epic 2023 Ethnographic Praxis in Industry Conference Proceedings

Introducing Ethnographic Practice to a 100-Year-Old Corporation in a Highly Regulated Industry

DJUANA STOAKLEY, KeyString Labs, Entergy
AALIYAH SHAREEF, KeyString Labs, Entergy

Our work in the Gulf South faces challenges and opportunities. Climate change impacts are severe, yet residents' awareness lags behind the US as a whole. The region encompasses impoverished communities, vibrant urban centers, farms, and a rich culture. To better understand the people of the region and to guide our product strategy, we--on the strategic design team--use ethnographic methods and systems thinking. Organizational skillsets and the pandemic posed obstacles. Ethnographic research shaped a digital tool for low-to-moderate income individuals to access energy assistance. We adopted co-creation, involving stakeholders and considering customers as part of a larger system. The revised process led to a company-wide working group and an Innovation Playbook. We successfully launched a streamlined digital application for energy assistance and backup power solutions for larger customers. We acknowledge frictions as part of the innovation process.

Keywords: ethnography, energy, utilities, innovation, Gulf States, climate change

OVERVIEW

There were three main organizational and business impacts of our work as strategic designers using ethnographic research within an innovation department of a large 100-year-old corporation in the highly regulated utility industry: the co-creation of products, the development of an Innovation Playbook, and, finally, the commercialization of products. This included Power Through, a backup-generator service that is currently offered to commercial and industrial customers in Louisiana, and an Arkansas pilot for a digital application that allows customers living on low incomes to apply for assistance with their utility bills through LIHEAP, a federal program. This paper describes how we achieved these outcomes using ethnographic research, which played a critical role in helping us to better understand our customers and their needs regarding energy-related products and services.

THE CONTEXT

The Gulf South has both frictions and opportunities that shaped our ethnographic practice. One such friction is the various impacts of climate change, one of the most pressing problem facing our world today (Lang, 2008). The impacts of climate change are becoming more severe in our region (Langford, C. 2022), yet residents' attitudes about the severity of climate change lag behind the rest of the nation (Howe, P. et al., 2015). The region is composed of vast swaths of impoverished communities (Hoopes, S. et al., 2020), a few dynamic urban hubs, rural

Introducing Ethnographic Practice in a 100-Year-Old Corporation in a Highly Regulated Industry. Djuana Stoakley and Aaliyah Shareef. 2023 EPIC Proceedings pp 295-307, ISSN 1559-8918. https://www.epicpeople.org/ethnographic-practice-for-highly-regulated-corporation

farms, commercial and industrial businesses, and a very influential and well-known musical and food culture.

OUR DISCIPLINE

In this complex context, our innovation department--with a small strategic design cohort--began work to better understand the people of the region (which includes Arkansas, Mississippi, Louisiana, and Texas) so we could inform the strategy and design of digital products and in-person services related to energy. As our innovation lab is located within a utility company, we are focused on energy in general, including a focus on people living on low and moderate incomes.

Within the broad area of energy-related frictions, we uncovered concerns unique to our customer population after conducting ethnographic research over the course of several years. We were guided by ethnographic methods and systems theory (Cabrera, D. and Cabrera, L., 2018). Ethnography and systems theory remain critical to how we understand our customers. Some of the energy-related concerns of customers in our region were uncovered using ethnographic techniques such as in-person interviews, site visits, and online interviews. Their concerns include resiliency in the face of storms and affordable access to power.

As strategic designers and ethnographic researchers, we had to go beyond strategic design (Ackermann, R., 2023), to focus on our customers as part of a larger system, which included our company. We, therefore, revised our innovation and research processes to further include the impact of our research and design work on the business, as well as to co-create products and services more systematically with our colleagues and customers. We've also sharpened our focus relative to customers, reflecting that in order to be successful and ultimately get products in the hands of our customers, we must also solve for our operating companies and regulators in the product development process.

OUR FRICTIONS

Organizational Skillsets

One of the main frictions we faced was at the organizational level. Strategic design was a new discipline to our company and the use of ethnographic research as part of the strategic design process was also new. Therefore, we slowly introduced key tenets of strategic design to the company. For example, by holding design thinking workshops with our colleagues outside of the innovation lab.

Beginning in 2020, the strategic design cohort began facilitating a series of internal design thinking workshops which had the following components:

- Defining design thinking
- Sharing case studies from prominent design leaders

- Defining empathy
- An overview of how design thinking is applied at our innovation lab
- A hands-on component where workshop participants break into small teams and gather insights, ideate, test prototypes, and present to their peers in a fast-paced, one-hour session

Our colleagues reacted positively to the design thinking workshops, as well as other strategy sessions, ideation exercises, and research share-outs.

The Pandemic

In 2020, due to the global COVID-19 pandemic, we had to adjust the way we conducted ethnographic research to include a variety of digital tools to help us interview, communicate with, understand, and co-create with both our customers and our colleagues.

For instance, during the pandemic the bulk of our customer interviews were conducted online using various videoconferencing and UX research platforms.

In those instances where we conducted in-person interviews and observational research, we followed CDC guidelines and were masked during our interactions with our customers and other stakeholders.

The switch to mostly online research and digital tools affected both what we were able to learn and what we were unable to learn. Thanks to online interviews, we were able to reach more customers and to complete studies in less time, as compared with travel to several locations and homes, something we did in 2019. It was also useful to safely discuss product concepts with residential and business customers in their milieux. We saw their homes and offices, albeit virtually. However, we were not able to have access to their larger contexts. For instance, we did not see the outside of residents' homes or their neighborhoods in real-time and we were not able to walk the factory floors with operations leads in-person. The in-the-moment serendipitous insights and question areas that can occur during in-person interactions were less likely to happen online, although they sometimes did.

OUR RESEARCH

In this paper, we detail two ethnographic research efforts we led that focused on two aspects of energy usage in the Gulf South. The first was the research we conducted to develop a backup power service and the second was on the research we undertook to understand customers living on low incomes that guided the development of a digital application for energy assistance.

Research to Guide the Design of a Backup Power Service

We conducted ethnographic research that guided the design of a back-up power service product for commercial and industrial customers known as "Power Through." Two main types of research were conducted:

- Commercial and industrial customer site visits were conducted in 2019 to assess the need for backup power generation where generators are required in case of power outages, due to the nature of the populations served (e.g., nursing homes).
- Interviews with generator experts (working at companies that sell and manufacture commercial generators) were also conducted in 2019.

As a result of our customer interviews and site visits, we found the following twelve steps that generator end users and manufacturers/sellers progress through during the life of a backup generator:

Figure 1. The twelve steps to generator installation.

Our research also revealed several communication touch points along the journey between users and manufacturers/sellers as summarized in the following graphic.

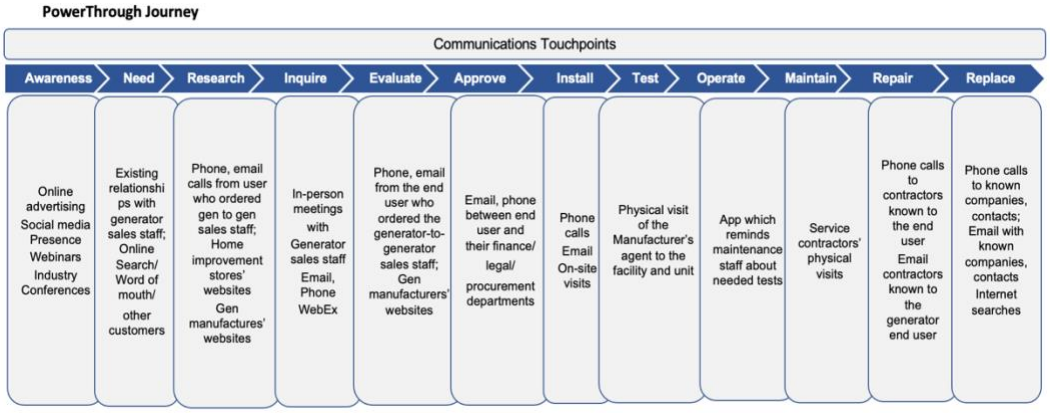

Figure 2. Communications touchpoints along the generator installation journey.

Ethnographic research also enabled us to uncover several customer frictions along the journey between users and manufacturers/sellers.

Educating potential customers about the need for a back-up generator is needed. One potential customer stated:

> "It's more of an emotional thing. It can be fruitful; people will respond to in a different way. Any large-scale purchase, there can be an emotional component. A level of trust and comfortability. Knowing that someone is going to be there if something happens. The price and the numbers don't mean as much when all those things are there. There's an emotional attachment to losing power—loss of business, loss of product, may have to lay people off. You want to have trust that if something happens, you will have back-up power. Knowing that I am secure, and I am not going to be exposed again."

Some end users believe an off-the-shelf generator will suffice for their needs. However, generators not intended for the size of the building they are powering (e.g., an entire grocery store) may not work well. As one generator manufacturer stated:

> "Continuing education is needed to build a value statement to them. 200KW generator for $45K on the internet is not good enough for business/commercial use, it's $75K for 200KW."

The end user sometimes views generators as cost-prohibitive, which is why financing a generator is useful to many customers.

> "Usually the acquisition of equipment—capital expenditures, the losses from outages are operating expenses… For example, in a molding business, they cannot lose even 10 minutes of power, they will have to throw out an entire line of misshapen products, that could be $30K… Grocery stores are the easiest, they lose food if the power goes out. We have cooling facility client, and they must keep flowers cool and medicines for their clients, they cannot lose power."

Generator rental companies also require consideration. If a business owner believes they can easily rent a generator when needed, they may not want to purchase a permanent standby generator of their own. The process for purchasing and installing a permanent standby generator is lengthy, which can be frustrating to those used to renting a generator and getting one on-site soon after their order. "The entire process takes 6-10 months for a 400 kw to 2-megawatt installation. Construction alone is one month."

Sales teams may be unknown to end users who do not want to make a major purchase from a stranger. However, end users may not know where to start when they need to replace old generators. A company that has been in business for over a hundred years may have the advantage of being known to customers in the region.

Understanding and evaluating generator options is difficult for non-experts. Internal staff is relied upon to assess generators and they may not have expertise to do so. Staff responsible for purchasing generators may come from managerial/procurement backgrounds and not have the engineering or maintenance training needed. For instance, an Executive Director of a nursing home told us there are "challenges" related to beginning the process of ordering a new generator. The

staff does not have the information needed to give the companies the specs needed to bid on a new generator (e.g., where to find out how much voltage is needed, what are the roles of the two meters the current generator has?). This is another pain point the Power Through product helps to solve.

> "There are all types of generators. There are those that keep the lights on, those that power the refrigerators, etc. Considering our area, you can have 4 or 5 category storms coming through our way. Just because we've never had one, doesn't mean we won't have a hurricane in the morning. You don't build a church for Easter Sunday either," as one grocery store owner stated.

There are other operational frictions that we may be able to advise on, and not solve right away. For instance, the storage of generator fuel supply is an issue if there is not enough space on the customer's property to safely do so. Additionally, in many medium-sized companies, paper logs are used to document all operational tests and required generator inspections. This is a cumbersome process for those who maintain generators. Digitizing the required forms would help, however, the company has to be open to changing the way they document and store the required information.

Finally, our interviews and site visits informed the development of a customer journey map that guided the design of our generator service, including how we communicated with customers. Building on initial research done by the team, product team members conducted in person and onsite qualitative interviews with generator end users and manufacturers to ascertain their frictions. We built a customer journey that represented the front-end process through which businesses acquire back-up generators, and a perspective from backstage, the vendors' point of view. The research informed our product strategy, resulting in revised customer journeys, and recommendations for Power Through as a business.

Research to Guide the Design of a Digital Application

We also conducted ethnographic research that shaped a digital tool that helps low-to-moderate income customers apply for energy assistance through the U.S. federal Low-Income Heat and Energy Assistance Program (LIHEAP).

Because the product team was composed of energy professionals from a variety of backgrounds (software engineers, product managers, analysts, and innovation managers) who assisted in the research, the strategic designers created a Field Interview Guide, which included a Notetaking Guide, a Synthesis Guide, and dos and don'ts of observational research. The guides were informed by tenets of observational research, active listening, and other qualitative research methodologies.

The following two quotes from Randall, D. and Rouncefield, M. (2014) guided our thinking around the role of ethnographers. These were shared with our team as part of the Field Interview Guide:

> "The important thing about the ethnographer is not that he or she brings particularly arcane skills to the collection of data [many of those are the skills of office administration, cataloguing and classifying documents and records], but that they bring the *willingness* to pay attention to people's activities, to attend in detail to how people actually go about their affairs...
>
> "The ethnographer's job is to listen to the talk, watch what happens, see what people do, to write it down,… record what documents can be recorded, and so on. The sorts of things that can be collected and recorded include conversations, descriptions of activities, diagrams of places, job descriptions, memos, notices, graffiti, transcripts of meetings, war stories, and more. It is not that such materials have any intrinsic value; the material is valuable insofar as it can be made relevant or useful for what it can say about the social organization of activities."

Our research to inform the development of the LIHEAP digital application included the following types of ethnographic research:

- In-person interviews with social service agencies staff at their offices in three states (Arkansas, Louisiana, and Mississippi) during the pandemic
- Virtual interviews with some social service agency staff who could not meet in-person
- Online interviews with LIHEAP users
- A telephone interview with a professor whose expertise includes LIHEAP

During in-person meetings with caseworkers, the majority expressed relief upon learning about the potential implementation of a digital approach. They saw the platform as a means to streamline their customer service and enhance efficiency. On the other hand, those who were engaged virtually encountered significant knowledge gaps in utilizing technology that allowed us to conduct the interviews. Their lack of familiarity with virtual tools often led to scheduled 30-minute interviews stretching to a lengthy 2-hour duration.

The main learnings from the three stakeholder groups we spoke with (agency clients, agency staff, and the LIHEAP expert) were:

Issues with receiving documents needed for the LIHEAP application

- Customers may not bring all the documents for eligibility requirements, including Social Security cards for everyone in their household, IDs, proof of income, and more. For example, many of the required documents are unknown to customers and not disclosed by the agency at the time of application. Several days may pass before a customer's application is returned, citing 'missing documents,' with little explanation on where or how to retrieve them.

- The pandemic ushered in a new era of the acceptance of documents not submitted in-person (via email and mail). For example, caseworkers relied on email to receive the applications of customers, but postal mail to respond.
- Manual calculation of utility assistance, housing payments, and other information that could be automated. Caseworkers were using a portal to check the status of an application then the state policy book to manually calculate the pledge each applicant was qualified for.
- Making paper copies of all documentation and keeping it in hard paper files. "It's hard to keep up with all the paperwork, especially during the busy season. We have to bring in extra help to keep it all organized," stated a caseworker.
- Cost of postage is a concern. After April 2020 and due to Covid-19 protocols, most agencies spent more on postage than in prior years.
- Applicants spend too much money traveling to and from the office to hand in required documents. "One applicant ran out of gas in the (agency) parking lot. The security guard shared his gas with the applicant, but it wasn't enough. He followed the applicant to the gas station to make sure the applicant had enough gas to go home," stated a caseworker.

Solutions suggested by social services staff:

- Online applications to speed up the process and save the customers from having to visit multiple locations to obtain their documents.
- Younger clients want more automation. Don't want to take off work or lunch break or bring their children to fill out application. Would help cut down on making copies. Automation could scan documents to the application.
- The application process could be made more efficient through technology. Electronic signature programs, for example. Some agencies use DocuSign to sign all the forms for the eligibility process and it is working well.
- Agencies want to have the technology to allow people to securely email/send their application documents because they are processing all applications outdoors.
- Other agencies are using Front Desk, an automated appointment scheduler.
- Biggest recommendation is to provide young adults and children with financial literacy.
- Loves idea of leveraging Head Start for automatic eligibility (e.g., enrolling eligible persons into the program without an application).
- Communication issues:
- Problem with people not showing up for appointments.

- Clients' phone numbers change often, so it's hard to get back in touch with people.
- Some clients do not know LIHEAP exists. Social service agencies like to advertise LIHEAP; however, their budgets may not allow them to do so.

Other systemic issues:

Our research also surfaced other issues that may not be solved by the utility or any one agency on its own. Those issues, however, are part of the larger system affecting applicants, and they include the following:

We identified a range of interconnected challenges within the system that impact applicants seeking assistance. These issues extend beyond the purview of any single utility or agency, necessitating a collaborative approach. Social service agency staff expressed a desire to proactively assist individuals with overdue utility bills, aiming to prevent disconnections. They also were seeking to improve visibility into clients' recent utility bills to facilitate qualification for LIHEAP. Furthermore, addressing the tendency of younger clients to seek help only after disconnection, streamlining state payment processing timelines (which currently take 60-90 days to reach utilities), and resolving problems with social service agency reimbursements are critical components.

Additionally, efforts to enhance the system should encompass the implementation of a uniform application process across agencies, the updating of the outdated LIHEAP service guide, and the provision of online tools for statistical reporting. Social service agencies seek more robust case management processes to comprehensively address family issues and advocate for digital audits by the state agency overseeing LIHEAP instead of in-person audits. They aim to eliminate the requirement to count Section 8 utility assistance against LIHEAP assistance calculations and propose increased collaboration with community partners for information sharing. Collectively, addressing these multifaceted issues requires a systemic, collaborative, and forward-looking approach to enhance support for applicants.

A few social services staff told us there were pleased the utility was conducting research. One staff person remarked, "In 20 years, have never seen a utility talk to agencies about improvements."

ADDRESSING FRICTIONS

Although our research was impactful (e.g., the LIHEAP digital app has enrolled thousands of low-income customers who have received assistance paying their utility bills in one of our service areas) and insights were gleaned which helped shape the development of products and services for the utility (e.g., Power Through generators will help businesses remain open during severe weather), the product development process took longer than was desired, in part because strategic design, as well as the

innovation process, were both new to the organization. We needed to bring more of our stakeholders in.

The first major process change to bring in those stakeholders was the creation of the innovation working group whereby we incorporated our colleagues from the operating companies, legal, regulatory, IT, sustainability, and others across the enterprise to provide a voice and ensure that our focus and work is aligned with their respective organizations and to bring back the work we are doing for support.

Another key focus area in process is the notion of "Idea to Action in 100 days." This is an intentional acceleration of the product development process whereby we have incorporated standardized processes, business models and stakeholder alignment to identify the most actionable opportunities for product development. Products will move more efficiently through the innovation process.

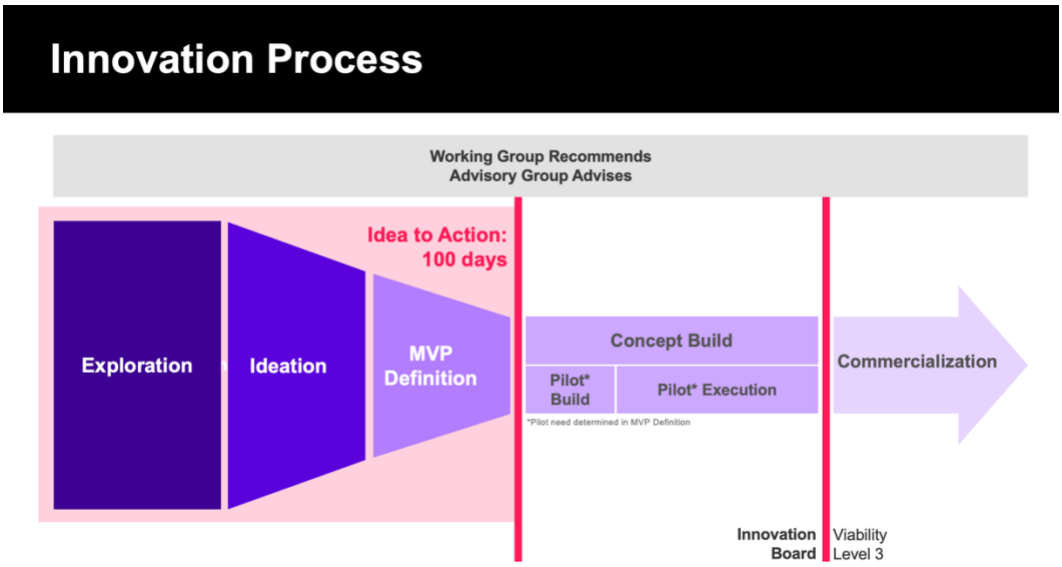

Figure 3. The KeyString Labs Innovation Process.

ORGANIZATIONAL AND BUSINESS IMPACTS OF OUR REVISED PROCESS AND ETHNOGRAPHIC RESEARCH

Our innovation process was revised several times over the course of three years, and this had three main organizational and/or business impacts that are discussed below. Ethnographic research played a critical role in helping us to better understand our customers and their needs regarding energy-related products and services.

Co-creation of Products

Our company-wide Innovation working group was organized earlier this year to further bring together various stakeholders from across our company. Instead of

meeting to approve or discontinue various service and product designs, this group of our colleagues actually work with us early in the innovation process to learn about customer frictions together, and to determine what products areas we should focus on before we form teams and ideate toward prototype development.

An Innovation Playbook

A strategic designer worked with another member of our innovation team to create an Innovation Playbook. This guide enables all innovation teams in the lab to access standardized templates to move us through each of the steps in our innovation process: from Exploration, to Ideation, Piloting, and Commercialization.

Commercialization of Products

Partly as a result of insights gained from ethnographic research, as well as co-creation workshops, and strategic sessions, a few products have recently reached the commercialization stage and are available to our customers.

One product such product is Power Through, which was commercialized in Louisiana in 2021. Power Through is a backup-generator service for commercial and industrial customers. From our company's website:

> "Power Through is an energy resilience service offering backup generation at an affordable rate. We facilitate the installation, operation, and maintenance of natural gas-fired generators at customer facilities for a monthly cost added on the customer bill rather than a total upfront cost. The generators are first and foremost to provide enhanced reliability of electricity at customer sites. Second, the generators provide energy in the electric market when not being used for emergencies. The production of energy in the electric market allows Entergy to provide this service to participating customers at a discount."

Another product which is expected to soon graduate from the pilot stage to commercialization is the LIHEAP digital application. The digital application for the federal energy assistance program was piloted in one state and should be available to our customers in two states by 2024.

CONCLUSIONS

Our work in the Gulf South region has been met with both challenges and opportunities as we strive to address the severe impacts of climate change and enhance residents' lives. Through our innovative approach, incorporating ethnographic methods and systems thinking, we have made significant progress in understanding our customers--who are the people of this region--and in guiding our product strategy. However, like many other researchers during this time, we have also had to navigate the disruptions caused by the COVID-19 pandemic.

Our ethnographic research has been instrumental in shaping the design of two key products. The Power Through backup power service for commercial and industrial customers and the LIHEAP digital application for low-to-moderate income individuals seeking energy assistance. These two products demonstrate the tangible outcomes of our research efforts. They were developed through a co-creation process that involved external and internal stakeholders and considered customers as part of a larger system.

While our journey has not been without its challenges and setbacks, we acknowledge the importance of frictions as an inherent part of the innovation process. This awareness has allowed us to learn, adapt, and refine our processes and overall research approach to better serve our customers and the community. We are committed to continuing our innovation journey, leveraging the insights gained from ethnographic research to co-create future products and services that address the energy needs of the Gulf South region.

REFERENCES CITED

Ackermann, R. 2023. Design thinking was supposed to fix the world. Where did it go wrong? MIT Technology Review.

Cabrera, D. and Cabrera, L. 2018. Connecting silos: solving the problem of organizational silos using a simple systems thinking approach. Cornell Institute for Public Affairs, Cornell University. Ithaca, zraNew York.

Entergy, 2023. Power Through. https://www.entergy.com/powerthrough/

Gennis, A. et al. 2021. Your CX Vision: How to create a customer experience vision to guide transformation. Forrester.

Hoopes, S., Abrahamson, A. Anglin, A., Connelly, C., Holdsworth, M, and Treglia, D. 2020. The ALICE Report: A financial hardship study. The United Way.

Howe, P. et al. 2015, "Geographic variation in opinions on climate change at state and local scales in the USA," Nature Climate Change. DOI: 10.1038/nclimate2583. Their maps: https://climatecommunication.yale.edu/visualizations-data/ycom-us/.

IBM Corporation. 2018. Enterprise Design Thinking Field Guide.

Kelly, E. and Dwelle, A. 2000. When Customer Insights Meet Business Constraints: Building a Go-to-Market Strategy for a Smart Home Offering in a Regulated Space, Ethnographic Practice in Industry Conference.

Lang, S. 2008. Cornell faculty identify climate change as world's most pressing problem, study finds. Cornell Chronicle.

Langford, C. 2022. UN climate report gives bleak outlook for Gulf Coast, Courthouse News Service.

Logstrup, L. et al. 2013. Designing Anthropological Reflection within an Energy Company, Ethnographic Practice in Industry Conference.

Randall, D. & Rouncefield, M. 2014. The Encyclopedia of Human Computer Interaction, 2nd Ed. Ethnography, Chapter 31.

Treadway, N. 2019. Customer experience research to improve energy assistance programs. National Energy & Utility Affordability Conference, Fort Worth, Texas.

Troug, D. et al. 2021. How to design great experiences: Your company can reap the benefits of effective experience design, Forrester.