Every year millions of pounds are wasted through boilers / heaters operating when they are not needed, at the wrong temperature or inefficiently due to faults. This also needlessly increases CO2 output (Domestic Heating corresponds to around 70 Mt CO2 / yr for UK)

Incorrect operation can also result in higher Carbon Monoxide levels: CO poisoning is responsible for 500 deaths per year in US.

Breakdowns are not predicted nor parts identified leading to loss of heating / hot water to families at the worst time. Service technicians not being able to first time fix problems due to not knowing in advance the issue & and no preventative actions being flagged resulting in higher total service costs.

This Prototype will consider two Personas:

- James: Service technician – technical IoT screen giving plots of internal characteristics & likely part failures
- Jane: Owner & mother – operating IoT screen giving boiler on times & temperature, recommendations for reducing costs and traffic lights for boiler status
Persona

Jane

Home Maker
I want to do the best for the environment but my family is my real focus.

About
- Interested in environment & recycling
- 35, Married with two children
- Always busy but often spends downtime on Instagram and Facebook
- No time to learn complex things but will use clear UIs such as Social media sites
- Was previously a secondary school teacher and now teaches part time

Main Goals
- Minimizing spend on ‘boring’ items so that can save for holidays
- Ensuring that Annabelle and Charlie have a happy and comfy home
- Minimising impact on the environment

Responsibilities
- Managing the home budget including utility bills
- Looking after her family especially children: Annabelle and Charlie

Needs
- Need things to manage themselves as much as possible
- Clear visibility of how much heat they are using and when
- Warnings when appliance servicing is needed
- Positive message that the boiler is safe

Point of View

JANE
As a Homemaker
I need a way to ensure that my family has secure, economical heating & hot water so that I don’t need to worry about losing these with no notice and being hit by large unexpected bills

Pain Points
- Things breaking down without any warning
- Technicians speak ‘goobledigook’ – never sure whether they are making stuff up or over charging
- High spend on fuel – always increasing
- Complexity of thermostats – not sure what they are doing most of the time, hence often set things manually
- Worried about some of the cases of carbon monoxide poisoning
Persona

JAMES

Boiler Technician

I want to do the best for my customers & reduce the time I waste

About

- Keen cyclist
- 45, Married with one child
- Was self employed but now works for a large service organization due to job security
- Spends most of the shift visiting clients, checking installations and then ordering parts
- Not much computer experience but used to portals such as Amazon for ordering parts

Main Goals

- Maximizing ‘fixes’ on first visit
- Minimizing emergency call-outs – these often occur at night or weekends
- Being better prepared for customer visits & improving customer satisfaction

Pain Points

- Customers call in with the wrong details, boiler type and issue – time is often wasted investigating non-issues
- Generally do not have required parts available
- Customers skeptical about work required and costs of repair especially if this is a boiler replacement
- Customers (especially with families) are often under stress / angry when there is no heating / water - this could be resolved where preventative work was undertaken
- Customers are often not having their periodic boiler safety reviews – as a father he is concerned they are risking their family safety

Responsibilities

- Rapidly resolving boiler failures and restoring heating
- Ordering correct parts
- Providing usage advice
- Selling replacement boilers where this is the right solution
- Ensuring work is safe and to CORGI standards

Needs

- Clear details prior to a customer visit of the boiler details, historical performance and likely problem area
- Ability to arrange preventative visits and back these up with rationale rather than always responding to device failures
- Ability to give advice of boiler usage and replacement

Point of View

JAMES

As a Service Technician

I need a way to better understand the customer boiler condition

so that I can more rapidly resolve boiler problems, improve my customer satisfaction ratings, improve sell on ratios
## UX Journey

### Jane: service visit preparation and boiler repair visit

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>&gt;Boiler breakdown</th>
<th>&gt;Provide boiler details</th>
<th>&gt;Book visit</th>
<th>&gt;Customer visit</th>
<th>&gt;Check boiler</th>
<th>&gt;Fix boiler</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINDSET</td>
<td>Oh no – how can this breakdown? Where is the phone number? Finally got through to call center.</td>
<td>Are they crazy – how do I know what's wrong with it? No idea what the model is – how would I know?</td>
<td>What – no one can come to fix it for 2 days – how am I going to keep my family warm?</td>
<td>Why are they so late? OK – finally they have arrived.</td>
<td>Good that he is looking at the boiler – hopefully it should be fixed soon.</td>
<td>What – why doesn't he have the part? What terrible service - why should I pay?</td>
</tr>
<tr>
<td>FEELING</td>
<td>😞</td>
<td>🙁</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>TOUCH POINTS</td>
<td>Call desk / service system</td>
<td>Call centre?</td>
<td>Call centre</td>
<td>Technician</td>
<td>Technician</td>
<td>Technician</td>
</tr>
</tbody>
</table>

### James: service visit preparation and boiler repair visit

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>&gt;Review request for visit</th>
<th>&gt;Look-up boiler details...</th>
<th>&gt;Pre-Order / collect parts</th>
<th>&gt;Customer visit...</th>
<th>&gt;Check boiler</th>
<th>&gt;Fix boiler</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINDSET</td>
<td>Arrive – another out of hours call. Full details not provided</td>
<td>Boiler model not provided. Customer will often not know details or be available</td>
<td>Need to ‘guessestimate’ likely issues and likely parts required</td>
<td>Need to find the house – hope the address is correct.</td>
<td>As I feared this is a different boiler type!</td>
<td>I manage to use a part I had from another model – however will need to return to resolve.</td>
</tr>
<tr>
<td>FEELING</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>TOUCH POINTS</td>
<td>Call desk / service system</td>
<td>Customer call?</td>
<td>Spare parts stores / web sites</td>
<td>Customer</td>
<td>Customer</td>
<td>Boiler</td>
</tr>
</tbody>
</table>
Jane: My Boiler gives me full visibility of my heating & hot water wherever I am – I can even set the temperature remotely. It lets you know when it need servicing and lets me know how much it will cost. It even advised me how to reduce my bills.

<table>
<thead>
<tr>
<th>Ability to remotely set Room temperature</th>
<th>Ability to remotely set Water temperature</th>
</tr>
</thead>
</table>

**MY BOILER**

- **Status:** Overall
- **Fan status:**
- **CO Status:**
- **Gas Pressure valve:**

**LIVE WATER TEMPERATURE**

- **Temperature:** 12°C
- **Time:** 2 mins ago

**MY AVERAGE ROOM TEMPERATURE**

- **Recommendation:** Turn down thermostats when you are out!

**MY AVERAGE WATER TEMPERATURE**

- **Recommendation:** Too high - check tank thermostat!

**EFFICIENCY (100 = Normal)**

- **Recommendation:** Too low - consider replacing boiler!
James: With Gas Boiler I have full details of the boiler and recommended spares which I can order through the App. I have contact details and boiler location saving me lots of time. My customer can see the same details ensuring they trust my judgment and pricing.