The Smart Energy Home and Cross-Promotional Opportunities in Energy Efficiency

Northeast Energy Efficiency Partnerships (NEEP), December 2017

Introduction

As residential efficiency programs are looking for new ways to bring in participants, the individuals purchasing smart home devices offer a potential new group of customers for greater efficiency. Likewise, customers who are investing in home efficiency retrofits may be an untapped audience for outreach and education on smart home products. This brief works to identify opportunities for cross-promotion across these two groups, the efficiency seekers and the smart home chasers, and increase participation in both efforts.

Parameters: What do we mean by "Smart Home" and "Energy Efficiency Retrofit"?

For the purposes of this document, we are focusing on narrow elements of the smart home and residential energy efficiency retrofits. Within the smart home, we are focusing on those products and technologies that offer energy savings; smart HVAC and water heating controls are the largest and most commercialized energy savings opportunities at present, though plug load and appliance controls do offer benefits in some cases.[1] For energy efficiency retrofits, we are referring to larger residential investments in energy efficiency. These could be home performance envelope improvement or large investments in new, highly efficient HVAC or water heating equipment such as air source heat pumps or heat pump water heaters. Retail efficiency investments, such as lighting and appliances, certainly have a role to play in improving residential efficiency, but are less of a focus for this document.

The Opportunity: Bring More Stakeholders into Efficiency

If you've ever tried to explain "energy efficiency" to friends or family, you've likely struggled with how to keep their attention. Have you ever brought up the concept of the "smart home" in casual conversation? If you have, you'll quickly find that some people get excited and want to engage whereas others will disconnect, looking to move the conversation onto another topic. Research, surveys, and trends have documented that the majority of the U.S. population is neither an energy efficiency nor smart home enthusiast.[2]

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[1] NEEP 2016, The Smart Energy Home: *Strategies to Transform the Region*. http://neep.org/smart-energy-home-strategies-transform-region

[2] Shelton Energy Pulse 2015 showing only 27% of the population will consistently prioritize energy efficiency across purchases and behaviors. Shelton Group'd Smart Home Gender Gap Energy Pulse 2015 shows a 13% enthusiast rate for the smart home.

While this may seem like a negative finding—that most people are not committed to energy efficiency nor the smart home of the future—there is a clear silver lining. Because of the many potential energy efficiency and optimization benefits of the smart home, stakeholders who are not enthusiastic about efficiency but are interested in new technology may actually be purchasing energy-saving products for their smart home features. A perfect example would be a homeowner who purchases a smart thermostat to because of the remote control and interaction with their new gadget, unintentionally saving energy[3] through the thermostat's HVAC optimizing algorithms. These individuals may not invest in insulation or air sealing, but are happy to connect their smartphone to a new app.

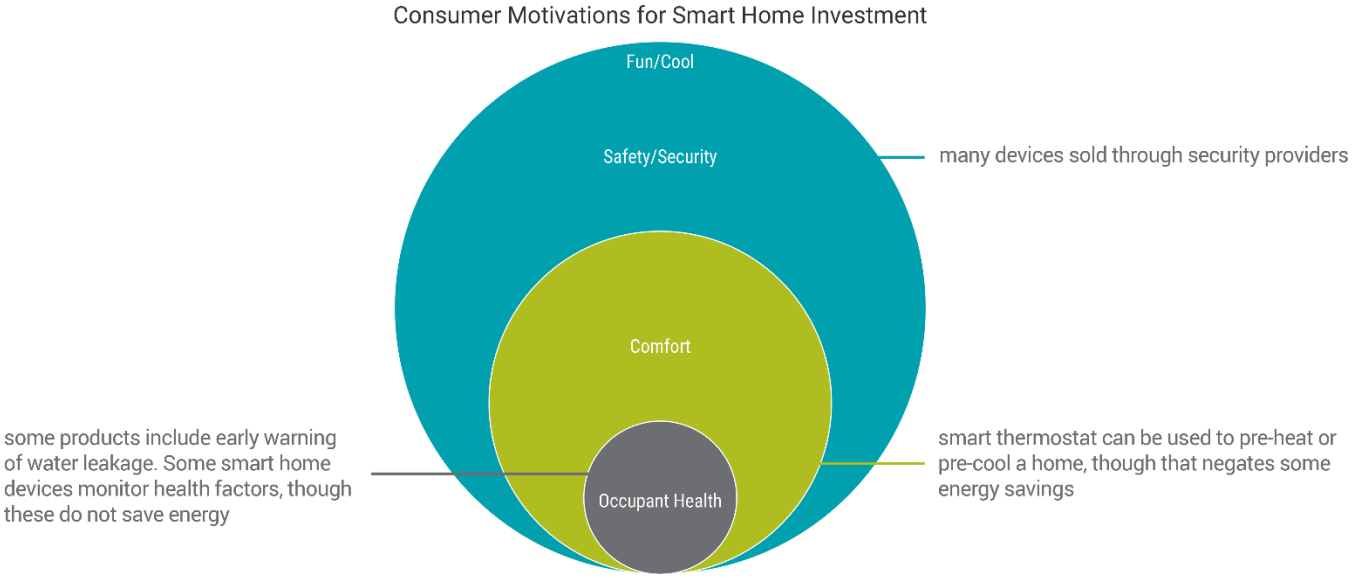
Conversely, for those looking to increase adoption of smart home technology, there is an opportunity to bring customers who are focused on comfort, savings, and energy efficiency into the smart home market. Through face-to-face interactions that exist in most whole-home-retrofit or even walk through audit programs, contractors can also incorporate appropriate smart home devices into the list of services they offer.[4] Customers who would otherwise be the last to purchase a new gadget may instead be persuaded to invest in a smart thermostat as part of a larger home efficiency project because of the practical benefits in can bring to their home.

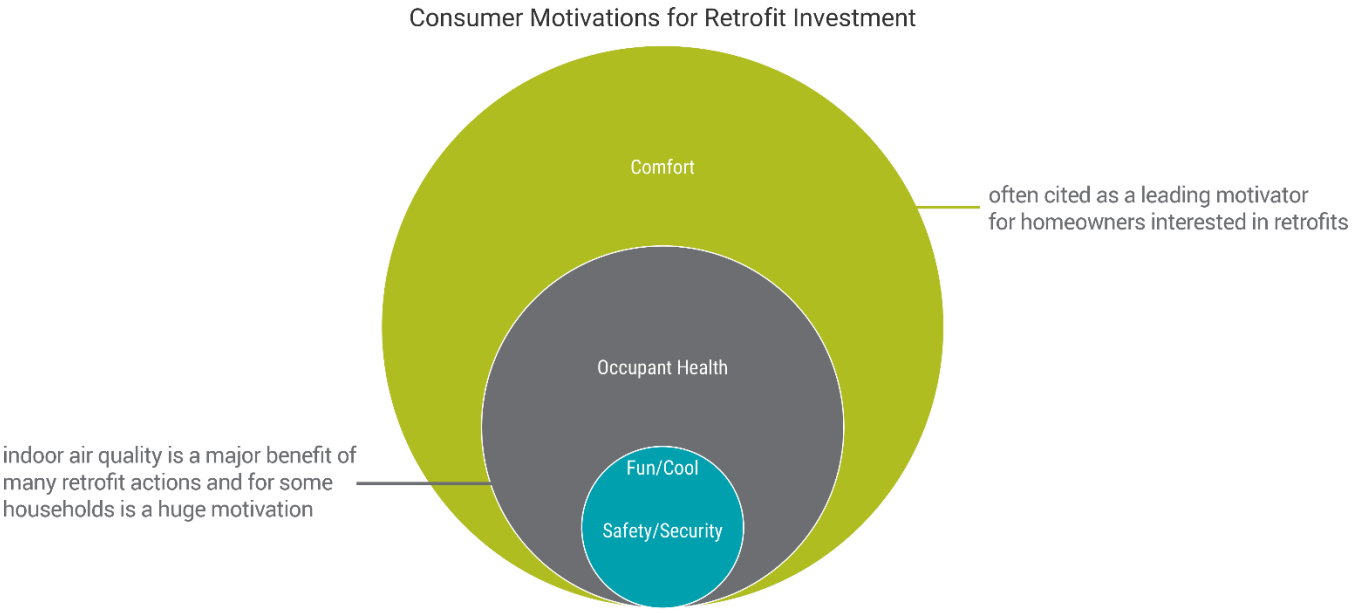
This cross-fertilization of users will become more and more important as smart home devices work to attract customers beyond the early adopters, and efficiency programs work to effectively bring more customers into their deep efficiency efforts.

The Challenge: Gaps in Interest and Understanding

When exploring cross-promotional opportunities, it is critical to understand the motivations behind an investment. In the case of smart home and energy efficiency retrofits, what motivates action is sometimes the same root intention and often different. The images below show the cross-cutting motivations between a smart home and an energy efficiency retrofit investment. The size of the circle reflects the size of the motivation for these two investments. There is significant potential to leverage individual motivations to push smart home users toward efficient home retrofits and vice versa.

[3] Particularly when the smart thermostat is ENERGY STAR Certified meaning data from installed thermostats demonstrate a reduction of the HVAC runtime, weighted across climate zones in the US.
[4] NEEP, 2017, http://www.neep.org/contractors-guide-smart-home



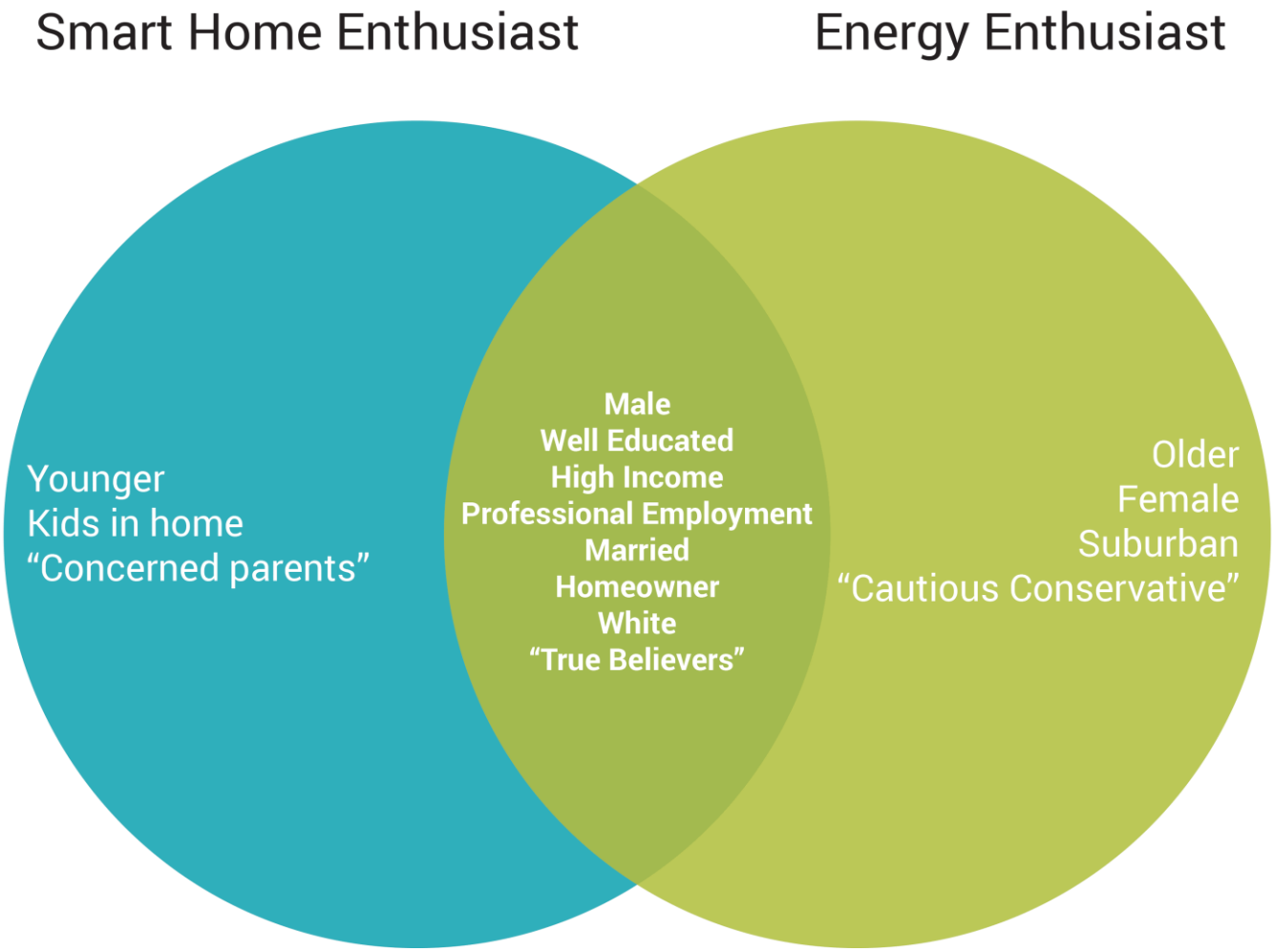


The Need: Understanding Your Customer

Significant research has been conducted to better understand the smart home and energy efficiency customers as the both, especially the early adopters, are somewhat unique. Supported by recent E Source surveying,[5] research conducted through comprehensive surveys by the Shelton Group has

[5] E Source 2016, *Customer Perceptions of Home Energy Management*

identified some of the core similarities and differences between smart home and energy enthusiasts.[6] In the Venn diagram below, the key traits identified by the Shelton Group are listed, with common traits in bold in the center.



There is crossover between many characteristics of current smart home enthusiasts, including income, education, race, and professional employment. Homeownership was also a major commonality: both smart home investments and energy efficiency retrofits are investments more likely to be made by those who own a home or who are very invested in their current residence. Two of the most significant differences in the demographics are age and gender.

[6] Shelton Group Energy Pulse 2015 and Smart Home Gender Gap special report: https://sheltongrp.com/energy-pulse-2015-special-report-smart-home-gender-gap/

The Process: Influencing Decision Making

Taking this information and putting it to good use is an important endeavor. Research conducted by See Change Institute for Pacific Gas and Electric (PGE)[7] details the process for a smart home purchase as a customer moves from knowledge of the product to persuasion of the benefits, and ultimately towards decision making to purchase. While the demographic findings on current smart home product purchasers is consistent with the findings from the Shelton Group, the See Change Institute analysis identifies specific gaps and opportunities to intervene for more uptake.

Knowledge: In general, customers are familiar with the term "smart home," with only 10 percent of customers "not at all" familiar with smart thermostats, the most well-known smart home product. This is a promising level of general awareness, however, there is also an immediate concern about the complexity of these products and confusion on interoperability and data-security. In practice, many of the interoperability and encryption concerns of smart homes in the early days have been dampened, but the overall impression that "this is tricky stuff" has persisted. As technologically-inclined early adopters are the majority of smart home users to date, this has not helped combat the misconception that a smart home is out of reach for the common homeowner. The ultimate hope, though, is that the smart home would evolve to be plug-and-play for everyone. This tension creates a unique opportunity for contractors or other efficiency organizations within the home to help overcome the apprehension by taking on installation and set-up risk.

Persuasion: Once aware of the smart home, most customers find the idea of the smart home appealing, with 71 percent of PGE survey respondents saying it was "somewhat" or "very" appealing. When studying the underlying values persuading customers, *protect*, *nurture*, and *conserve* were the most persuasive. Those values are also highly salient when looking at motivations for home energy efficiency retrofits, showing a potential opportunity for cross-promotion of concepts. Economic savings are, by and large, not what is motivating individuals to take action towards a smart home purchase, although making a sound investment is always beneficial.

Decision: In its research, See Change Institute found barriers when making a decision to purchase a smart home product. These challenges included cost, data security, effort, performance concerns, lack of knowledge, and structural incompatibility. The recommendation given was that intervention at the point of purchase was key to pushing consumers past these barriers.

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[7] 2016 See Change Institute for Pacific Gas and Electric, *Assessing Players, Products, and Perceptions of Home Energy Management* http://www.etcc-ca.com/reports/assessing-players-products-and-perceptions-home-energy-managment

If a smart home purchase opportunity can be presented during a home visit for other energy efficiency upgrades, there is an opportunity to align values for the customer and work through the final decisions barriers. Incompatibility, effort, and knowledge concerns quickly fade when an energy expert who understands your home and components therein can present the smart home solution for you; when coupled with incentives, cost barriers can be diminished.

Additional Considerations

ENERGY STAR® is a very widely recognized brand and has even been leveraged by the retrofit industry with Home Performance with ENERGY STAR and the ENERGY STAR Homes program. Within the smart home space, ENERGY STAR has led efforts to certify smart thermostats as well as incorporate connected functionality criteria for a wide range of home products that may be sold as "smart." There is significant opportunity, therefore, to take advantage of the well-known brand.

Gender divides continue to exist, especially for smart home adopters. In its special report on *The Gender Gap in the Smart Home*,[8] the Shelton Group found that men were more likely to purchase and find benefits in smart home technology. For energy efficiency upgrades, however, women are often in the driver's seat for making decisions about the home. Tailoring messaging and advertising techniques accordingly may be very helpful to ensure the right message gets in front of the right audience.

Expanding the participation for both energy efficiency and smart home enthusiasts is very important. If all smart homes were efficient and all efficient homes were smart, there would still be millions of homes that were neither. It is important to remember that this cross-promotional opportunity is one way to gain traction and visibility for both of these efforts, and, especially in the case of smart home products, potentially gain economies of scale. That does not mean new efforts to bring a wider population into the smart or efficient home should not be prioritized; helping in this cause are recent concerted efforts by smart thermostat manufactures in providing lower-cost yet still efficient thermostats to a broader audience.[9] As investments in energy efficiency retrofits and smart home products become more commonplace, the opportunity for greater uptake of both increases.

Conclusion

Energy efficiency and the smart home make a lot of sense to some and no sense to others. That divide, as we see in this brief, falls along the lines of many characteristics, including gender. As smart home devices move more into the mainstream, their various benefits need to be understood and valued by

[8] Shelton Group, Smart Home Gender Gap special report: https://sheltongrp.com/energy-pulse-2015-special-report-smart-home-gender-gap/

[9] Both Nest and ecobee now offer ~$170 products that are ENERGY STAR Certified and are working to get these products into more moderate and low-income homes and programs.

new audiences. Energy efficiency efforts, programs, and professionals have the potential to serve in that education and marketing role, while at the same time, finding new customers who are looking for an efficient, smart energy home is likewise important. Programs and stakeholders in these communities should begin to look outside the bubble of current customers towards those who may be the next customers. At that point, there are promising opportunities for cross-promotion between smart home and energy efficiency efforts.

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