CASE STUDY

The Challenge

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The project focused on attempts by the UK energy industry to foster adoption of low carbon heating technology by mainstream customers. The UK government's targets (to deploy 600,000 heat pumps per year by 2028, and up to 1.9 million per year by 2035) are ambitious, since studies suggest widespread deployment of innovative energy technology requires several decades to reach maturity. Key factors influencing adoption of new energy technology such as heat pumps are thought to extend beyond mere economic comparisons to include knowledge and understanding, attitudes and beliefs. The detailed processes by which these factors operate are researched within the specialist fields of psychology, education and neuroscience, suggesting these fields might valuably inform design and communication of innovative energy products. However, insights from these fields are not routinely exploited to inform communications with potential customers. The project addressed the challenge of identifying relevant insights from these diverse fields and to produce these in an accessible form for use by the energy sector when seeking to develop positive trusting relationships with consumers.

The project aimed to bring together current understanding of non-monetary aspects of consumer-decision making from psychology, neuroscience and education to theoretically frame a "learning journey" of customers from current to future energy worlds. It sought to reveal this journey in a form suitable for communication to the energy industry inductor and to identify factors contributing to trust and positive responding, as well as potential touchpoints and levers that would support consumer adoption of renewable energy technologies.

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This 2-year project comprised the following stages:

1. Grounding/induction of Principal Investigator (PI) via on-site meetings with key staff within Catapult and through active participation in a 2-day workshop attended by energy sector personnel developing messages for customers.
2. Initial scholarly review and synthesis of findings by the PI, to identify concepts potentially relevant for understanding consumer decision-making and behaviour.
3. Representatives of the energy sector were recruited via Catapult's network of energy company contacts, product managers/innovation managers within the energy sector; policy makers and local authorities, and also by the RiR attending an energy sector conference.
4. 11 interviews with stakeholders in energy sector were undertaken, providing understanding from industry that shaped focus and messages (language etc) from the science, providing quotes for the technical report that linked the science with experience, helping to identify further areas in the science to review. Semi-structured one-to-one interviews of participants helped to elicit their response to the initial review, aided by its executive summary in graphic form. The interview was first "grounded" with a discussion of the participant's current perspective, concerns and perceived opportunities regarding heat pumps. The executive summary (shared beforehand, with the full review) was discussed, with questions eliciting views on which concepts were of greater value and why, and how revision of the review might improve its value. Data was also collected re: insights and misconceptions arising.
5. Interview data was transcribed and subjected to thematic analysis, to gain further insight into how participants perceive challenges and their relation to presented research concepts.
6. Further scholarly work and revision of the review was then undertaken in the light of the above, to produce a second iteration of the review with findings re-presented as a Customer's Learning Journey. Development and communication was further informed by interviews with two heat pump adopters and an analysis of public forum discussion.
7. The RiR then worked with Catapult staff to include insights into broader messages and resources being developed for the energy sector.

Result

As a result of this project, we can now talk about the customer's "journey" in terms of their cognition and emotions when considering buying innovative low-carbon technology. The concepts that comprise this journey are supported by state-of-the-art findings from the fields of neuroscience and psychology.

Potential customers arrive on their energy journey with diverse knowledge, attitudes, existing levels of self-confidence in different areas, and ideas about what others, like themselves, would consider a normal approach. These factors influence decisions along their journey but, importantly, are also influenced by their experience on the journey. As they engage with the issue of possibly buying a heat pump system, the customer will seek out advice from heating companies but also from their social networks (online and face-to-face). This can lead to a change in their understanding of the technology and what's involved but also cause a shift in attitudes and their perceptions about themselves and others' energy norms – influencing whether they continue with their journey. These shifts will also influence the customer's ultimate decision to commit, with the experience of installation contributing to these factors further and how they come to reflect upon the decision they have made – with their own experience influencing others in their social networks. Eventually, a customer's personal experience of the long-term running of their system will determine 1) their attitudes towards heat pumps, their 2) perception of how well they can operate the system to their benefit, and 3) whether people "like themselves" should have a heat pump – all of which may feature in how they present their experience to others – so influencing their decision whether to invest. This journey includes a range of potential emotions that include anxiety, curiosity, frustration and excitement – all of which can be influenced by providers of the technology and will help determine the extent to which the customer is able to develop trust and commit.

Impact

Concepts have been identified that enable the energy sector to scientifically understand and assess customer experience. Evidence-based communication levers and touchpoints have also been identified to help build positive customer relationships and support promotion within the sector. For example, insights related to initial customer engagement include the following:

-Psychological distance, framing, and understanding are more challenging for mainstream consumers than for early adopters.

-Many aspects of effective initial communication engage us by activating the brain's reward system through novelty, curiosity, choice, shared attention, and reward uncertainty.

-Environmental messaging benefits from a balance of positive and negative emotion—combining hope with concern.

-"Affective priming," or reminding people of their environmental motivations, can help drive pro-environmental decisions. This includes maintaining a positive "warm glow" and evoking awe.

-Two trust-building strategies reflect different brain systems: rational evaluation of benefits, and judgments about trustworthiness.

-Consistency, even in small details, is critical.

This knowledge can help the energy sector promote low-carbon technologies and support the UK's progress toward Net Zero. The model offers a simple entry point for those new to communications, outlining clear actions based on science.

Energy Systems Catapult

"The collaboration has provided access to scientific learning and expertise in the fields of neuroscience, education and psychology that we would not otherwise have had. We now have the understanding and tools we need to influence the sector to engage consumers effectively and encourage low carbon technology uptake." - Rebecca Wilkes

Paul Howard-Jones

"This project has helped develop a bridge between our burgeoning scientific understanding about human behaviour and the day-to-day needs of the energy industry in their attempts to develop positive trusting customer relationships."

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