Carbon Co-op

Energy Data Co-op

Final project report; June 2022

Energy Data Co-op was a two year project run by the community energy organisation **Carbon Co-op** under the Next Generation programme funded by Power to Change. It started in 2020 and finished at the end of 2021.

This report sets out some of the learning from the project which we hope will be useful to other Community Energy organisations, support organisations and funders.

We'd really like to hear your thoughts on this project and the subject in general, so please share them via info@carbon.coop or via Twitter, Facebook or LinkedIn.

Section 1 - a summary of the project and key learning.

There's a lot of information in this report, so in this section we've quickly summarised what the project was about and some key learning. If you're interested and want to learn more, there's additional detail in the rest of the report and in the appendices.

The project in brief.

Our analysis is that actors within the energy system are rapidly transitioning into digital and data organisations and that to remain relevant Community Energy organisations need to adapt and develop business models and work practices accordingly.

Carbon Co-op began this project with an existing involvement in digital and data technologies and already employing software engineers on the staff team, but we used this funding to focus on the development of a selection of new householder energy data services, testing them with end users and publicly launching them. We then reflected on our experiences and their relevance to business models and organisational development.

The application of the knowledge generated in the project is therefore relevant for Carbon Co-op but also other Community Energy groups and the sector as a whole.

Some of the things we learnt from this project.

Reflecting on our experiences we came to a few conclusions.

Organisation and staffing

The challenge of skills and organisation

High quality, effective digital development skills and organisational practices are essential to the transition to becoming a digital organisation. But making the organisational changes necessary to accommodate these is likely to be extremely challenging for Community Energy organisations and effective ways of supporting them must be found or groups will become excluded from this high value sector.

Finding the staff

Community Energy organisations are competing with other, mainstream companies for limited numbers of software engineers, technicians and specialists. A tightening labour market means staff can easily command salaries way in excess of what Community Energy groups can pay. However, groups do have some advantages, being able to offer a societal purpose to work, greater employee agency and a

better quality of working environment - all of which are highly valued by potential workers.

Business models and finance

Small margins and revenue stacking?

Our initial assumption going into this project was that digital services would need to be mass market with low cost barriers and that a number of services would need to be stacked to generate a viable business model. Our experiences in this project have changed our view. Our conclusion at the end of this project is that services such as these should be free if possible and should underpin (explicitly or behind the scenes) other, more high value, income generating services.

Start up costs and capital, unfair advantages

Traditional financing approaches are a market distortion that disadvantages Community Energy organisations. The standard route for digital start ups is to build a minimal viable product and sell equity shares to venture capitalists, financing quick growth in hope of further returns - many startups fail, some win big. Whilst Community Energy organisations can access capital, corporate forms mean that that process is relatively slow and there is a natural reluctance to accept high risk. A community-co-operative version of a venture capital fund, one that might accept a degree of failure and benefit from success is one solution to addressing this.

The sector

Does it matter where you live?

Community Energy groups are traditionally geographically located, relating to a specific community, village, town or city. Digital and data services disrupt this relationship. During the pandemic Carbon Co-op's membership grew sharply at 40% a year, in part due to the ability for members to access data services wherever they live. Though extending reach, this may challenge the idea of geographical exclusivity and the solidarity of the sector. One solution might be to franchise digital services so that groups remain locally routed.

Some advice for Community Energy organisations thinking of developing digital tools and data.

We understand that this area of work is new to many groups, so here's a few tips.

Experiment with using, adapting and developing technology

If your organisation doesn't have a track record in digital or data technologies, running or getting involved in hacker or maker space groups is a great way to start, linking up with colleges, universities and other technology providers.

Eco Home Lab, which Carbon Co-op has been running for 10 years, is a good example but there are numerous hacker and coding clubs running around the country. https://www.meetup.com/eco-home-lab-manchester

Use open source technologies

Open tools and technologies are a natural fit with the collaborative and co-operative ethos of Community Energy groups. Using, developing or contributing to closed IP projects effectively cuts our sector out of future opportunities and open source hardware and software is cheaper, more stable, quicker to develop and more robust. Separate but linked to this is a commitment to open data standards that enable interoperability, key to coordination within the energy system.

A great example of an accessible open source software and hardware project is OpenEnergyMonitor: https://openenergymonitor.org

Start building useful tools

If groups encounter a problem or barrier that could be overcome through the development of a new piece of software or hardware, why not have a go at tackling it? We'd advise starting with simple solutions and where possible building on or integrating existing, open source solutions. Where possible an open and collaborative approach should be taken. But tackling common societal problems for the collective good is the route to engaging in digital and data solutions.

'Tech for Good' is a meetup, an organisation and a broad term for simple technology that meets societal needs. Have a look to get some inspiration: https://www.meetup.com/techforgood

Section 2 - the project in a bit more detail.

The future is here.

Community Energy groups were at the vanguard of opening new opportunities for local clean generation, but renewables are increasingly dominated by large scale developers, with many community energy groups increasingly excluded. As the energy transition proceeds, how, where and when we consume and produce energy is rapidly changing. Now, innovative organisations like Octopus, Ripple and Piclo are utilising digital technologies not as an add-on but as the core element of their business model.

The contention of the Energy Data Co-op project is that Community Energy groups can and must play a role in digitalisation, as participants not simply collaborators or beneficiaries. Our role is as trusted, member owned intermediaries, local institutions linked to communities and stakeholders and as a route to securing legitimacy for disruptive technologies and changes to our energy behaviours.

What's an Energy Data Co-op?

The Energy Data Co-op project assessed the feasibility of a member-led energy data co-operative business model, delivering integrated digital energy services.

The project presented the opportunity for Carbon Co-op to design and deliver integrated, scalable, commercially competitive services, transforming ourselves into a 'digital-first' energy services co-operative. Our model has been developed by piloting new services, using Service Design, development and testing to generate data and learning. We believe our agile, 'learning-through-doing' approach creates more robust, relevant and actionable learning than a project involving theoretical planning and desk based research.

We also incorporated a number of innovation practices common in the tech sector, adapting them for a Community Energy context, including: Service Design, Agile Development, open innovation, open source and decentralised, autonomous team collaboration.

Types of data co-op.

We can distinguish between two types of data co-op.

1. A co-operative that offers **specific data services** to its members, selling/protecting data generated from everyday activity from browsing the internet to using a phone. This kind of co-operative is unlikely to directly

engage in any kind of activity other than managing member data. Eg https://data.coop
2. A co-operative generating income based around using data and digital tools in combination with other services. These co-ops might be titled 'digital first' or **'digital organisations'**. For inspiration see Janet Hughes' 'What a digital organisation looks like'.

Our project sought to explore Data Co-op model no.2, though we remain supportive of model no.1.

Ideas around the data co-operative model are explore in this blog by our collaborators Open Data Manchester: https://theodi.org/article/open-data-manchester-testing-the-cooperative-model-for-using-energy-data/

And in this more detailed report authored by ODM for the **Open Data Institute R&D Programme**: https://drive.google.com/file/d/1qCB1yEayDmFq_laL3E8EdzAE6pvRIkXg

What we did.

The concept behind the project was to develop real world digital services and use this development to inform our business and organisational development. Learning through doing.

First we carried out an internal design exercise, and from multiple ideas selected three digital services to hot house development.

Those services were:

- Powershaper Monitor: https://powershaper.io
- The Impact tracker: https://hub.carbon.coop/impact-tracker
- Building Performance Evaluation tools

These services underwent Service Design with iterative service development, testing and evaluation. Each service was taken to a different stage of maturity, with Powershaper Monitor launched and income generating by the end of the project.

We worked with Shortwork to help us understand organisational learning. We carried out the business learning internally with help from the Next Generation consortia. We also worked with Open Data Manchester to do some thinking and research on the concept of 'Data Co-ops'.

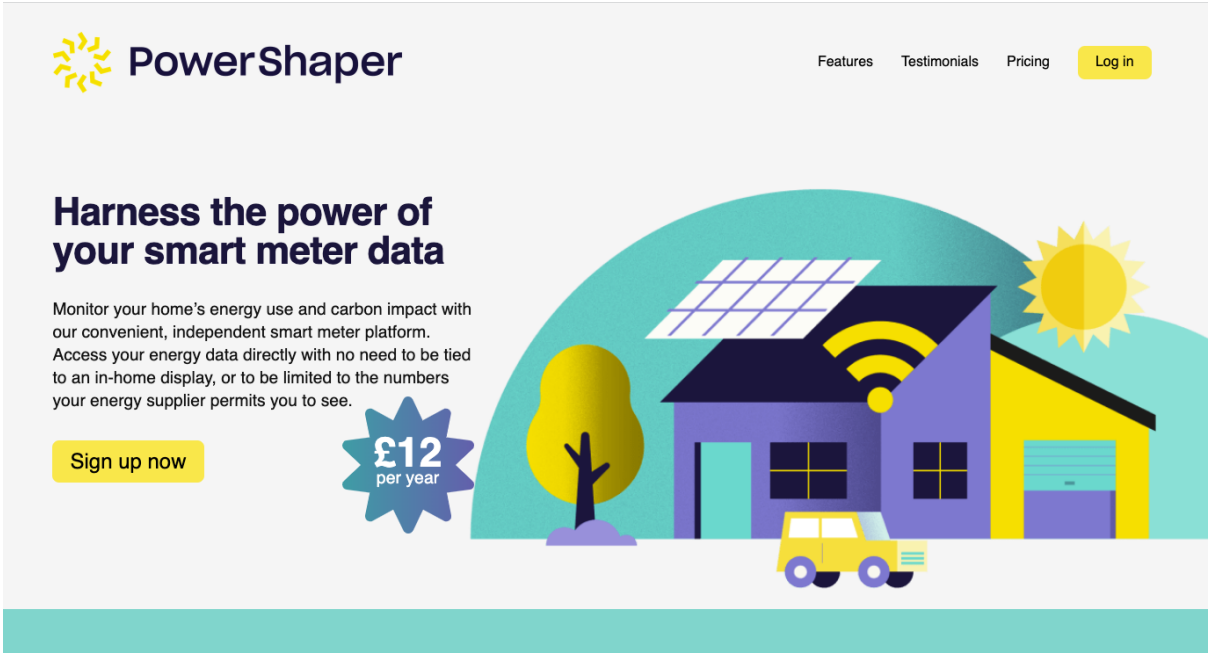
What happened to the services we made?

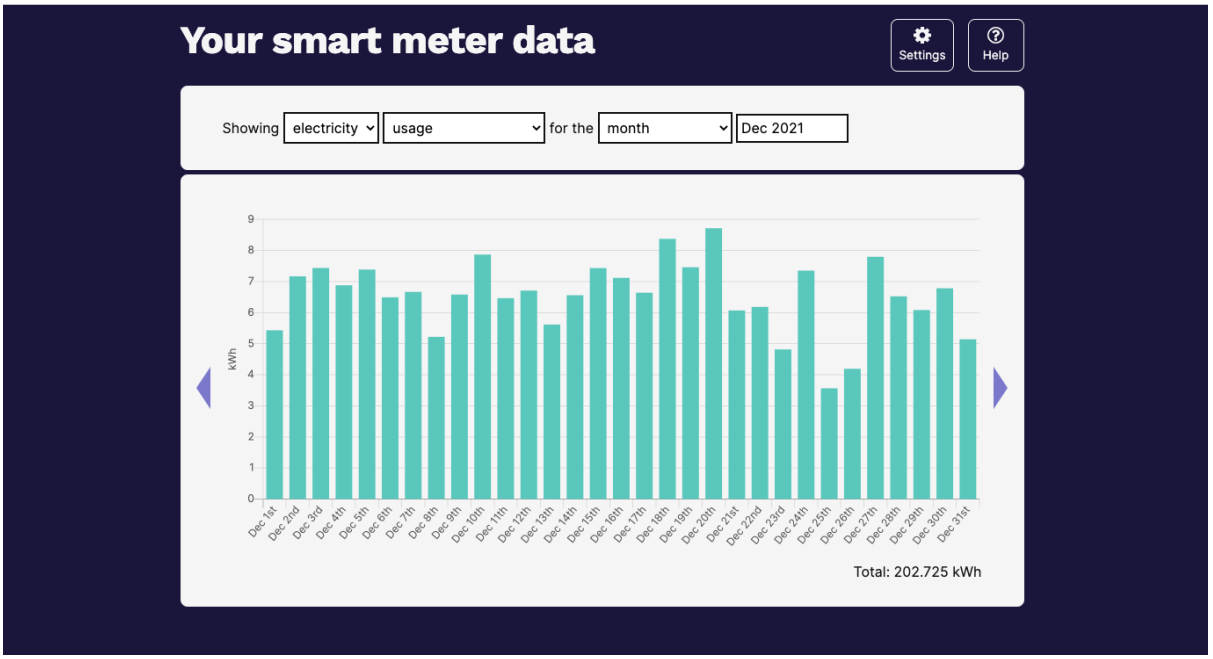
Powershaper Monitor

https://powershaper.io
Powershaper Monitor is a service that allows householders to access, view and download high definition smart meter gas and electricity data via Carbon Co-op's portal. Data is available for the 13 months preceding sign up and then on an ongoing basis. The service allows householders to access data independent of their supplier and to evaluate the impact of energy efficiency and other interventions such as heat pumps or smart meters. Third party access, for Carbon Co-op or other providers, can be enabled, to offer further evaluation.

The public launch of the service took place in August 2021. There are now 105 people using the service. It will be extended to 500 users over the next 12 months.

A Community Energy sector engagement event was run in November 2021, alongside an API launch for the technical/ web developer community. The first replication of the tool has taken place, with NESTA commissioning the service as part of a Heat Pump engagement trial with more planned.



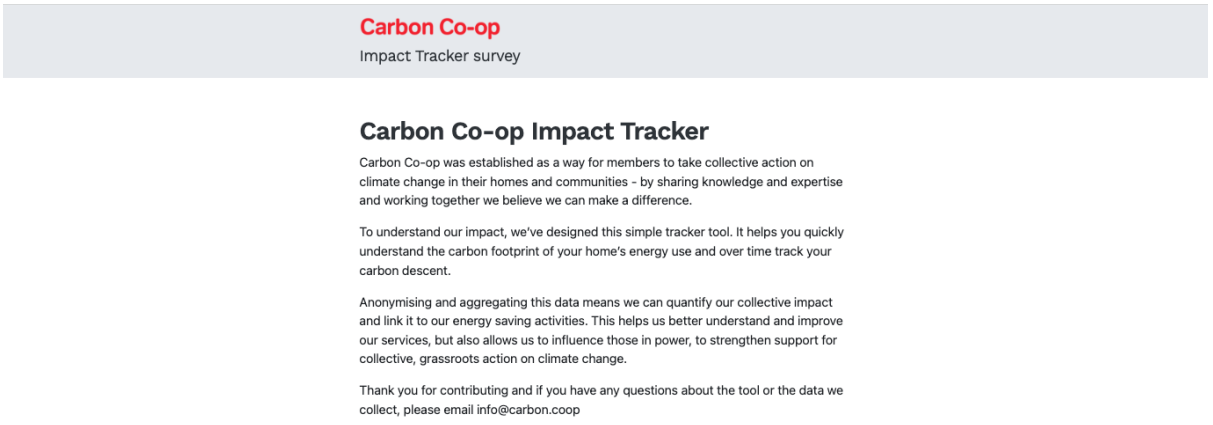


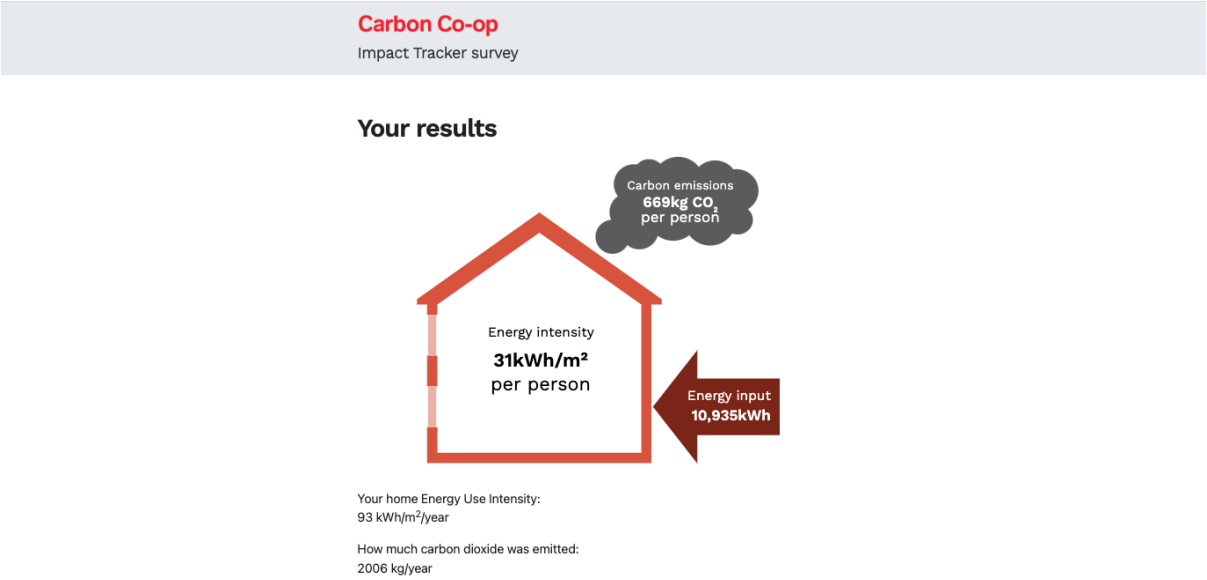
Impact Tracker

https://hub.carbon.coop/impact-tracker

The Impact Tracker service is a simple online tool that enables people to benchmark their home energy performance with a series of simple questions that can be completed in a few minutes. Repeated sampling enables evaluation of progress towards decarbonisation goals and the results can be shared with others.

This has been launched with over 100 Carbon Co-op member users. Discussions are taking place with other community energy groups to replicate the tool.





Building Performance Evaluation service

This service encompasses a range of hardware (sensors) and software (dashboards) tools that enable householders and practitioners to evaluate the impact of domestic energy efficiency measures.

This service was the least developed of our three services, but has a huge potential to inform future services and to be used throughout the sector.

This service is in the early stages. Four test kits are in homes and an energy dashboard is in development.

Section 3 - thinking about business models.

Lessons from Powershaper Monitor.

The most mature service developed in this project was Powershaper Monitor and we did the most amount of business planning for this service.

Our initial pricing and sales plan was for a low value/high subscriber client base with a subscription model price point of £12/year and free for Carbon Co-op members (who pay £35/year).

Initial sales growth after the launch in autumn 2021 was positive but marketing effort was required to maintain growth. Meanwhile, Carbon Co-op membership growth took off, increasing by 40% a year, in part due to the inclusion in the membership offer of non-geographically focussed services like Powershaper Monitor.

At the same time, a small number of competitor services launched, available for free, leading us to question our use of a subscription fee and what unique features our service might offer.

Latterly, a number of third party organisations have approached Carbon Co-op to procure the Powershaper Monitor service for their clients/beneficiaries and this area now offers us the potential to establish high value consultancy work.

In early 2022, Carbon Coop used access to Powershaper Monitor as an incentive to participate in our Heat Pump Challenge project. Something that provided highly effective at engaging users.

Finally, access to Powershaper Monitor now drives and underpins other Carbon Co-op fee earning services such as Powershaper Flex (for verification of flex) and People Powered Retrofit (for baselining and evaluation).

Low value/high value?

We concluded that the reach of the Powershaper Monitor service is far wider when sitting behind other consumers facing offers/services (membership/Powershaper Flex/People Powered Retrofit) and as licensed and/or augmented for third party consultancy clients (charities, social enterprises, agencies, community energy groups). Furthermore, making Powershaper Monitor free acts as a loss leading entry point into our other fee earning offers/services.

Our new Powershaper Monitor strategy.

As a result of this project we have updated and reformulated our Powershaper Monitor business development strategy.

- Embed Powershaper Monitor as core element of other, high value services
- Use as a ‘free to use’ service at the ‘wide-end’ of the engagement funnel
- Use Powershaper Monitor as a feature to build Carbon Co-op membership
- Expand Third Party access and maximise consultancy income

Section 4 - organisational learning

How digital practices change organisations.

The evaluation of the organisational learning from the project was carried out by Shortwork a participatory action research social enterprise and aimed to understand the strengths and weaknesses of the project in terms of:

- The impact on Carbon Co-op and its functions;
- How this knowledge might be shared and built upon for future digital services and projects.

The evaluation involved interviews, group sessions and other research. These recommendations are taken from a longer organisational learning report.

Key themes

- User/stakeholder testing and involvement
- Team learning and sharing during the project
- Changing roles and responsibilities
- Project management/process
- Impact of digital developments on carbon reduction
- Ways of using the learning

Organisational structure, culture and collaboration recommendations

- Develop shared understanding of software tools and administration protocols: for example streamlining company comms and online filing systems, while mindful of company software development frameworks.
- Challenge team ‘bubbles’ through effective communication, shared content and inviting challenge and improvement: for example, inter-team activities to integrate better with other projects; tools and processes to challenge “group-think.”
- Ensure clear organisational structures, roles and vision: clarify functions, responsibilities and accountabilities, as well as training needs, from the outset of the work.
- Adopt project work practices and rhythms and understand each other’s ways of working: for example, agree agile approaches, regular formal and informal opportunities for check-in and reflection.
- Embed user testing and expertise within projects from inception.

User testing and engagement recommendations

- Develop a structured approach for engagement throughout the project and beyond, that ensures user testing starts before new products are iterated.
- Make use of existing forums (e.g. EcoHome Lab, Facebook etc) to engage further with the members, particularly online events to reach more people more of the time.
- Consider a communication and engagement strategy for the full range of audiences (internal and external) which might include:
    - Team members working on other projects
    - Partners, formal and informal
    - Funders and potential funders
    - Board
    - Potential/new/existing members - ie wider Community Energy sector
- Provide opportunities for skill sharing on user engagement across the organisation.

Documentation, embedded learning and discussion

- Define the audience(s) for the learning, but consider how to combine resources and outputs across those audiences.
- Look for opportunities to tell the story of the project, using member case studies.
- Find skills in marketing comms, e.g. video/visual mapping.
- Research further the benefits of selling versus sharing the digital offer for carbon reduction.

Section 5 - what we're doing next

Some next steps.

The project has generated a great deal of organisational learning that is influencing an ongoing organisational development and restructuring project at Carbon Co-op.

Additionally, a number of other significant developments are ongoing in the further development of the Energy Data Co-op services.

Developments to **Powershaper Monitor** are discussed above, but the service is becoming an integral feature of Power Powered Retrofit's One Stop Shop offer and the Powershaper Flex local flexibility aggregator service.

The **Building Performance Evaluation** toolkit is also being integrated into an offer for People Powered Retrofit clients, to enable diagnosis of specific building issues and the evaluation of projects.

The **Impact Tracker** tool is in development for use with other Community Energy organisations.

Most significantly, Powershaper Monitor and Building Performance Evaluation services are being integrated into **OpenEnEffs**, an InnovateUK-funded Carbon Co-op project to develop a scalable and open evaluation approach for energy efficiency interventions based on the CalTRACK methodology. This project has the potential to inform the delivery of entire government energy efficiency programmes and move the UK away from outdated and inaccurate deemed or modelled assessments and towards a more accurate and scalable 'pay by performance' approach.

Finally, Carbon Co-op has contributed to the development of a prospective Power to Change **'Community technology programme'** which could seek to address some of the issues and barriers outlined to Community Energy participation in digital and data technology development and exploitation.

The Appendix.

This section has some, hopefully useful bits of information for people interested in working more in these areas.

Common digital and data concepts

A Service Design approach

Service Design is an emerging methodology, an approach that utilises a set of collaborative and participatory tools and practices to create well-designed services that satisfy end users needs whilst enabling ongoing feedback for continuous iteration, development and improvement.

Marc Stickdorn and Jakob Schneider, authors of the bestselling book *This is Service Design Thinking*, provide five basic principles that underlie service design:

1. **User-centred**
   Services must be designed from a clear understanding of the user and their needs and capacities, by doing qualitative research. Designers should not make guesses about what the users want or how they will respond.

2. **Co-creative**
   Services should be designed by involving all relevant stakeholders in the design process. So for instance, engineers would be involved to avoid creating a service that meets the customers' needs but is very hard to service or maintain.

3. **Sequenced**
   A service will have distinct phases over its lifetime with different processes occuring in each phase. They will be different depending on the nature of the service but might be recruitment, onboarding, delivery, closure and review. Each should be considered in the design of a service.

4. **Evidenced**
   Service experiences should be visualised or otherwise made tangible. An interaction with a service should be evidenced with a tangible change - even if this is only the receipt of an email or a change to an indicator on a dashboard. This forms part of the 'story' of the service experience and a sense of progressing through it.

5. **Holistic**
   Whilst designing services it is important to consider the wider context in which the service will be delivered, including the different ways in which the service might be used in different contexts. The cultural, social and physical

contexts will all shape the user's interaction with a service and need to be taken into account.

Service Design is an approach adopted by new tech companies as well as public service providers including government departments.

https://www.gov.uk/service-manual
http://thisisservicedesignthinking.com

The Service Manager role

Sometimes known as a Product Manager, a Service Manager is in charge of service direction and requirements based on market research, customer feedback, and development capacity. In many ways the Service Manager is the advocate for the 'service' within the team, ensuring designers, developers and other team members are working to the best interests of the service and ultimately end users.

Agile Development and Minimum Viable Product (MVP)

Traditional forms of development flow in a 'waterfall'. Long specification documents are written by product designers and then handed over to developers, developers spend their allocated budget building products based on these documents and the products are then released when the specification is fulfilled.

This approach to development has been much criticised as it means end users rarely test products before release and as a result products may be inappropriate or fail to meet expectations by which time a large amount of resource has been spent. Complex end products are costly and hard to re-engineer or change on the basis of customer feedback.

An alternative approach is based around producing Minimum Viable Products: the smallest, simplest product required to carry out user testing. The MVP is built out very quickly, it may be incomplete, lack glossy design or be dependent on manual operation for functionality, but it will enable users to test the product and to identify key advantages and disadvantages, producing valuable testing information that can then be used for further development and the creation of the next MVP.

Creation of MVPs is iterative and the aim is to create many MVPs in order to generate valuable user testing data and create the best eventual release product possible.

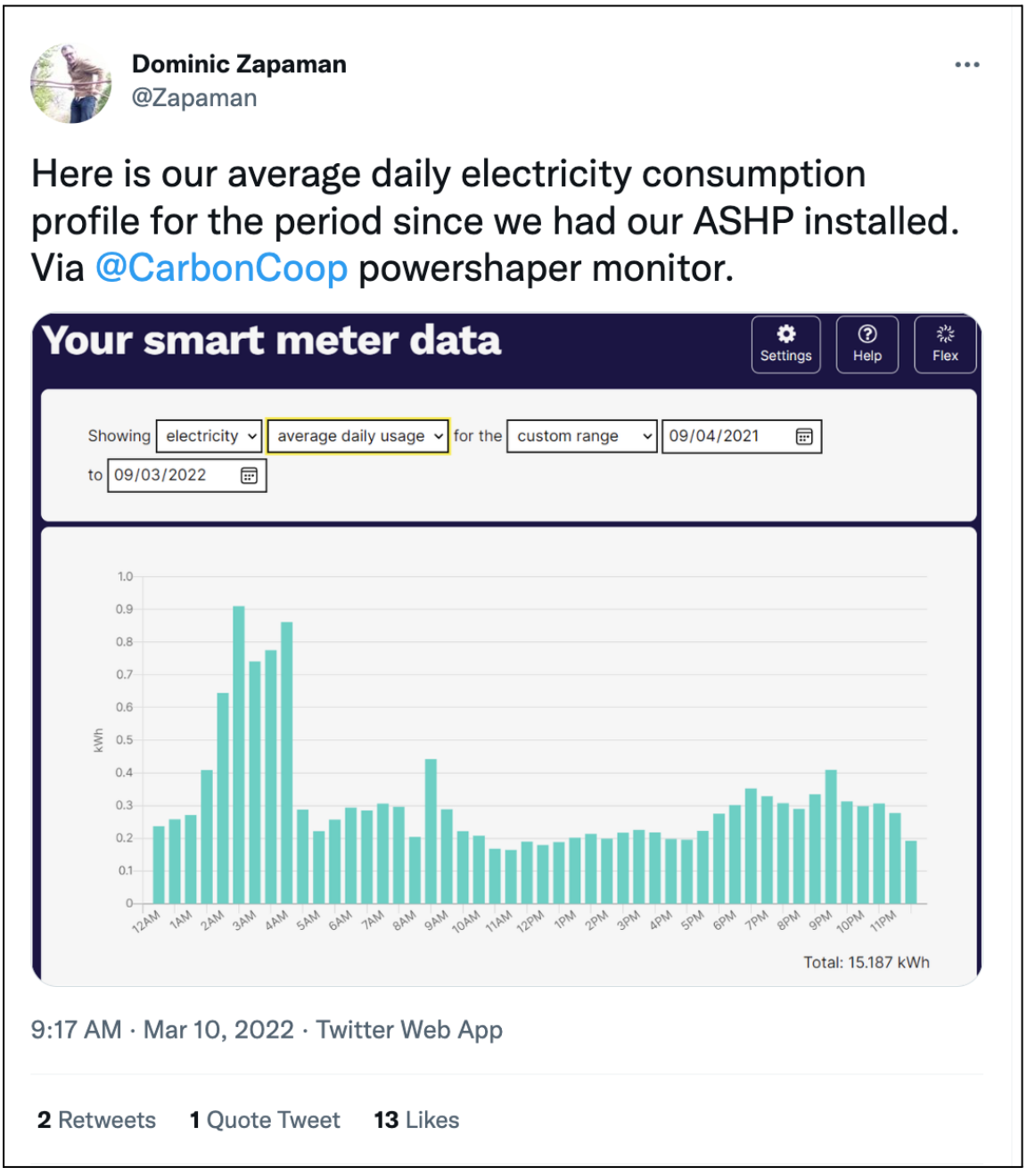
This is an example of Agile software development - a practice that has become the dominant form of development since the mid 2000s. It prioritises flexibility and ongoing collaboration over specification and compliance, and encourages frequent iterative releases of software improvements.

Agile user testing

Carbon Co-op has used this Agile user testing methodology in the past: to develop My Home Energy Planner, for elements of our H2020 Nobel Grid project and to develop the Carbon Co-op Hub. Many of the services we intend to pilot within this project already have a prototype tool or product in place, so new development is unlikely to be a block to achieving real world testing. The more involved and time-consuming aspects involve developing service delivery models to enable testing: end-to-end customer-orientated processes that allow us to test consumer-ready elements of the service; and customer recruitment: although Carbon Co-op has a ready supply of testers it can be time consuming to recruit, involve and collect data from people.

Social media engagement

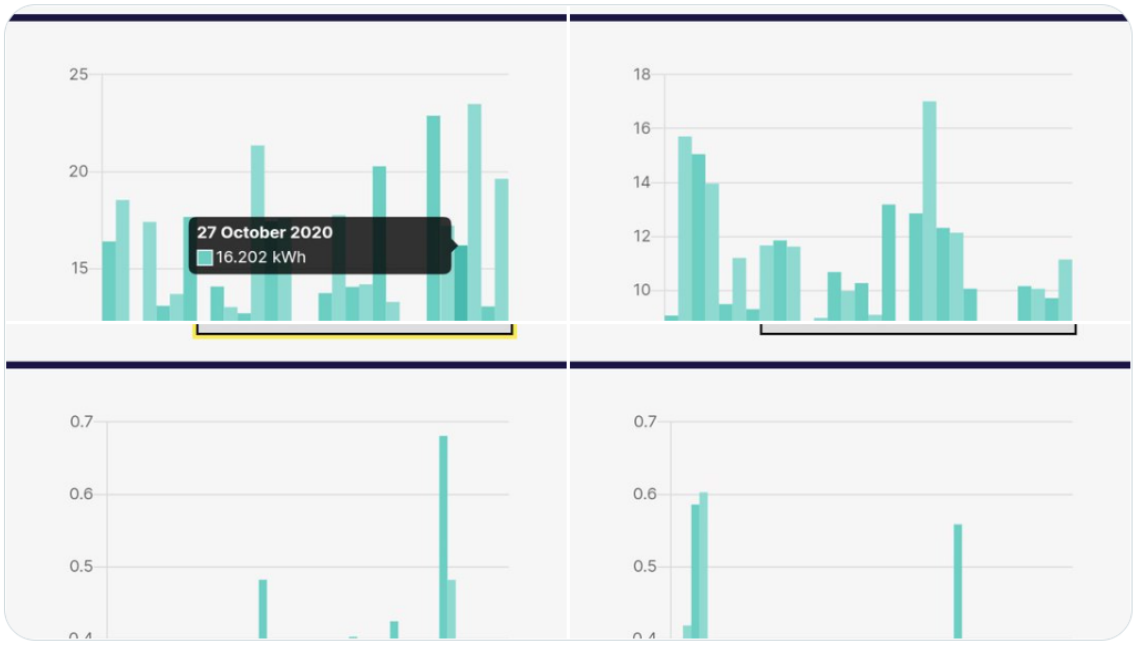
As an organisation that seeks to democratise energy and put technology in the hands of citizens, one of the most encouraging aspects of the project was seeing participants using social media, to demonstrate the impact of the tools but also to share learning and ultimately generate learning for Carbon Co-op on how the tool is being used that can be fed back into the future development of the service.



https://twitter.com/Zapaman/status/1501849770175913984

The MFJ 🌍
@MFJ_tweets

Pretty happy with this. We've been really concentrating on reducing our power consumption lately. This month so far down 30% on same period last year.
Have also been conscious to automate energy intensive devices to off-peak periods when grid demand lower @Zapaman



10:42 AM · Oct 31, 2021 · Twitter for Android

1 Retweet **2** Quote Tweets **5** Likes

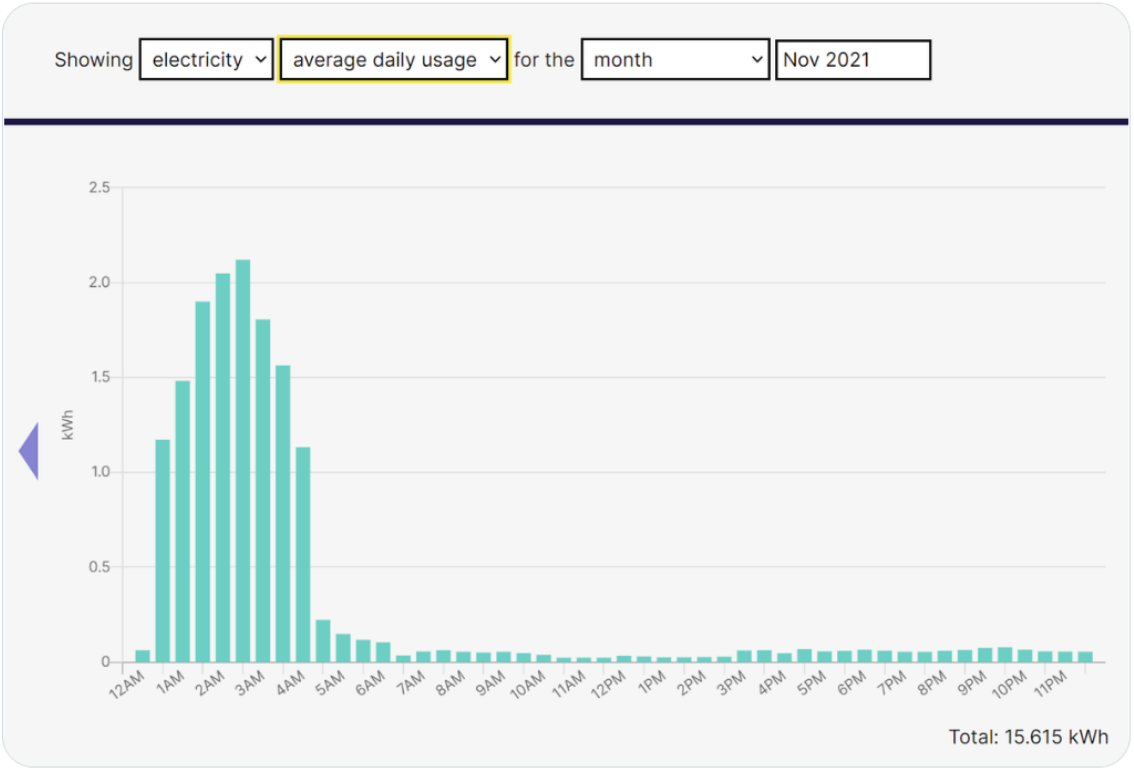
https://twitter.com/MFJ_tweets/status/1454760741127528453

Mick Wall
@Zarch1972

Replying to @MFJ_tweets @Zapaman and 2 others

Great shout, forgot about that option in the @CarbonCoop PowerShaper monitor.

I love the look of mine so far this month!! 😀



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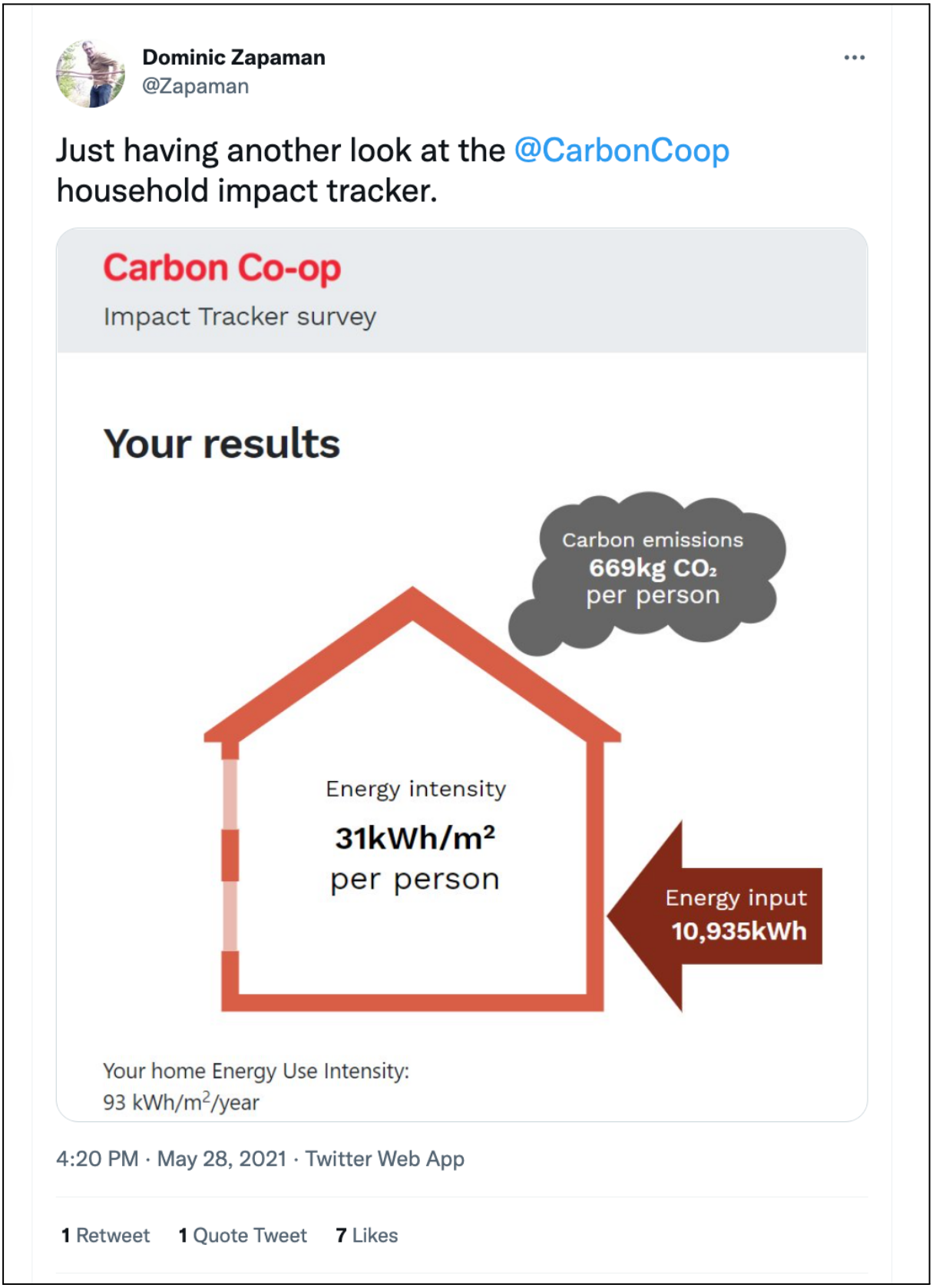

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https://twitter.com/Zapaman/status/1398298037777219585

The Business Model Canvas: Smart Meter Service

Key Partners

- DCC intermediary
- Other Community Energy partners
- Weather/environmental data providers
- Providers, installers

Key Activities

- Improvements to customer journey for signing up, better signposting

Key Resources

- Development
- Reliable data access to SMETS2 meters
- Smart meter rollout

Value Propositions

- Benchmarking consumption to validate interventions (retrofit, PV install)
- Insight into energy consumption patterns to support future purchasing decisions / interventions.
- Forecasting based on local generation and past consumption patterns to inform behaviour (implicit DSR)
- Incorporation of consumption/forecasting data into open home automation systems (inc explicit DSR)
- Better informed tariff comparisons to find best deal

Customer Relationships

- Carbon Co-op trusted to hold household energy data long term
- Both Carbon Co-op members and service users

Channels

- Social marketing via energy-interested communities
- Membership communications
- Synergies with other services/activities
- Other Community Energy groups

Customer Segments

Smart meter users who are:

- Engaged with energy or climate issues
- considering a change of energy tariff
- undergoing retrofit (for benchmarking)

Housing associations and other providers with retrofit projects (for benchmarking).

Cost Structure

- DCC intermediary subscription
- Maintenance & development
- Sales and customer support
- Marketing

Revenue Streams

- Flat annual/monthly fee for service
- Subsidised by revenue from other services that incorporate smart meter data
- Subscription cost structure

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DESIGNED BY: Strategyzer AG
The makers of Business Model Generation and Strategyzer

The Business Model Canvas: Impact Tracker

Key Partners

- Technical partners
- Carbon Co-op members central to design and testing
- Carbon Co-op staff with eye on member services and crossover with other services.
- Software developers – integration with the CRM
- Input from Carbon Co-op board - link to the Carbon Co-op Ends
- Designer
- If replication of interest, then trusted organisational partner as participant in service design

Key Activities

- Consultation with members – sense checking what data is important to them, what are they looking to record in terms of impact
- Review & update the initial survey questions, metrics, benchmarking
- Develop process
- Understand 'back-end' functionality + plug-ins
- Testing
- Create frontend
- Establish maintenance requirements
- Testing and rollout.

Key Resources

- Expertise in visualisation, useability and web interfaces
- Technical expertise to ensure metrics, methodology and data sources are sound
- Software tool/platform
- Integration into existing tools
- Developer time

Value Propositions

- Tracking current energy and carbon use, comfort, expertise
- Quantify impact of membership on personal journey of saving carbon, energy, achieving comfort, learning
- Visualising and communicating impact as a way of influencing, sharing knowledge, inspiring others or setting ambitions
- Increase pride and confidence
- Goal setting
- Gateway into other services
- Third party integration into Hub (eventbrite, etc), integration of other impact measuring (e.g. learning platform)
- Demonstrating impact to funders

Customer Relationships

- Offered as part of membership package
- Mainly automated, with customer service element via membership officer
- Durational

Channels

- Carbon Co-op member portal
- email / phone
- Marketing as part of membership offer
- For replication via existing partners and social marketing channels

Customer Segments

- Homeowners:
  Civic minded retiree
  Climate Pragmatist
  Climate Idealist
  Techie person w interest in saving energy/carbon
  Home Improver, likes comfort
- Techno focused w money, likes eco bling
  Low income, want to see outcomes, save energy
- Non-home owners:
  Activists/Civic minded w interest to influence
  Renters campaign/pressure tool
- For replication of tool:
  Housing Associations
  Community Housing groups
  Sustainability groups

Cost Structure

One-off:

- Software development backend
- Metrics and methodology backend
- Visualisation/design frontend

On-going:

- Software maintenance and hosting? - ??
- Initial member service and data maintenance (membership officer)

Revenue Streams

- Membership fee
- Replication/consultancy
- Indirect serves as impact tool for funders
- Indirect serves as gateway to other services

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DESIGNED BY: Strategyzer AG
The makers of Business Model Generation and Strategyzer

The Business Model Canvas: Building Performance and Evaluation

Key Partners

- Partner architects, retrofit co-ordinators or contractors for whom we work as subcontractors or advisors.
- Emon / Megni / open source community for support with tech.
- Housing associations who might be repeated clients
- Could perform data gathering & outsource the reporting work to specialists.

Key Activities

Initial:

- Specify system
- Pilot
- Real life benchmarking/ validation

Delivery:

- Design installations
- Install
- Maintain
- Review data & report
- Deinstall

Key Resources

- Test arsenal: purchase of fleet of sensors, multiple HEMS + associated hardware.
- Software environment & data warehousing
- Trained staff (in technology, building performance and data analysis)

Value Propositions

- Gives insight into the performance of building fabric allowing better diagnosis of problems & prescription of upgrade work.
- Allows benchmarking before & after retrofit to prove value - could be delivered as an independent third party.
- Delivers insight into lifestyle interaction with fabric, replacing detailed (also intrusive & inaccurate) surveys
- Fully delivered and minimally invasive service
- Allows troubleshooting of issues with insulation retrofit

Customer Relationships

Retrofit professionals:

- Specialist subcontracted support service

Householders:

- Resource for ppl undergoing retrofit journey as part of PPR
- Impartial standalone service for DIYers/self-builders & clients of other professionals
- Route into PPR for ppl experiencing issues with their house

Housing stock managers:

- Service trusted to investigate reported problems

Channels

- Word of Mouth
- Synergies with PPR sales channels?
- Professional periodicals/email newsletters
- Offers to members
- Social media, esp video
- Trade shows?

Customer Segments

- Retrofit professionals
- Able-to-pay homeowners planning retrofit measures
- Officers responsible for the quality of housing stock at local authority/housing associations.

Cost Structure

- Wages
  - System development/coding
  - Data acquisition (for job & initial training)
  - Report writing & job admin
  - Marketing
- Technology
  - Sensors, HEMS, batteries
  - Maintenance
- Transport, admin & marketing
- Validation (certification ?)
- Data infrastructure

Revenue Streams

- Per-job payment commissioned by householders or other retrofit professionals (includes full report)
- Data collection (only?) subscription
- Remote management subscription
- Income as part of PPR service

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