Fall 2021 E Source Market Research Leadership Council



Rachel Cooper, director

Heather Hilgenkamp, manager







E Source helps utilities and cities reduce costs, evolve their technologies, increase customer satisfaction, and create industry-leading programs.

Our innovative solutions are delivered through predictive data science, market intelligence, consulting, and advisory services.

Goals for the day

Participate

Build your professional network

Challenge the status quo

Collaborate on solutions

Enhance your strategies

Lean on E Source

Today's agenda (in Mountain Time)

9:00–10:00 a.m.

Introductions and discussion: What are you working on?

10:00-10:15 a.m.

Break, networking opportunity

10:15-11:30 a.m.

Using data to improve programs and services

11:30 a.m.-12:00 p.m.

Morning wrap-up

12:00-1:00 p.m.

Lunch, networking opportunity

1:00-1:45 p.m.

Hands on with Immersion Neuroscience

1:45-2:00 p.m.

Break, networking opportunity

2:00–2:30 p.m.

Market research hot topics breakout session

2:30-3:00 p.m.

Final wrap-up

5:30–7:00 p.m.

Forum welcome reception

7:00-9:00 p.m.

Market Research Leadership Council dinner

Introductions and discussion



Meet the E Source Market Research team



Introductions

Your name

Title or role

Company

What are you working on?

In one word ...how would you describe the past year or year and a half?

Using data to improve programs and services



Using data to improve programs and services



Speakers



Vanessa Greenlee, principal market research specialist, Sacramento Municipal Utility District



Laura Agard, senior analyst, Market Research, E Source



Paige Martin, senior analyst, Market Research, E Source



Tom Martin, managing director of product, Data Science, E Source

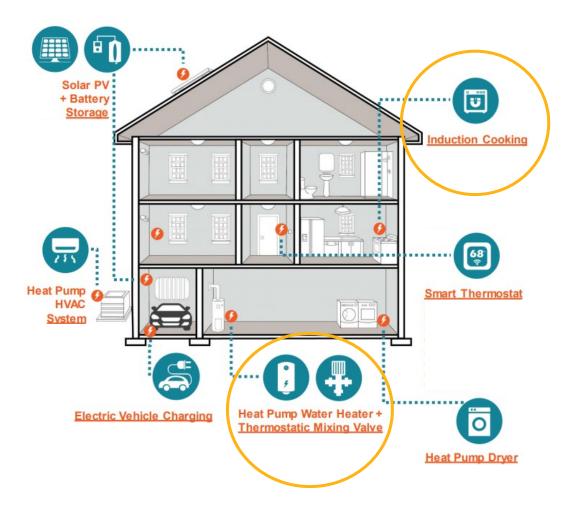
Electrification research and program development at SMUD

September 2021

Vanessa Greenlee

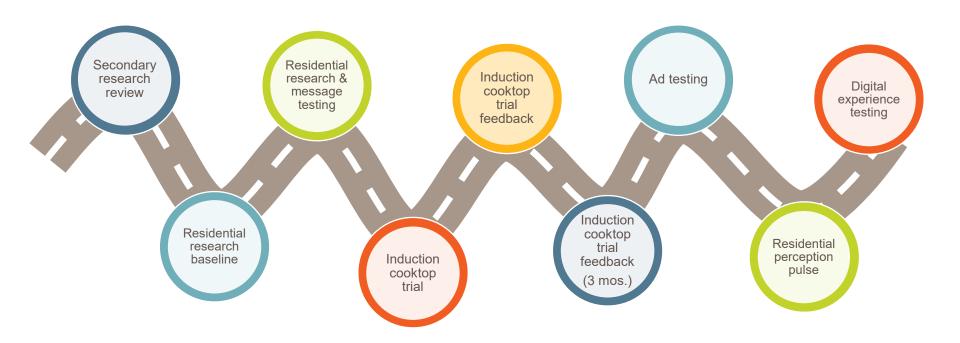
Principal Market Research Specialist

Powering forward. Together. SMUD





Electrification research journey







First-hand experience

Price & performance

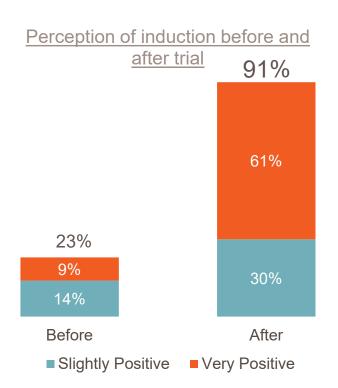
induction

Special cookware

Preference for gas



Induction trial improved perceptions

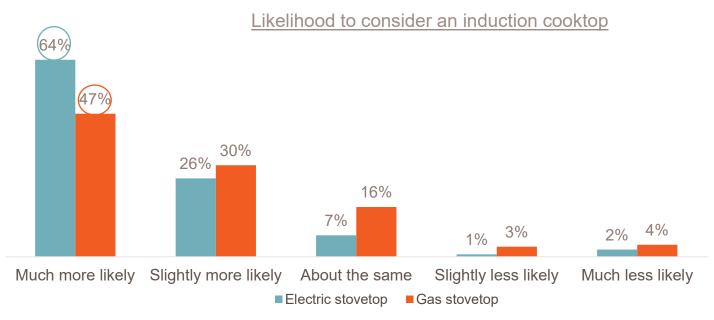






Induction trial increased consideration

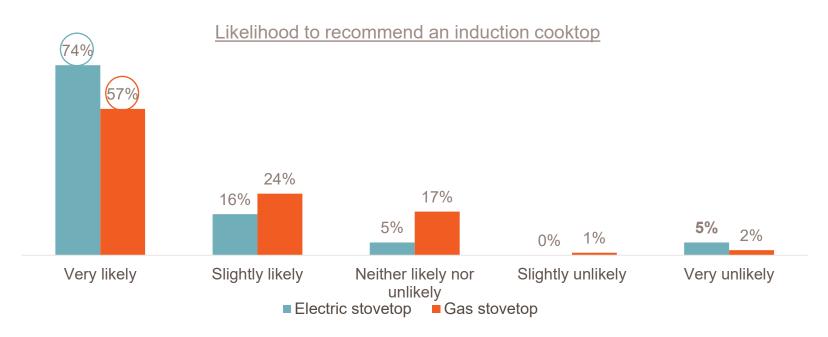
After the trial, 64% of electric and 47% of gas stovetop users were <u>much more likely</u> to consider an induction cooktop in the future.





Trial resulted in strong likelihood to recommend

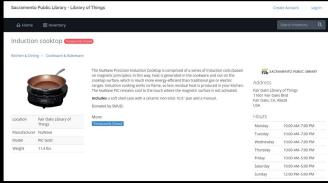
After the trial, 74% of electric and 57% of gas stovetop users were <u>very likely to recommend</u> an induction cooktop to a family member or friend.





Customer experience with induction





In 2019, SMUD hosted:

5 cooking demos at Sacramento libraries

2 demos at SMUD





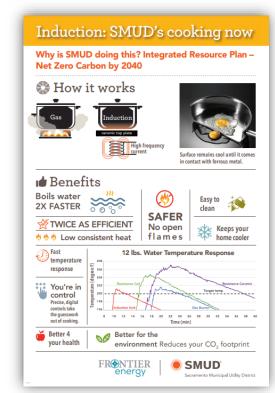




Induction education at industry events

Utility Energy Forum











Testimonials from SMUD research

Faster cooking time

"I had assumed I would need to change my cooking habits in some vague, unknown way, but the switch was easy; I was able to cook exactly as before, only faster."

"It was so fast—I was able to boil water or get oil hot in a matter of seconds for the oil, about a minute for the water, I LOVE IT!!!"

Speed of heating

"I have never used an induction device before but was aware that they are known for even heating. I have used it multiple times for different dishes and each time have been very impressed on how quickly it heats up and how evenly the food cooks. I really like how I can switch between the heat settings during cooking without interruption."

Safety

"Safety of touching surface helped me consider non-gas cooking."

"It lets less heat into a room—should be a real positive for summer. I think it would be safer if you had small children in the home."



Online induction video testing



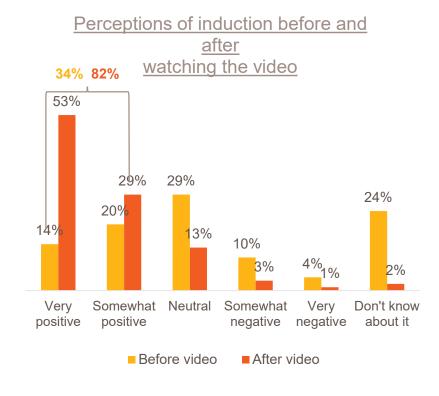
















Perceptions of price and performance of induction

Price

"A rebate to help with the cost of the cooktop and the cookware would help too. Instant rebates in the SMUD store for high-quality items is another good idea."

Speed of heating

"Seeing that it works as quickly as gas and have the control of gas."

Frigidaire Wolf \$1,479 \$7,950







Rebates on induction







Induction cooktop/range

Must install an induction cooktop/range measuring 30" or larger. Both standalone cooktops and ranges with built-in induction cooktops are eligible. Electric-to-electric replacements qualify for a \$100 rebate.

Gas-to-electric replacements qualify for a \$750 rebate. They require a "before" photo of the old gas cooktop/range in place and an "after" photo showing the new induction cooktop/range installed.

\$100 - \$750

Apply online now

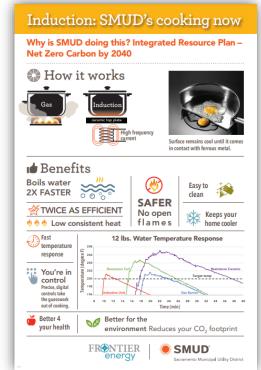
Learn more



Performance of induction

"I am impressed with the speed of the pan heating up, with the ability to change cooking temperatures quickly and easily, and the ease of cleanup!"









Perceptions of compatible cookware

Perceptions

Induction cooktops only work with specific cookware

Expensive to replace existing cookware

A customer's existing cookware wouldn't work on induction

Reality



Cast iron \$12 - \$120



Enameled iron \$30 - \$140



Stainless steel \$20 - \$200

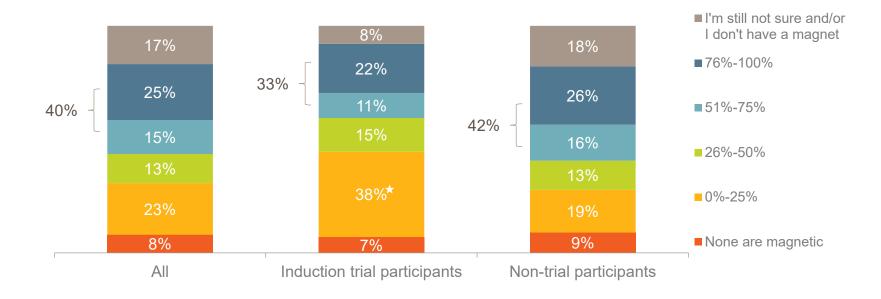


Blue or black carbon steel \$40 - \$240



Induction compatible cookware estimate

40% of respondents say that more than half of their cookware is compatible with induction cooking.



^{*} Indicates a statistically significant higher difference.

Source: SMUD Proprietary Research: Induction Cookware Survey, November 2020

Induction trial participants = SMUD customers who cooked with an induction hotplate in their home Jan – Mar 2019

Q – After completing the magnet test, please tell us approximately what percent of your pots and pans are magnetic?

(n = 732: trial participants n = 137, non-trial participants n = 595)



Interest in a portable induction cooktop

Almost 2/3 respondents (66%) were somewhat or very interested in trying a portable induction cooktop.





^{*} Indicates a statistically significant higher difference.

Source: SMUD Proprietary Research: Induction Cookware Survey, November 2020

Induction trial participants = SMUD customers who cooked with an induction hotplate in their home Jan – Mar 2019

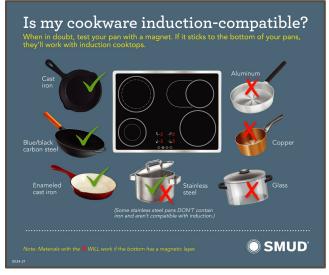
Q – How interested would you be in trying a portable induction cooktop?

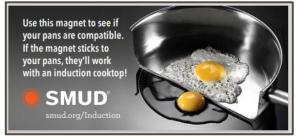
(n = 732: trial participants n = 137, non-trial participants n = 595)

Educating customers on compatible cookware









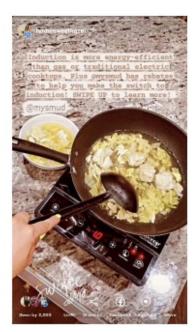


Continuing the conversation in 2021

6 feed posts Almost 2,000 likes 12,000+ impressions 25 story frames 19,000+ story views







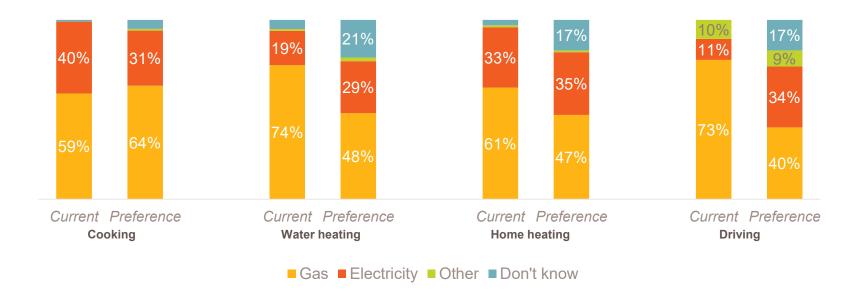






Energy sources – current vs. preference

Preference for cooking with gas aligns with those currently cooking with gas. However, preference for gas decreases when looking at energy preferences for water heating, home heating and driving.



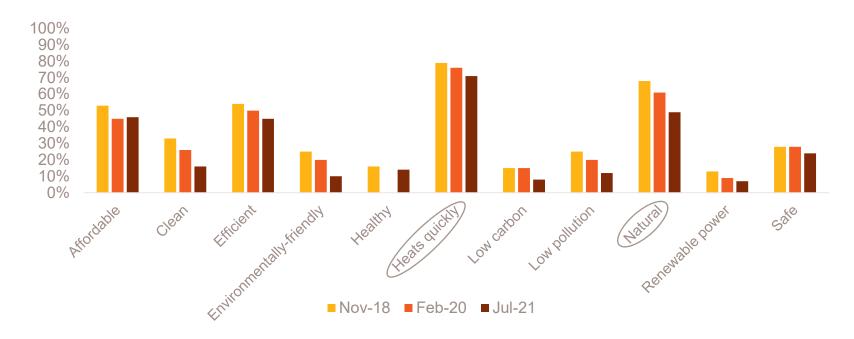


Q – What type of energy sources do you currently use or the following appliances/systems and vehicles?

Q – Which of the following energy sources do you prefer to use for the following tasks? (n = 544)

Terminology association with gas

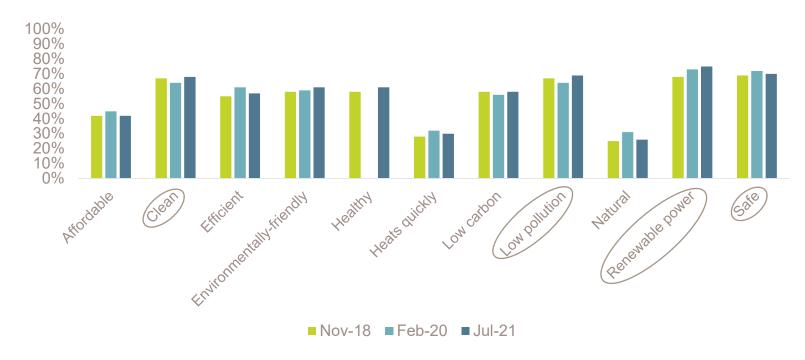
Respondents most associate gas with terms like 'heats quickly' and 'natural.'





Terminology association with electricity

Respondents most associate electricity with terms like 'renewable power', 'safe', 'clean' and 'low pollution.'





How SMUD is changing perceptions



Healthier

Induction cooking protects your family's health. According to the *International Journal of Epidemiology*, children living in homes with gas stoves are 42% more likely to experience asthma.

- Better indoor air quality.
 - Eliminates the indoor air pollution that gas stoves release into your home. These pollutants include nitrogen oxide, formaldehyde and carbon monoxide.
 - On average, we spend about 90% of our time indoors, where pollutant levels are often higher than those outside.
 - Indoor pollution is estimated to cause hundreds of thousands of respiratory health problems each year.

The myths of "natural" gas

Myth: More efficient

Fact: Electric heat pump water heaters, heat pump HVAC systems and induction cooktops use less energy and are 2-3 times more efficient than gas.

Myth: More affordable

Fact: Homes with newer heat pump water heaters and HVAC systems have lower utility bills overall than homes with gas appliances.

Myth: Better for cooking

Fact: Electric induction cooktops heat up twice as fast as gas, provide more accurate temperature control and are easier to clean.

Benefits of an all-electric smart home

- More environmentally friendly, emitting 40% less greenhouse gases than an equivalent home powered by natural gas (saves over 1 ton of CO2 per year)
- Greater use of renewable generation
- · Safer cooking technologies
- Reduced exposure to natural gas and combustion products
- Homeowner has greater control and can lower costs by taking advantage of Timeof-Day rates and demand response programs

See an all electric smart home

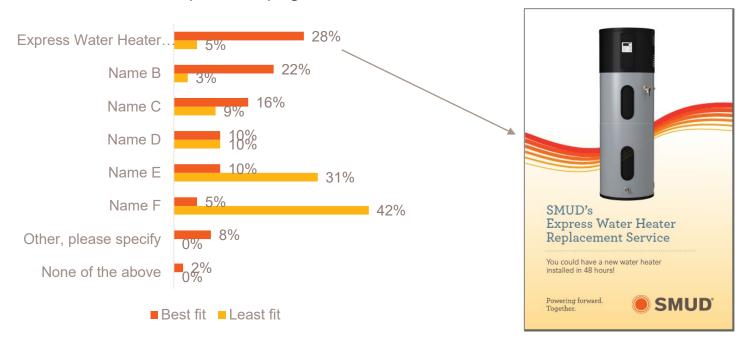






Water heater program name selections

28% of respondents selected "Express Water Heater Replacement" as the name that best fit the description of SMUD's new water heater replacement program.





Q - Which of the following names do you feel best represents the description you just read? Q - Among the remaining names, which do you feel least fits the description? (n = 693)

Barriers and perceptions of electric water heaters

Price to purchase

"If I could see proof that an electric water heater would be cheaper to run than gas tank or tankless and **similarly priced to buy and install**."



~ \$3,800

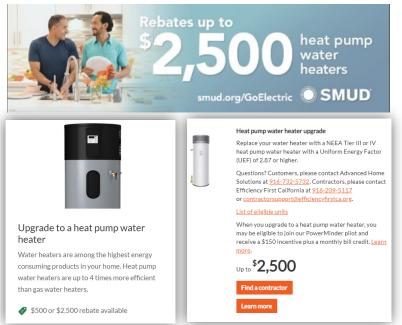
Efficiency

"Change my mind concerning cost and efficiency."





Rebates on heat pump water heaters







Efficiency of heat pump water heaters

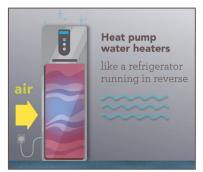
Features and benefits

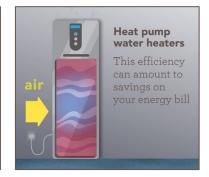
- Electric resistance water heaters are among the highest energy consuming products in your home. A heat pump water heater can reduce electricity use for water heating by up to 60%
- Heat pump water heaters transfer heat from surrounding air to heat water, using ambient air to move heat instead of using electricity to create heat
- Reduces the overall energy consumption and monthly utility bills
- · Cools the area it's located in, usually the garage









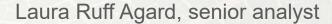






Electrification insights

Results from the E Source 2021 Residential Electrification Survey



Paige Martin, senior analyst

Fall 2021 E Source Market Research Leadership Council



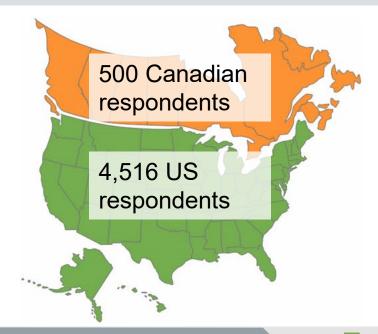


Survey purpose and sampling



Purpose: Describe residential customers' readiness for electrification so utilities can serve them better

- 5,016 completes of US and Canadian homeowners
- Fielding of survey in June 2021
- Set quotas based on:
 - US and Canada
 - US Census division
 - Age
 - Gender
 - Income



Survey topics

Familiarity and awareness:

- Electrification-related terms
- Gas versus electric fuel sources
- Electric home equipment and appliances (focus on HVAC, water heating, and cooking)
- Fuel switching

Motivators and purchase behaviors:

- Motivations for using home equipment and appliances
- Likelihood to purchase electrification technologies
- Barriers to purchase
- Interest in paying more
- Factors considered when replacing broken home appliances

Contact us



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Learn more about the E Source Residential Electrification Survey:

www.esource.com/residentialelectrification-survey



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Have a question? Ask E Source!
Submit an inquiry:

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Fall 2021 E Source Market Research Leadership Council



POWERING WHAT'S NEXT

Industry in transition

Decarbonization

Safety, reliability, resilience

Downward cost pressure

Customer equity

Smart collaboration



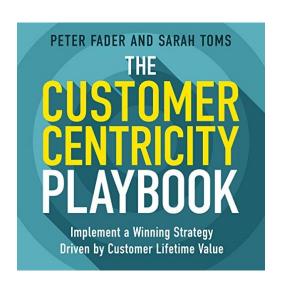








Rethinking customer offers and engagement



See your customers as individuals to maximize customer lifetime value

Stop wasting resources by chasing down average consumers.

Maximize customers' long-term financial value to the utility by focusing on those aligned with your priorities.

1. Digital customer replica

- Advanced metering infrastructure (AMI) energy profile
- Behavioral profile

2. Best customers identified

- Individual customer assessments
- Artificial intelligence—derived microcohorts of best fit

3. Best customer personas

- Key attributes identified
- Ethnography/voice of the customer

5. Engage best customers

- Personalized engagement
- Engagement feedback

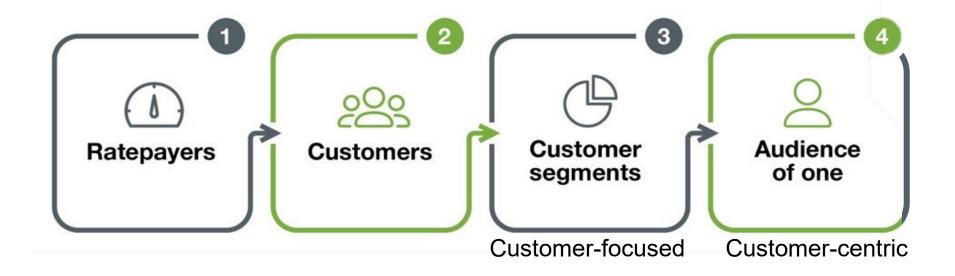
4. Precision simulationsCustomer specific

Grid specific

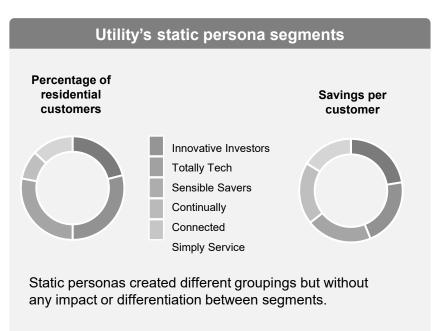


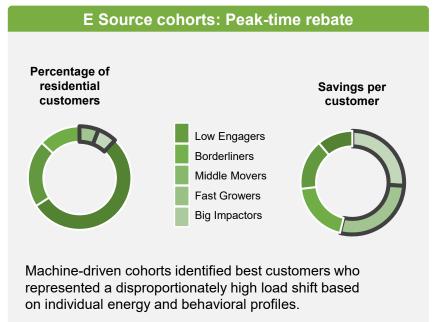
Audience of One

Utility customer journey



Case study: Data-driven customer cohorts





Data-drive customer cohorts

Innovative Investors

Totally Tech

Sensible Savers

Continually

Connected

Simply Service

0









Factor	Big Impactors (BI)	Fast Growers (FG)	Middle Movers (MM)	Borderliners (B)	Low Engagers (LE)
Billing	Almost 4 times more in billing metrics of LE, ~2 times more than FG	Mirrors patterns of MM	Mean value for "AvgBillAmt12Mo" ~\$140, this is 2.5 times as much as LE ~\$68	Marginally less than MM in metrics, but 2 times more than LE	"KWH_NORMAL" ~ 655, "BILL_AMT_12MO" ~ \$808
Direct media over digital	Proportionally in the middle rank of engagement	Least likely to engage in direct media marketing	Ranked slightly less than FG engagement	Ranked slightly less likely than LE	Most likely to respond to mail, newspaper ads
Financials	Largest magnitude across all variables, indicating largest revolving credit and investment opportunity	Metrics reflect those of BI very closely	Metrics are ~25% higher than B and LE	Performs ~20% above LE	Weakest financial metrics
Home metrics	These are bigger/better measures, of which BI has the largest values	Uniformly larger values than MM, but ~15% less than BI	Middle of the road values against other personas	Square foot values not very different from FG, but ~10% less on market value	Proportionally, LE metrics are the lowest among each variable
Keeping busy	Among this factor, BI are most on the move and responsive to subscription services	Tracks very closely to BI, except in "Satellite. Radio Subscriptions"	~15% more likely than FG, but ~15% less likely than BI and FG	~15% more likely when compared to LE	Least likely to be travelling and engaging in subscriptions
Purchase style	Representing the middle persona, however, is second to MM in "Web And Brick Mortar"	Uniformly most likely to engage in online activities	About ~10% less engagement online from FG, and ~30% more active than LE	About ~12.5% more engaged online over LE	Lowest online activities

Data-driven customer cohorts



Low Engagers
Borderliners
Middle Movers
Fast Growers
Big Impactors

- Big Impactors: Larger single-family dwellings, with high income ranges and subsequent billing metrics; busy and likely have digital subscription activity
- Fast Growers: Tend to track tightly with Big Impactors, except are the most engaged with technology behaviors
- Middle Movers: Will track with Fast Growers; proportionally lower values on housing sizes, income, notably close with respect to technology
- Borderliners: Individuals in this group are split; some may tend by value to lean into Low Engagers, while some are lined more with Middle Movers; a key may be viewing this group as potential Middle Movers; tend to rent
- Low Engagers: Most likely to interact with newspapers, flyers, and traditional media; least technologically, tendencies to live, and smaller square foot housing; lower household income and comparatively older demographic

Questions and considerations

What utility customer data is needed?

Do I need AMI data?

What do I do with my existing customer personas?

Key takeaways

- As the industry is transitioning, utilities need to get more customer-centric in order to hit big goals
- A data-driven approach to understanding your customers can improve program performance while supporting key strategic initiatives:
 - Decarbonization
 - Equity
 - Reduced costs



For more information



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Hands on with Immersion Neuroscience



Hands on with Immersion Neuroscience



Speakers

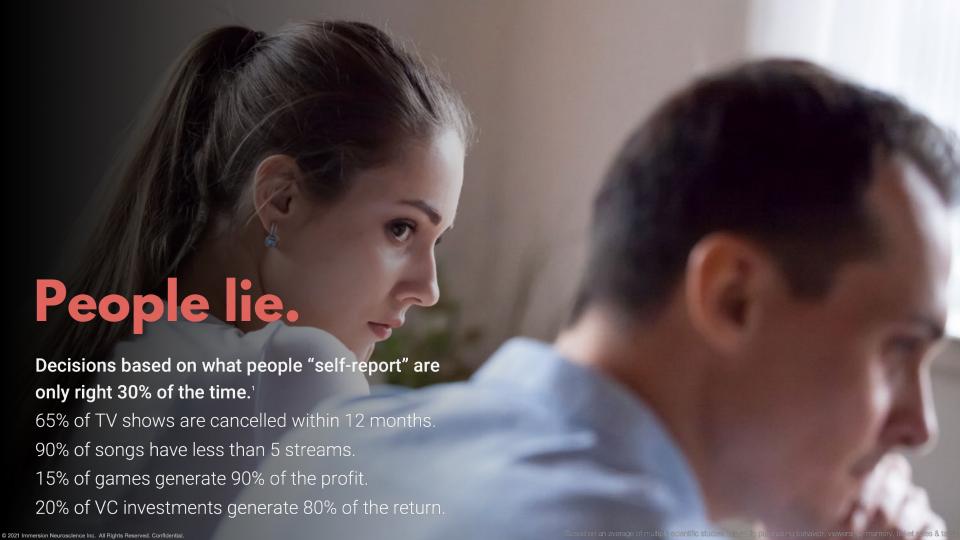


Scott Brown, CEO, Immersion Neuroscience



Laura Beavin-Yates, senior vice president of customer success, Immersion Neuroscience







immersi n



30% of people wear a smartwatch every day.



Apple Watch > Series 3



Fitbit Versa, Versa Lite, & Versa 2



Fitbit Versa 3 & Sense



Google WearOS



Samsung Galaxy Watch



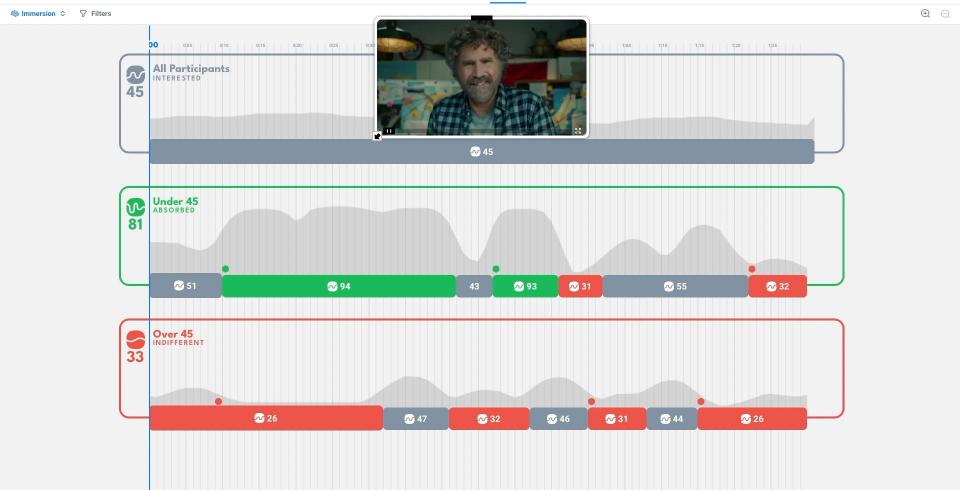
BLE & ANT+ Fitness Sensors





Overview Analyze

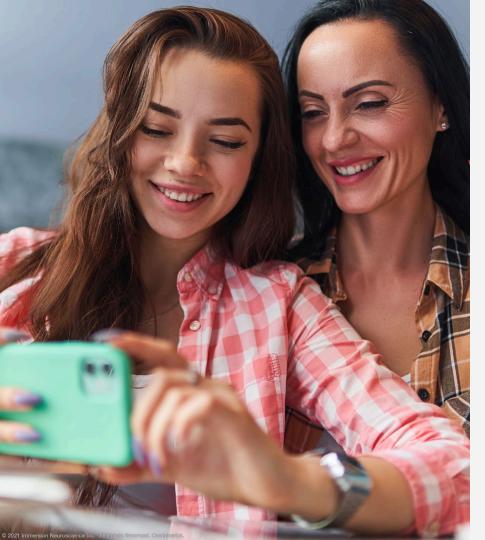




Tuesday Standup







Immersion makes every decision your best decision

OUTCOME	IMMERSION	SELF-REPORT	
Identify Highest Rated TV Shows	88%	17%	
Predict Retail Purchases	84%	35%	
Predict Sales Bumps from Ads	83%	14%	
Predict Music Purchases	92%	16%	
Who Donates to Charity	82%	51% (personality)	
Predict Food Preferences	78%	53% (taste)	
Recall of Information	0.73 correlation	n/a	

17k citations

Our core science is ranked in the top 0.3% of all research & used by thousands of others as the backbone of their work 20

years

This team spent 20 years developing the research and proprietary algorithms that allows us to infer brain state from a wearable device

3rd party proof

In order to qualify for funding from DARPA, our science had to be proven effective in an outside 3rd party lab



Market research hot topics breakout session



Hot topics breakout session

Choose your own adventure! Join a small breakout group for the topical discussion you find most helpful for your role:

- A. How research has changed due to recent events such as the pandemic and civil unrest; your challenges and wins through this time; and which new research tools, methods, and processes you'll adopt permanently.
- **B. All about metrics**—which metrics are best and when to use them, what are ideal response rates, etc.
- C. How to decide when to conduct new research versus using existing data, and how to communicate your research findings across the organization.



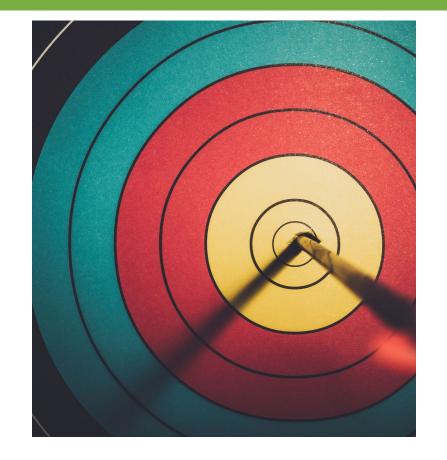
How has research changed due to recent events?

- Challenges and wins
- New research tools
- New research methods
- What will you keep doing?



All about metrics

- Which metrics are best
- When to use them
- What have you stopped using?
- Ideal response rates



When to conduct new research?

- Using existing research
- Asking the right questions
- Socializing research findings



Forum sessions highlighting **E Source Market Research**

- Did COVID permanently change utility contact center operations?
- Engaging customers through your website's secure portal
- Help small and midsize business customers thrive by taking a personalized approach
- Priming the market for building electrification
- Using voice-of-the-customer data to build customer relationships
- What COVID taught us about the needs of small and midsize businesses
- What we learned from COVID about serving low-income customers
- Who are the next EV buyers? Tailoring your offerings for maximum impact





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