Abstract

A preventative maintenance view of the connected home
We all want the stuff in our houses to work, and to work without needing lots of time, money or effort to ensure that it keeps working. Problems can be merely frustrating (a light bulb breaks), annoying (there is no hot water), disastrous (a sewage leak) or even life-threatening (a gas leak).

By intelligently connecting the equipment in our homes we can reduce the cost and disruption of maintenance, and minimize the impact if something still breaks down.

This is not only cheaper and simpler for the tenant/home-owner, but creates a significant business opportunity for companies with the knowledge, network and foresight to provide such a service.
Clara
Service Manager at HomeCare

“I manage a mobile team of support technicians. I need to organize our home maintenance and repair work across a wide geographic area as efficiently as possible”

About
• Understands the work of her technicians, having been one
• Takes pride in what she does
• Can sometimes be frustrated by (unrealistic) demands of her customers

Responsibilities
• People management – wants to develop her team
• Keeping company costs under control

Main Goals
• Meeting customer expectations
• Balancing the demand on her team members with the needs of her customers

Needs
• Clear, simple information on what jobs need to be done – and what priority they have
• Location and capability of all her technicians
• Spare part information

Pain Points
• Demand is growing and it can be difficult managing this expansion
• Complex systems that don’t always provide enough information on the nature of a fault
• The huge variety of equipment her technicians support
• Loss of connectivity within and between her customers’ homes
Persona Template – Tenant

Theodora
Home owner and Landlord

“I value my time and want things to work simply and quickly. I don’t mind investing a little, but above all I want a good return from the property I own”

About
• Busy, in fact hectic, life
• Married with three school aged children
• Runs a portfolio of privately rented residential property
• Values time with her family

Responsibilities
• Running her property portfolio of ten houses and flats
• Keeping her own home
• Her three school-aged children

Main Goals
• Good return on her investment in property
• Reduce the number of calls (and complaints) from her tenants
• Keep control on spend

Needs
• Clarity on what needs to be done in her properties
• Predictability – when things need to be done
• Visibility of costs

Pain Points
• Resents time spent dealing with issues from her tenants
• Wants a good return from her property, and to minimize the time any property does not have a tenant
Point of View

As a Service Manager at HomeCare

I need a way to see all the jobs that need to be done, by priority, with a suggestion on who should do them

so that my customers have a safe working home, and my team members are happily busy

.
UX Journey
Describe Actions, Mindset, Feelings and Touchpoints
### User Experience Journey – work allocation process

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>Shift handover – current status</th>
<th>Allocate top priority jobs</th>
<th>Query from team member – error code not listed</th>
<th>High priority alert – possible gas escape</th>
<th>Issue resolved – false alarm</th>
<th>Final task allocation correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINDSET</td>
<td>- “Are there any real emergencies” - “Have all my team checked in?”</td>
<td>- “Nothing too demanding” - “Good – team all available” - “Should be able to manage this....”</td>
<td>- “Who will know the answer to this one?”</td>
<td>- “Emergency services needed? Or a false alarm??”</td>
<td>- “Glad I could check all the sensors”</td>
<td>- “Switching these team members will work better for their experience – and journey home”</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>- Colleague on previous shift - Summary work items screen - Scenario options to confirm task allocations</td>
<td>- Summary work items screen - Scenario options to confirm task allocations</td>
<td>- Phone calls - Guided problem solver</td>
<td>- Device status details screen</td>
<td>- Sensor details for whole home - Current issues with utility company</td>
<td>- Scenario options to confirm task allocations - Team development goals</td>
</tr>
</tbody>
</table>
Prototype
Prototype screens for an IoT application to solve your PoV
Filter options - by priority, task type, location, time/date created, etc

Job List in priority order

Priority  Task  Location  Technician  etc

Map View
Current location of all technicians (colour coded for status (travelling/host/working/waiting))
Locations of all open jobs (colour coded by priority/type)

Scenario Overrides

Customer waiting time weighting (1-5)  Technician travel time (1-5)  Technician job time (1-5)  Relax SLAs? (Y/N)

Current and anticipated Service Levels

Preventative jobs complete

Response time by priority

4 hours  2 hours  <1 hour
0-4 am  4-8 am  8-12 am  12-4 pm  4-8 pm  8-12 pm
### Job number and short description

<table>
<thead>
<tr>
<th>Device serial model/number</th>
<th>Contact Person -&gt; their Role</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Job type</th>
<th>Notification #1</th>
<th>X minutes ago</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Notification #2</td>
<td>X minutes ago</td>
</tr>
<tr>
<td></td>
<td>Notification #3</td>
<td>X minutes ago</td>
</tr>
<tr>
<td></td>
<td>Notification #4</td>
<td>X minutes ago</td>
</tr>
</tbody>
</table>

### DeviceLocation

#### Recommended action

Recommended technician, current location, estimated time to arrive at location

#### Sensor Response #1

Details of alert

#### Sensor Response #2

Details of alert