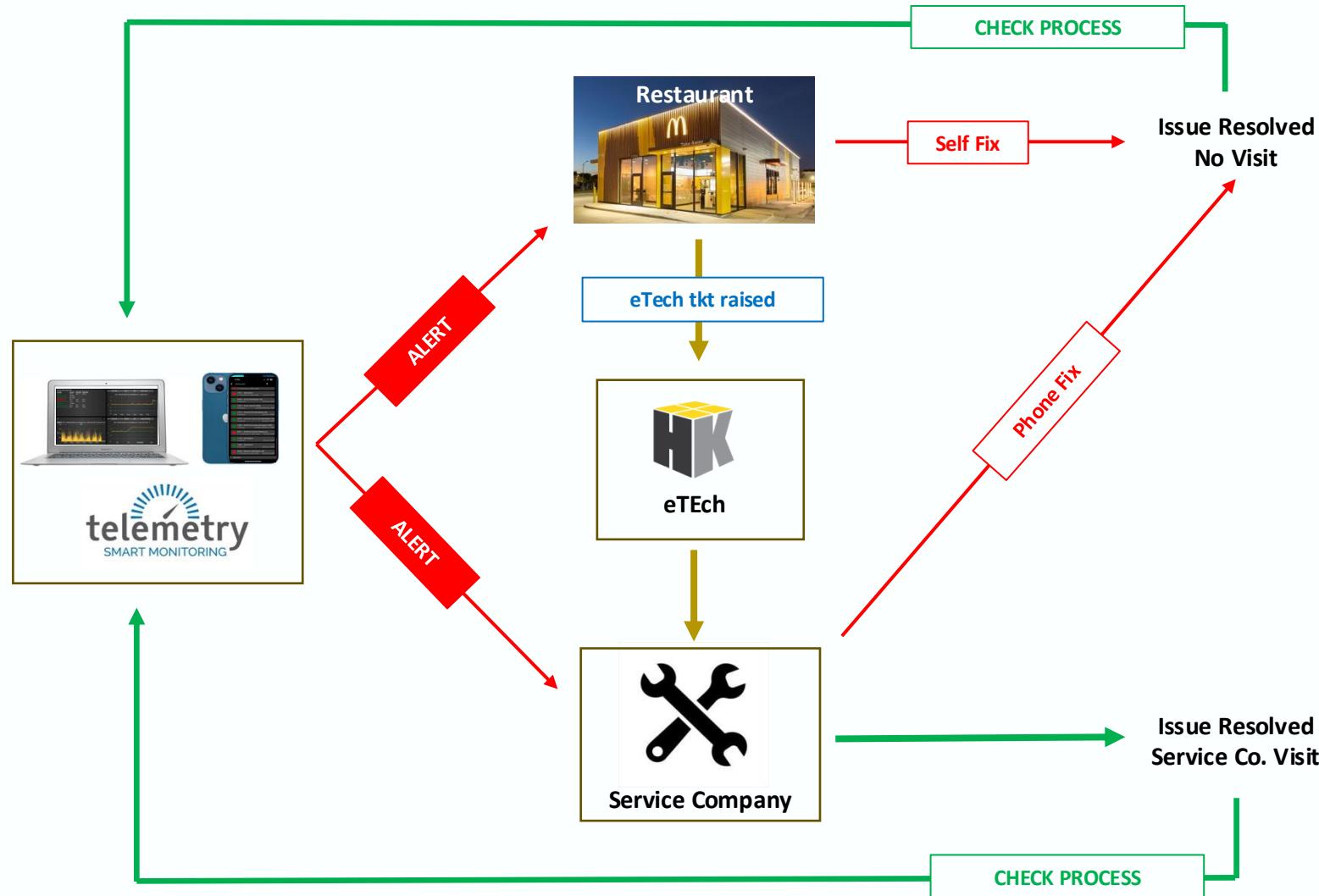
Service Company Integration/2.

Service Co. given direct access to the Telemetry portal & App

Before 0658 Hammersmith formally alerted, SC notice that the Ice Bath at the site had started to climb, combined with a power drop from the Multiplex

Immediate phone fix attempted. Multiplex restarted but site report grinding sound.
SC send out engineer to replace broken fan arm. Soft drinks back online with 1hr.

All the major Service Companies already have access, but every Service Company can have access.

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Quality Maintenance Programme 2.0 & Telemetry

We sell almost **800million** carbonated soft drinks every year - they are the highest margin and most sold beverage in restaurants, but we also sell millions of 'warm' or out of specification drinks every year. The health of the soft drink system across restaurants is key to provide a 'Gold Standard' soft drink, which we know improves both brand perception with our customers, and in turn sales.

QMP visits take place twice a year, but QMP 2.0 with Telemetry introduces an 'always on' system, which enables you to monitor soft drinks quality and equipment performance 24 hours a day. **The Telemetry system sends alerts to the restaurant and your Service Company to take action that would otherwise go unnoticed. Often a phone fix is all that is needed.** As a result, Quality in restaurants with Telemetry is substantially higher (see graph).

COCA-COLA AUDITS VS. LIVE TELEMETRY SCORES

Investment

- The cost of purchasing the standard package of 8 sensors is **£1903 + VAT**.
- The sensors monitor water volumes & temperatures, temperature of the ice bath, ambient temperature in the equipment room, and power usage
- The ongoing monitoring costs **£67pcm,** with most of the cost being offset against savings listed below, making this system almost cost neutral

Main Benefits

| Issue	Additional Comments	Saving
Reduced QMP Visits	As the system is monitored 24/7 it only requires one full QMP visit and one shorter visit at reduced cost	£136 Annually
Drinks being Unavailable	Daily cost of Soft Drinks being unavailable – average loss of Margin	£674 Daily*
Coke Cans	Additional cost of purchasing Coke Cans due to prolonged downtime of equipment	£385 Daily*
Water usage	The system can identify excessive water usage, which is often due to equipment issues or wrongly plumbed systems	£170 Monthly*
Power usage/efficiency	As drinks systems get older, they become less efficient and use more energy to run. Telemetry monitors energy usage and can show when older systems become less economic to run (currently 36% of FZ restaurants)	£972 Annually*
Filter pack changes	The life of a Filter Packs is measured by volume. Until telemetry was introduced, no volume measurement was ever possible. Most sites have filter packs that need changing every 2yrs, not every year	£300.90 every 2yrs*
Phone Fix	Service companies can review alerts and provide a phone fix instead of a reactive call	£87 per call*

Annual Cost of Telemetry

- Actual cost of Telemetry
- 1 hr lost revenue protection
- Savings on power usage (36% of sites)
- Savings on filter pack every 2yrs
- Savings on Phone Fix service calls (1 x per year)
- Savings on QMP visit (all sites)
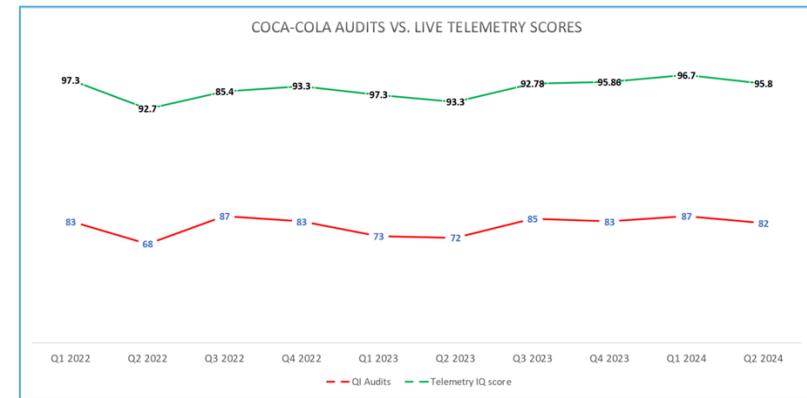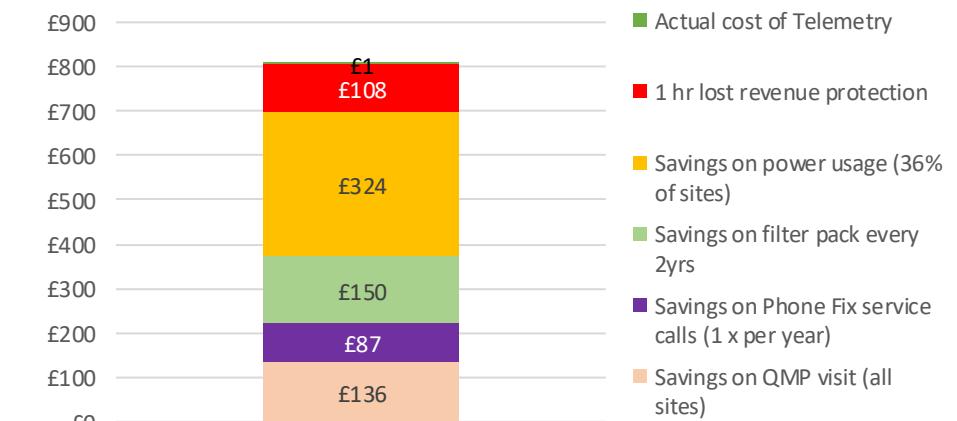
Figures based on average volume restaurant and data from restaurants currently on Telemetry, and margin/sales data from BSi

GIRSM

Cost/Benefit

Average soft drink sales across UK restaurants in 2025 were approx.**1027*** per restaurant per day.

89.2% of these drinks are sold between 9am–9pm

That's **76** per hour (not adjusted for peaks within that time period)

Average size is 0.4L (Medium) @ £1.69

Assumed blended margin: 84.6% - £1.43

76 x £1.43 = £108.68 per hour

Lost revenue from soft drinks sales:
1hr = cost of Telemetry for **2mths**
3hrs = cost of Telemetry for **6mths**
9hrs = cost of Telemetry for **18mths**

*All EPoS data supplied by McDonald's UK

Power Savings.

Back in 2021, Telemetry identified 9 x McOpCo restaurants where the power usage was substantially higher than the benchmark.

Each restaurant was using older model Apexx 6 equipment which in every case was struggling to perform properly, affecting not only the power usage, but also delivering sub-par drinks quality.

By demonstrating the ROI on replacing the key equipment, McDonald's replaced the cooler-carbonator in every restaurant.

The cost-savings to date (data is up to end 2025) in just **9** restaurants is over **£150,000**

Additionally, the quality of the soft drinks in every restaurant has markedly improved

Restaurant	2021/2 Previous power use (Kw/h p/d)	Annual Cost	2024/5 Avg Curernt power use (Kw/h p/d)	Annual Cost	4yr Saving
0300 Dagenham FS*	110	£11,041.25	24.47	£2,456.18	£34,340.30
0370 Stonedale Lane	62	£6,223.25	22.3	£2,238.36	£15,939.55
0969 Crayford	59	£5,922.13	21.9	£2,198.21	£14,895.65
0970 Stairfoot	72	£7,227.00	29.5	£2,961.06	£17,063.75
0268 Leytonstone DT	54	£5,420.25	23.9	£2,398.96	£12,085.15
0441 Wigan	48	£4,818.00	22.7	£2,278.51	£10,157.95
0332 Swansea	58	£5,821.75	26.4	£2,649.90	£12,687.40
0336 Llanelli	62	£6,223.25	31.8	£3,191.93	£12,125.30
0682 Odbury*	96	£9,636.00	40.1	£4,025.04	£22,443.85
				Total	**£151,738.90**

*Now Franchised

A typical month.

This is the log of emergency breakdown alerts* from across the McDonald's estate (318 restaurants monitored) over a 30day period from 15/8/25 – 14/9/25

0542 Newcastle – recirculation pump failure

2145 Hailsham – accidental motor switch-off

1635 Paddington – PCB relay failure

1164 New Denham – accidental drain valve left open

1681 Bermondsey - recirculation pump failure

0011 Shepherd's Bush – agitator motor failure

1712 Bury St Edmunds - accidental motor switch-off

2474 Brentwood High St – Ice bath overheating

0455 Ealing - recirculation pump failure

0421 Chelmsford – Power fluctuation affecting ice bath temperature

0326 Carlisle - accidental motor switch-off

0658 Hammersmith 2 – ice bath overheating & power surge

1396 Greenford 2 – Boiler temperature sub-50°C

0484 Target – Walk-in freezer high temp alert

0500 Notting Hill Gate – Low boiler temperature

0367 Dagenham 2 - accidental motor switch-off

Over the same period, the system detected 1876 issues in 165 restaurants

This triggered 231 different alert emails

*Not including repeat alerts from sites with issues before 15/8/25

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A typical month (examples).


1635 Paddington – PCB relay failure

0484 Target – Walk-in freezer high temp alert

1164 New Denham – accidental drain valve left open

0326 Carlisle - accidental motor switch-off

0542 Newcastle – recirculation pump failure

0421 Chelmsford – Power fluctuation affecting ice bath temperature

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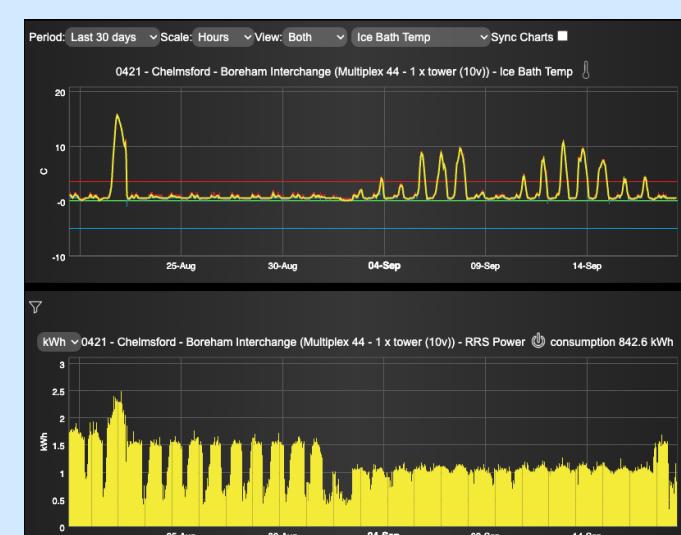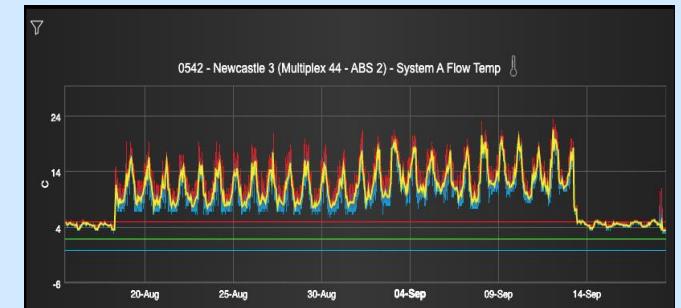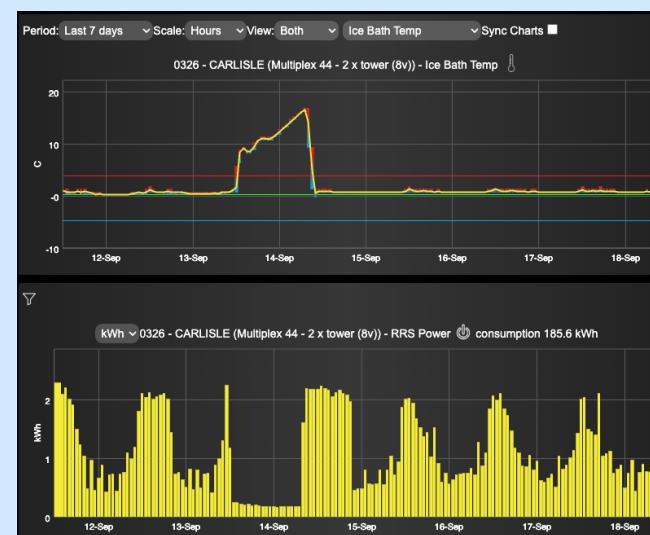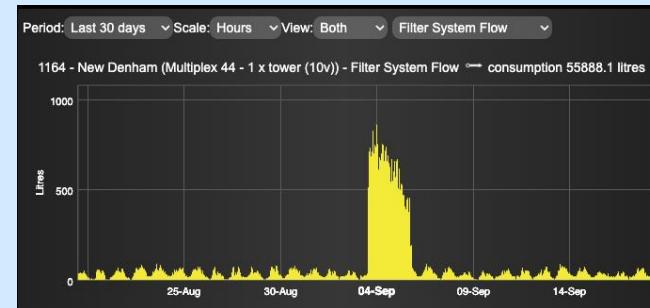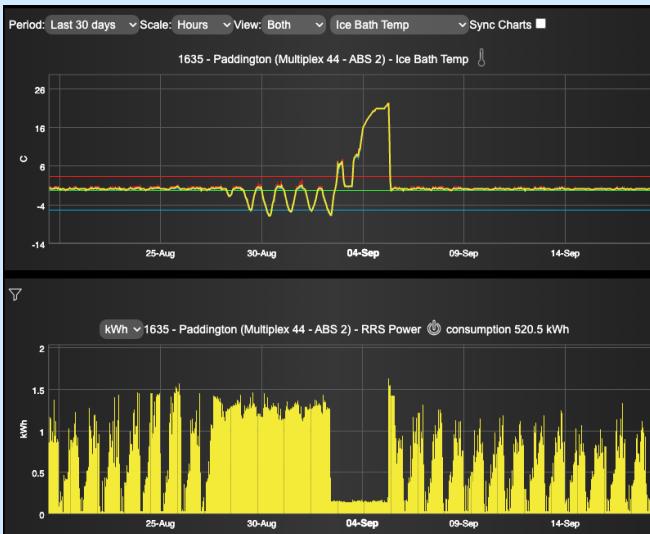
Filter Pack Replacements.

The current replacement schedule of the DP filter packs is currently based on restaurant revenue.

The useable life of the DP Filter pack is actually determined by volume of water NOT time or revenue.

The flow meters we install accurately assess exactly how often they need replacing (this no longer needs to be once a year) & whether an upgrade is justified

Latest volume data:

	2023	2024	2025
Avg Litres p/d used by a restaurant	879.6	661.8	651.3
Estimated DP190 Filter life (days)	232	308	313
Estimated DP290 Filter life (days)	464	617	626

Filter Pack: Cumulative Litres

DP 290: 408,000 litres

DP 190: 205,000 litres
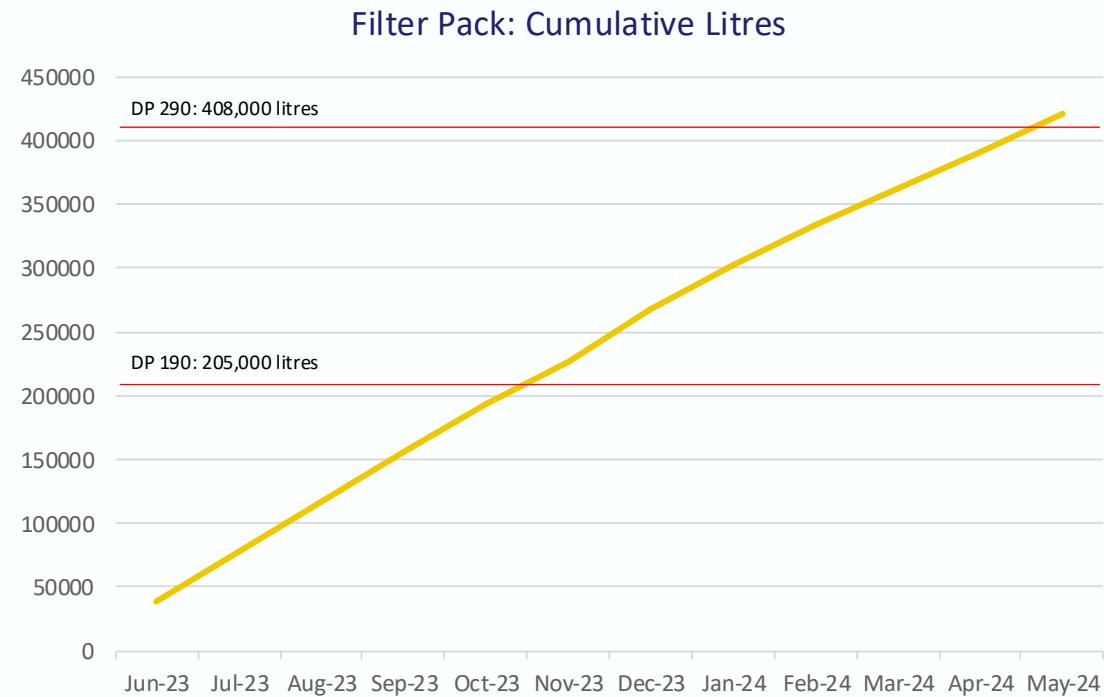
Example
This restaurant has a DP190 which can be replaced twice a year (£165 each) rather than upgrading to a DP290 (which requires installing a new head: £276.71 + labour) costing £300.90 per annual replacement.

Sustainability.

Summer 2025 was substantially warmer than in 2024

The average temperature increase in the Equipment Room was **+4° C** vs 2024

The hotter the Equipment Room, the harder the Multiplex has to work to produce cold, carbonated water.

Despite this, the average daily power usage by the McOpCo estate through upgrading machinery and faster, more proactive maintenance was 2.45 Kw/H (8.7%) per day **LESS** than Q2 2024.

As a result, running the McDonald's estate in 2025 was 8.5% cheaper overall

As a byproduct, this reduced the CO2e output in 139 x McOpCo sites by **31.6 tonnes**

Average power usage by the soft drinks machinery in the last 2yrs:

	McOpCo	FZ
	Kw/h per day	
Q4 2023	29.41	22.64
Q1 2024	25.36	19.86
Q2 2024	28.3	25.11
Q3 2024	29.51	27.53
Q4 2024	23.91	20.92
Q1 2025	21.86	18.32
Q2 2025	25.77	22.76
Q3 2025	28.21	24.43
Q4 2025	22.27	19.79
Avg	**25.65**	**22.34**

Avg	McOpCo	FZ
	Kw/H	**Kw/H**
Last 12mths	24.53	21.33
Prior 12mths	26.77	23.36
Saving	2.24	2.03

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Electrical costs estimated using £0.275 per Kw/h

Freezers, Chillers & Boilers.

We can also put temperature monitors into the walk-in Chiller & Freezer. Parameters are set to alert far more quickly (1-2hrs)

Raw data can be used for HACCP reporting
(we have an FSA Feasibility Study that supports this)

We've also been tasked by some Franchisees to supply a temperature sensor on the Boiler outflow pipe to ensure that water stays above 50°C as part of HSE regulations re. Legionella
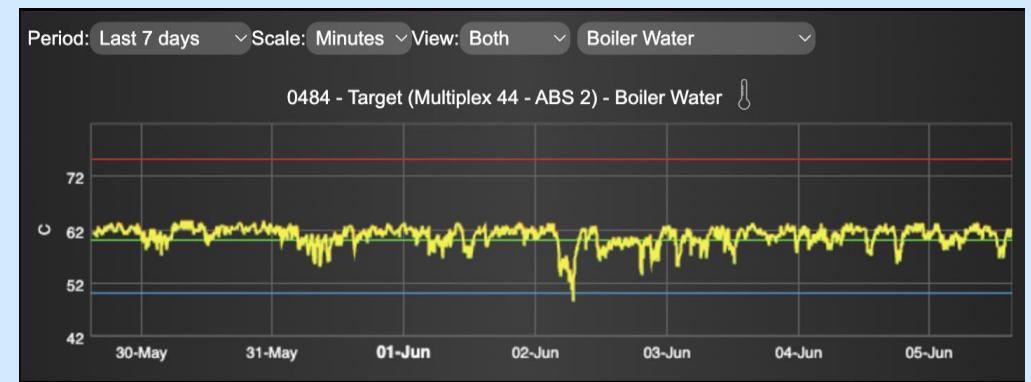
Cheaper QMP.

- The 2 annual engineer visits that check soft drink quality are part of the Quality Maintenance Programme (QMP) introduced by Coca-Cola in the UK in 2004
- The engineers go through a 400 point check across all parts of the soft drinks system
- The QMP programme is funded 50/50 by Coca-Cola.

- Telemetry facilitates a move to QMP 2.0 (in installed restaurants)
- Remote monitoring cannot completely replace engineer visits – various checks have to be done manually for Health & Safety reasons, or simply cannot be done remotely.
- As such, one full QMP visit is still required annually. This cost is shared 50/50 between Coca-Cola and McDonald's
- However, the introduction of remote monitoring allows the engineers to look at historical patterns of performance before they visit, so the 2nd visit can be much shorter.
- Coca-Cola fully fund the 2nd visit.
- Immediately saves **£145** when adopting Telemetry

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For any additional insights, please contact us.

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