

INNOVATION

BREAK
DOWN

How do we find opportunities?

Marco, the kitchen manager of a local diner, turns on cooking equipment and the exhaust fans each morning when he arrives to start prepping for the breakfast service. Everything stays on until the diner closes at 11 p.m., even though there are times throughout the day when the diner is quiet. Marco is not alone: many small commercial kitchens leave exhaust fans on even when no one is cooking. This is one of many largely untapped energy saving opportunities among small and medium businesses (SMBs).

In 2015, the Minnesota Commerce Department, Division of Energy Resources recognized the important role of SMBs in reaching their energy saving targets and commissioned the ILLUME and Seventhwave team to conduct a Statewide Commercial Behavioral Segmentation and Potential Study. Our results showed that SMBs have opportunities to achieve 245 million kWh and 7.8 million therms of energy savings in Minnesota.

We've identified opportunities, now what?

Meetings, planning, budgeting, forecasting, benefit-cost calculations, and more meetings. These are just a few of the prerequisites to launching new solutions. New offerings are often variations on established, proven approaches or built from well-worn assumptions. While this tactic often results in solid, dependable programs, it does not encourage innovation and risks missing opportunities. In a moment when savings are increasingly difficult to achieve, how can we identify new opportunities to engage customers in smarter energy use and management?

ILLUME is actively supporting many large IOUs in rethinking how to design new solutions that leverage approaches derived from design thinking. The Stanford Design Thinking process offers a model for innovation that incorporates deep understanding of the challenges and a clear definition of the problem to

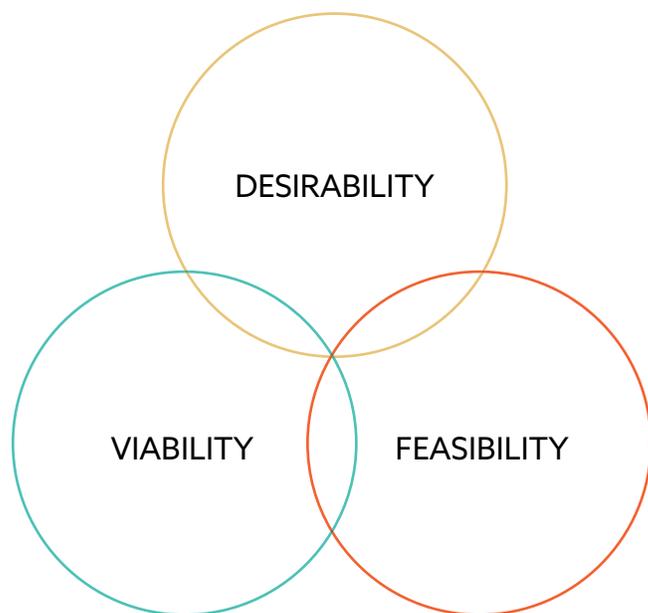
solve. After brainstorming and identifying a solution, developers prototype and test to get it right.

Applying this process to product and services design requires new approaches that can be difficult in regulatory environments with rigid cost-effectiveness parameters, penalties for not meeting goals, and hesitancy around experimental approaches.

However, there are smart ways to innovate even in this environment. Here are a few we recommend:

Exploratory research: What's happening in those kitchens?

Exploratory research is a great first step to understand a need or define a problem. It is relatively quick and inexpensive and, while it includes reviewing secondary data and reports, it centers on direct conversation with the people who have the need.



Innovation requires three key elements: desirability, feasibility, and viability. In energy innovation, we often leave out research focusing on customer desirability and that can undermine our success when bringing new technologies to market.

This means talking to target customers, businesses, and trade allies — a small number of interviews helps us understand wants and needs and define the solution. For example, before launching a rebate for exhaust fan controls, we need to understand why Marco’s diner doesn’t already have one. Expense? Disruption to install? Concern about newer technology? Competing priorities? We also need to understand why Marco leaves the fan on all day. Habit? Belief that it is best for his kitchen? To mask other disruptive noises?

Asking and answering these questions might suggest new approaches to help restaurants save energy that are not based primarily on rebates. Incorporating

testing over writing and planning, and uses a five-step process. 1) Define the problem: Meet with stakeholders to identify the problem and possible solutions based on exploratory research. 2) Prototype: Build a minimal version of the solution. 3) Review: Have stakeholders and targeted users engage the prototype in context. 4) Refine: Update the prototype based on feedback. 5) Iterate: Use several reviewing and refining cycles to finalize.

This approach enables us to try out new services, receive feedback, and refine them at very low cost even before the pilot stage. Let’s face it, once you have a pilot in place, your sunk costs will keep you from going back to the drawing board. For commercial



existing kitchen processes, leveraging social interactions, and partnering with existing restaurant sustainability programs may provide low-cost ways to modify energy use behaviors. But they need to be tested.

Rapid prototyping: How do you get an idea out fast?

Rapid prototyping is a low-cost and effective method for testing the potential of a new service, product, or message. While more common in the tech world (e.g., Google glass was prototyped in a day, the first Blackberry phone was prototyped using a wooden block) rapid prototyping is gaining traction in social services. Rapid prototyping favors building and

kitchens, this could mean prototyping new open/close protocols with reminders and prompts, restaurant community-oriented competitions, or new financing models to lower the cost of installing controls. Rapid prototyping would get mock-ups of materials and procedures into the hands of stakeholders and customers for early feedback on feasibility and usefulness.

Pilots: Why run offerings at scale when you can run field trials?

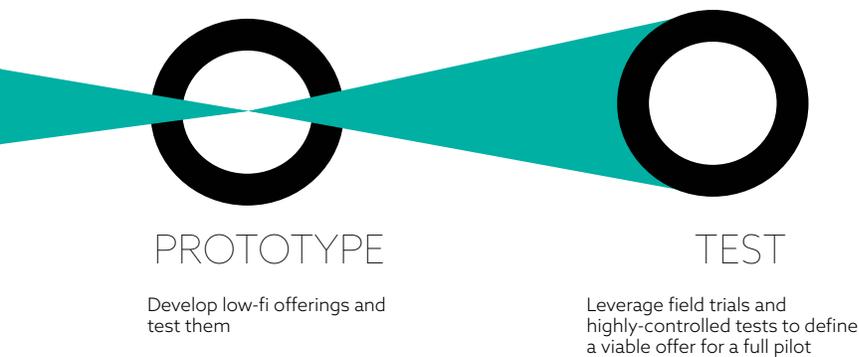
In our industry, we often run offerings and call them “pilots,” but they use models that have already been vetted elsewhere. Too often, pilots go to field as mini versions of a full-scale service, and are assessed via a

slow, standard evaluation approach. When they do not succeed, we can't disentangle what prevented success. Was it the marketing? The product? The target population? However, when smartly designed, field trials or true pilots provide an opportunity to learn in a controlled environment.

For new technologies with nascent markets, the unknowns loom large. For example, there may be insufficient information on what customers want and how much they will pay for it. A good strategy for early field trials to address those unknowns is to test different versions of the offering by sampling customers and using different products, price points, and delivery mechanisms.

ILLUME, our team has pinpointed opportunities for our clients to the building-level. Not only do we help leverage field trials to build a viable and scalable product, we can help identify which customers will help bring it to scale through predictive and propensity modeling techniques.

We face many challenges in our energy future. Whether it's Marco, who needs to run a diner on slim margins, or major utilities that are grappling with system constraints and new utility models, we will need solutions beyond the tried-and-true of the past. Finding those innovative approaches will require exploratory research, prototyping, and field trials. But mostly, it will require supporting new ideas and creating avenues for design-oriented thinking. ■



We recommend gathering customer feedback at several phases and tracking if/when customers stop participating. The key is that the pilot is not a fully-developed, static offer that will either succeed or fail as is. Rather, it is used to learn what the market will accept, to design an offering worthy of scaling. Like rapid prototyping, these field trials can be iterative.

Size the market as you go: why make assumptions?

We have the data at our fingertips and smart experimentation can give us the inputs needed to examine how many customers are likely to adopt, at what price point, and through which channels. At

A MODEL FOR SUCCESS?

Our upcoming partnership with CLEAResult will push innovation for a Midwest electric utility company. Our client has earmarked \$13.3 million per year for its Emerging Technology (ET) Program, making it one of the largest in the nation. Leveraging this funding, they are creating a best-in-class, nationally recognized ET Program.

Our client is rethinking the typical utility energy program pilot model by testing more ideas, faster, and implementing key learnings in real time, rather than at the end of the pilot.

Our unique team brings together thought leaders, innovators, and experts in ET Program design, technology development, and customer experience from the energy, technology, utility, university, and community advocacy sectors. As a key part of this team, ILLUME is helping select the technologies and process improvements that will futureproof the portfolio.

Our team is designing technology-enhanced review processes so experts from across the U.S. can quickly review ET pilot ideas. We are also assessing evaluability and implementation readiness to provide continual feedback that helps the electric utility meet their "fast to start, fast to fail" goal for pilots.