Chameleon: HTC-Up

Subheading: Unlocking retrofit potential through data-driven green finance

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Partners: Chameleon Technology, NatWest, Furbnow

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- Discovery Phase: £155,692
- Pilot Phase: £795,131

Project duration:

- Pilot Phase: January 2024 – June 2025 (extended from March 2025)

Innovation overview

The HTC-Up project aimed to simplify and personalise the green home retrofit journey by utilising smart meter data to generate tailored recommendations for retrofit and then providing access to finance and installers.

Central to the project was the use of Heat Transfer Coefficient (HTC) scores (a measure of how well different parts of your home resist the flow of heat) to assess a home's thermal efficiency more accurately than traditional Energy Performance Certificate (EPC) ratings. These scores were derived from smart meter and temperature data via the ivie Bud device, an in-home display device with integrated temperature sensors that show smart meter energy use and transmit data to the Cloud. This enabled Chameleon to offer bespoke retrofit advice, identify homes suitable for heat pumps or solar panels, and connect users with vetted installers and finance options.

The innovation lay in delivering a fully integrated digital journey based on these digital insights. The digital journey also included other innovative features such as nudges to influence energy-saving behaviour and rewards, including the opportunity to enter a weekly draw to win Amazon vouchers, to encourage energy-saving actions. HTC-Up also explored the potential of HTC scores as a method for verifying retrofit installations, offering a scalable alternative to in-person inspections.

Despite challenges in delivering the full finance product as originally envisioned, the project demonstrated how combining real-time energy insights with user-centric design can reduce barriers to retrofit uptake and support the UK's transition to low-carbon housing.

What were the objectives of the project?

HTC-Up set out to address key barriers to home retrofit by delivering a holistic, user-friendly service. The core objectives were:

1. **Improve retrofit decision-making**: Use smart meter data and HTC scores to provide personalised, property-specific retrofit advice.
2. **Enable access to finance**: Develop and test finance products tailored to recommended retrofit measures, including cashback and rewards.
3. **Simplify the customer journey**: Create a digital pathway from energy analysis to finance and installation, reducing friction and uncertainty.
4. **Test verification methods**: Explore the use of HTC scores and smart meter data to verify installations, reducing the need for physical inspections.
5. **Reach diverse customer segments**: Engage homeowners across the UK through targeted marketing via NatWest and Furbnow channels.
6. **Generate sector insights**: Evaluate customer behaviour, technology performance and partnership dynamics to inform future green finance solutions.

Activities funded by the Green Homes Finance Accelerator

The project used Green Home Finance Accelerator funding to develop a new feature in the ivie app and create associated marketing campaigns and customer engagement activities:

- **Integrating the HTC scoring system:** Building the scoring system into the ivie app.
- **Creating a solar suitability tool:** Using a new optimisation engine.
- **Designing and testing two distinct customer journeys**: One via NatWest and the other via Furbnow.
- **Deploying marketing campaigns**: Through Meta ads, email and in-app banking prompts.
- **Distributing 538 free ivie Bud devices**: To participating households.
- **Developing a supplier portal**: Connecting users with vetted installers.
- **Implementing user challenges and rewards:** Encouraging energy-saving behaviours. For example, the ivie app has a section for personalised energy saving challenges. Participating in these challenges earns users points which can then go towards things like a weekly raffle to win Amazon vouchers.
- **Testing three verification methods:** Surveyor visits, smart meter data analysis and HTC score comparisons.

- **Conducting user research and usability testing**: Research and testing carried out with over 1,200 participants.
- **Integrating educational content on retrofit technologies**: All within the ivie app, including a section specifically dedicated to heating improvements and a detailed explanation of the impact of installing solar and/or battery on energy bills.

What did the project achieve?

Overall, the HTC-Up project demonstrated the potential of data-driven tools to support retrofit decision-making and customer engagement. While some planned features, such as the bespoke finance product, were not fully delivered, the project still achieved several outcomes. The project:

- **Developed a personalised retrofit advice engine:** Using HTC scores derived from smart meter and temperature data, the project provided tailored recommendations to consumers for energy-saving measures – 8 in total throughout the project. This approach offered more accurate insights than EPC ratings due to the HTC score's live data insights into how well the home is insulated, and helped users understand the return on investment (ROI) of different technologies.
- **Tested two customer journey models:** The HTC-Up project tested two distinct customer journey models to evaluate how the sequence of engagement, starting with finance versus starting with installation, impacts user uptake of low-carbon home improvements. One journey led by Nat West led users initially through their Home Energy Hub, a resource which has a wider range of installation partners and finance options. The other, led by Furbnow, began with installation planning through targeted email and social media campaigns, followed by access to finance. Each pathway was supported by tailored marketing strategies and tracked for user sign-ups, engagement, and conversion. This split approach enabled the project team to compare behavioural responses and identify which journey structure more effectively motivated users to pursue retrofit actions.
- **Distributed 538 ivie Bud devices:** These devices enabled users to monitor energy use in real time and receive personalised advice. The Furbnow targeted Meta Ad (Facebook and Instagram) campaign accounted for 438 sign-ups, demonstrating strong interest from new users when paired with targeted messaging. Furbnow's personalised direct email campaign to its existing customer base (individuals already interested in home energy efficiency) resulted in the remaining 100 sign-ups.
- **Engaged users through behavioural nudges:** The ivie app included challenges, rewards, and gamified features to encourage energy-saving actions. The project reported anecdotal evidence that these nudges prompted users to consider more significant upgrades, indicating early-stage engagement with the retrofit journey, though further data is needed to confirm progression to installation.

- **Created a solar suitability tool:** A new optimisation engine assessed solar potential based on user inputs. While it sustained engagement during warmer months, fewer than 10% of users clicked on referral links to solar installers, suggesting limited impact on deeper action.
- **Explored innovative verification methods:** The project tested three approaches to verifying installations, including approved surveyor visits, smart data analysis and HTC comparison scores. The project reported that, while early results from the smart meter data analysis and HTC comparison methods were promising, the sample size was small and drawn from a subset of homes with HTC scores recorded at different times. The project acknowledged that a larger dataset is needed to validate the reliability of this method and determine whether it can reduce the need for physical inspections at scale.
- **Generated insights into customer behaviour:** Based on a sample of 1,009 online interviews with customers in the target market to understand the key barriers to retrofit, such as upfront costs, installer trust and lack of ROI clarity.
- **Refined the user journey through iterative design**: Feedback gathered via interview from 12 users who initially tested a prototype of the tool led to improvements in navigation, content clarity and referral processes. For example, users were reluctant to share contact details early, so a softer referral link was introduced. By asking to share contact data in the app, it effectively ended the journey for the customer. This was likely because users who had completed contact details previously were subject to high incidence of cold calls. Recognising this, the process was changed to a referral which gave more control to the customer.
- **Reached new customer segments:** The NatWest campaign had limited uptake – despite over 56,000 pop-up prompts, only 120 users accepted the offer, and just 32 users engaged with the tool and made energy-saving changes. This low conversion rate highlights a key limitation of the campaign; the messaging or timing may not have been compelling enough to drive broader engagement. However, by targeting NatWest mortgage customers and Coutts and Co customers, the NatWest campaign did attract users with higher rates of EV and solar ownership, suggesting potential to reach more affluent or sustainability-minded homeowners.

Key challenges and learnings for the sector

The project encountered several challenges that offer valuable lessons for others:

- **Partner alignment and timelines:** Delays in legal agreements compressed the pilot timeline by at least 5 months. The contracts were eventually signed in late 2024. Future projects should establish clear governance structures with project lead, stakeholder and partnership responsibilities identified early in the timeline.
- **Finance product complexity:** No bespoke financial products were launched. This highlights the difficulty of launching new financial products within large institutions and the need for contingency plans.

- **User trust and journey design:** Users were hesitant to share personal details early in the journey – when asked to provide contact details earlier in the process, the number of referrals dropped very significantly. Iterative testing revealed that softer referral mechanisms and clearer installer information improved trust and engagement. Research also showed that users are more likely to progress through the customer journey if access to finance is introduced after installation planning, as was supported by Furbnow's installation-first approach leading to 538 sign-ups.
- **Seasonal timing matters**: Starting the pilot in Spring limited the ability to test heating-related technologies. Retrofit trials should align with colder months to capture accurate data and user interest, specifically when offering heating and insulation-related insights. As the data needed to be collected when there was a significant difference in temperature between the inside and out, i.e., in winter months, this meant the capture and analysis of data was compressed late in the project.

What's next?

Chameleon and Furbnow plan to continue offering the insights-to-installation journey, refining the user experience and expanding their customer base. While the finance component remains under review, the partners are exploring new collaborations and commercial models. Further testing of HTC-based verification and user engagement strategies is planned to support scale-up and inform future green finance initiatives.

Where to find out more?

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