Initiative on Behaviour and Choice

Behavioural drivers for uptake of modern cookstoves
Summary of “loop one” in Kiambu County, Kenya
2015-10-31
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This report presents findings from the first of two case studies investigating the drivers of behavioural change, in relation to adoption of new technologies at the household level. The focus of this research was the adoption of advanced cookstoves in Kiambu County, Kenya. The insights and hypotheses presented in this report will be further investigated in a subsequent case study in 2016. The research constitutes one work stream – factors influencing individual behavior - within the SEI Initiative on Behaviour and Choice. The initiative also investigates the effects of peers on individual choice and behaviour and the influence of institutions or structures beyond the household. Findings from the three work streams in two case studies will be synthesized and used to develop a conceptual frame work for understanding behavior change in the adoption of household technologies. The research presented here was conducted using service design methodology. We applied these methods in Kenya to map out, from the user’s perspective, the ecosystem for a biomass pellet cookstove, and to visualise behaviour change over time during the introduction of a new technology. The method allowed us to identify key insights about drivers of behavioural change within the system and to pinpoint critical moments where attention to the needs of these groups could enhance the user’s experience of the new cookstove and fuel, and support the formation of new habits.
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1. About the project
The study presented here is part of a two-year research programme at SEI, funded by the Swedish International Development Cooperation Agency (Sida) – the SEI Initiative on Behaviour and Choice. The initiative explores factors that influence household behaviour and decision making in developing countries in order to better understand how such factors can impact the uptake of innovative technologies at the individual and household level.

The acquisition and use of clean and efficient cookstoves and fuels is influenced by multiple behavioural factors, from individual psychology to intra-household relationships and socio-cultural considerations. A core objective of the initiative is to develop new methods and tools for understanding the various drivers of behavior and decision making when new technologies are being adopted. The core research streams in the Behaviour and Choice Initiative are 1. Drivers of individual behaviour and decision making; 2. Effects of peers and social network on individual behaviour; and 3. Actor-structure relationships beyond the household with innovative approaches outlined for addressing each. The research for each work stream will be conducted through two case studies: adoption of improved cookstoves in Kenya and in a further location in sub-Saharan Africa. The findings from each work stream, across all case studies will be synthesized and used to develop a conceptual framework for understanding the multiple drivers of behavior and choice.
BACKGROUND
OVERVIEW OF CASE STUDY

Service design methods were selected for the research conducted under work stream one: drivers of individual behavior and decision making. (See pg 11 for rationale for selecting this methodology)

During one week in September 2015 the project team carried out a first iteration using this qualitative design method in Kiambu County, Kenya. The fieldwork entailed 19 customer interactions (deep, open-ended interviews and observations with cookstove users in their homes), six one-to-one interviews with other key stakeholders, continuous analysis, ideation and development, and use of trigger material(See page 21). A stakeholder workshop was also conducted in order to collaboratively develop an ecosystem map for the cookstove programme from the perspective of the end user (see pages 23–24).

Chapter 3-5 of the report provides insights and reflections on the development and application of the method in the case study, as well as a discussion on how the methodology could be improved for the next case study based on this first loop (pages 26–27). It also summarizes indicative insights on users’ attitudes, needs and behaviours in relation to the introduction of new technology and suggestions on how stakeholders such as NGOs and product manufacturers can act on the insights.
MOTIVATION
WHY FOCUS ON COOKSTOVES?

Globally, the dependence of 2.6 billion people on traditional biomass fuels (IEA 2014) – such as firewood, charcoal, dung and agricultural residues – for cooking and heating, has significant negative impacts on health, causing more than 4 million premature deaths annually through exposure to smoke (WHO 2014). More than 700 million Africans rely on traditional biomass cooking fuels and, with population growth, that number is expected to rise to 900 million by 2020 (World Bank, forthcoming). In Kenya alone 70% of the population use traditional biomass for cooking, contributing to 14,300 annual deaths associated with exposure to indoor air pollution. Given the adverse health, development and environmental impacts associated with use of these fuels for cooking (IEA 2014; Akbar et al. 2011; Cordes 2011), there is now growing momentum in the Kenyan government and among donors and the broader international community to scale-up access to cleaner and safer cooking alternatives.

Recent guidelines developed by the World Health Organization (WHO) recommend a transition to more advanced biomass burning cookstoves or clean fuels to address the adverse health impacts, in particular acute respiratory infections in adults and children under 5 years of age (WHO 2014). Despite decades of efforts by the Kenyan government and international donors, we are yet to see a large scale uptake of improved cookstoves.
MOTIVATION
WHY FOCUS ON COOKSTOVES?

Across Kenya. Many improved cookstove projects do not gain adequate acceptance among users and often go no further than the pilot phase. A key reason for this slow progress is the lack of detailed knowledge about the drivers of behaviour at the household level. The decision to purchase a new cookstove is influenced by multiple factors and, following acquisition, the adoption (i.e. correct and consistent use) of a new technology by users and households often requires a significant shift in behaviour.

Much of the previous analyses of drivers of household behaviour and decision-making related to the acquisition and adoption of a new technology has focused on understanding how standard socioeconomic variables, such as age, income, education and economic status, affect uptake (see e.g. Lewis and Pattanayak 2012; Heltberg 2004; Gupta and Köhlin 2006; Narasimha Rao and Reddy 2007). However, it is increasingly recognised that in order to be successful, technical interventions need to better ‘account for the human factor’, i.e. the multiple behavioural and social factors that affect whether an intervention is successful (World Bank 2014). In the context of improved cookstoves, this requires understanding the decision making processes around the acquisition and sustained use of such products.

This study aims to generate new knowledge about the drivers of behaviour and choice at the household level in Kenya. Insights from the research will be used to improve a draft theoretical framework for understanding behaviour change in the context of improved cookstoves, not only in Kenya but also in other developing counties. The information generated from this research will be useful for energy practitioners driving the cookstove sector, including policy-makers, development practitioners and private sector actors seeking to improve on the design of their programmes, techniques and mechanisms for delivering these technologies to the end user (e.g. marketing approaches, health campaigns or financial support programmes).
MOTIVATION
WHY FOCUS ON COOKSTOVES?

Rough model of how cookstove and fuel use relates to household air pollution and CO2 emissions:
MOTIVATION
WHY USE A SERVICE DESIGN APPROACH?

Service design is a qualitative approach to understanding the particular needs and wider contexts of the users of a service or product system. There is no fixed definition of service design as a discipline; rather there are a number of defining principles of service design as an approach. To begin with it is “user centred”, in other words the user of the service or product is placed at the centre of the service design process. Although statistical descriptions of customers are useful, an understanding of habits, socio-cultural context and underlying individual motivations is essential.

Gaining authentic customer insights involves the use of tools and methods that allow the researcher to stand in the shoes of the user to understand their experience of a service in their wider context (Stickdorn and Schneider 2012). Service design is also co-creative. Service designers are skilled at listening to the experiences and ideas of different stakeholders and generating an environment that allows for these ideas and experiences to be articulated, evaluated and gradually translated into tangible solutions for solving a particular problem.

Service design has been used in the “developed world” context to address challenges and create social innovations across diverse areas, including commercially focused projects and community development and public sector initiatives (Edmunds and Cook 2014) but is yet to take hold in the “developing world”.

Service Design is an iterative and user centered approach. For a description of the different steps in the process, see Methodology pg 20-21
MOTIVATION
WHY USE A SERVICE DESIGN APPROACH?

BUILDING ON PREVIOUS WORK AT SEI

In recent years, SEI has been working to develop and test innovative methods to understand how individuals and households in developing countries make choices related to the purchase and use of improved cookstoves. Realising the central importance of the individual end user’s wider context in order to design the product or service, SEI began to pilot methods inspired by service design in our projects on household energy and improved cookstoves. For example we have been using deep, open-ended interviews and observation (in India, Zambia, Kenya and Nepal); trigger material (in India and Kenya) in our research to understand behaviour related to cookstove choice and use. (See e.g. Atteridge et al. 2013; Lambe and Atteridge 2012)

The methods we tested helped us to generate useful insights, but tended to be one-off trials of particular techniques and tools; we did not have the time or resources to fully implement all four stages of a Service Design process. This meant that interesting insights gathered using these tools were not necessarily developed through further iterative loops during the fieldwork stage. For the behaviour and choice case studies, it was decided that we would implement the full service design process. In doing so, we intentionally designed the research to include the four main steps in the iterative process. Crucially, an iterative process ensures continuous reflection and, consequently, adjustment of the method during the data collection process, which is not how we typically conduct data collection. By taking an iterative approach, we are consciously building in space for “mistakes” to be made – both in terms of the hypotheses and assumptions that are made both when designing the interview guide and in the implementation of the methods. Again, the idea here is that the method is constantly assessed and adjusted as it is applied.

It was also decided that we would implement it to ensure methodological coherence in the application of the approach in a new context (to our knowledge, this is the first time SD methods have been applied in a developing country context). Furthermore, service designers are experts in quickly visualising ideas, solutions and future scenarios, often through quick sketches that can be shown to the interviewee to provoke or “trigger” a response. Although SEI has experimented with trigger material in previous projects, we are not trained to quickly produce trigger material during fieldwork.
PROJECT PLAN
CORE RESEARCH STREAM 1: DRIVERS OF INDIVIDUAL BEHAVIOUR AND DECISION MAKING

START UP
- Project launch meetings
- Hypothesis for methodology adaptations to the specific case study
- To review earlier research
- Planning for research documentation
- Identify key interview areas

CASE STUDY 1
- Stakeholder meetings/interviews
- Iterations of: customer interactions (household interviews), analysis, idea-
  tion and production of trigger material
- Stakeholder ecosystem workshop

ANALYSIS
- Final analysis of key insights from case study
- Final analysis of methodology
- Draft report and visualisations
- Film documentation
- Internal peer review
- External review (Global Cookstove Alliance conference)

CASE STUDY 2
- (Start up for case study 2)
- Stakeholder meetings/interviews
- Iterations of: customer interactions (household interviews), analysis, idea-
  tion and production of trigger material
- Stakeholder ecosystem workshop

FINAL ANALYSIS
- Final analysis of key findings from Case study 2 and both case studies in parallel
- Final analysis on methodology
- Draft report
- Internal peer review
- Publication of report and final presentation

21 AUG 12 SEPT 1 OCT MARCH APRIL
CASE STUDY 1

KEY RESEARCH QUESTION:

“WHAT ARE THE KEY DRIVERS OF INDIVIDUAL BEHAVIOUR RELATED TO THE UPTAKE OF ADVANCED COOKSTOVES IN KIAMBU COUNTY, KENYA?”
CASE STUDY 1
THE STUDY SITE: KIAMBU COUNTY, CENTRAL KENYA

The site was selected for the following reasons:

- A strong partnership between SEI and SNV Netherlands Development Organisation, an international NGO that is active in the location.

- Existing market for advanced biomass stoves. The stove type is relevant because it is the design that can achieve the desired health and climate benefits.

- Large sections of the population have not yet purchased improved/advanced cookstoves

- Unlike regions of extreme poverty in Kenya where income is a key deterrent of adoption, households in this region have some level of purchasing power for improved stoves; hence it is possible to study underlying factors that influence decision making.
CASE STUDY 1
ABOUT THE SNV COOKSTOVE PROGRAMME IN KIAMBU

Kenya has a long history of implementing improved cookstove programmes, many initiated in the 1980s and 1990s with support from donors and the government. SNV Kenya began to expand into the ICS sector in 2011 and was contracted by the Global Alliance for Clean Cookstoves (GACC) to work with GIZ to develop the ICS country action plan for Kenya. The result was the formation of the Clean Cookstoves Association of Kenya (CCAK), of which SNV Kenya is the chair.

A survey of the sector showed that most ICS actors were working with lower tier stoves and there was a gap in terms of more advanced stoves that could meet the WHO guidelines for household air pollution. In 2014 SNV Kenya embarked upon the Clean and Efficient Cook Stove Project, a two-year, SNV-funded pilot to build a market supply chain for gasifier stoves. The Philips pellet cookstove programme in Kiambu is part of this larger project, the aim of which is to build capacity and link together gasifier stove producers, distributors, retailers (acting as last-mile entrepreneurs) and financial organizations.

To distribute the stoves Kiambu County, SNV is working with Visionary Empowerment Programme (VEP), a micro finance institution in. VEP works with about 18,000 women throughout Kenya and initially began working with SNV Kenya as an implementing partner in the biogas sector. It had gained experience in cookstoves by working with two other companies, Paradigm and Ecozoom in 2011, and through the Clean and Efficient Cook Stove Project it has become the sole distributor of Philips stoves in Kenya.

VEP works through existing women’s savings and loans groups by providing their members with the loans to purchase “life enhancing products” including the Philips stove. VEP representatives attend the women’s monthly group meetings where they demonstrate and promote these products. The members pay a fee to VEP to administer the loans, which are typically repaid in monthly instalments. VEP is the main link between the women and Philips – they place orders with Philips, based on the requests they receive and they provide support to the women in case stoves break/malfunction and report problems to the local Philips representative in Nairobi. To encourage the use of pellets, VEP also offers a free trial of pellets to everyone who signs up for the stove.
CASE STUDY 1
ABOUT THE RESPONDENTS

This report is based on user interactions and stakeholder interviews in Kiambu County, Kenya. During the course of five days, the team conducted observations and interviews with 19 households as well as several other stakeholder groups, and presented an initial analysis in a stakeholder workshop.

All women interviewed were members in VEP and had either received or signed up for the Philips cookstove. There was an even spread between households who had already received and started to use the stove and households who had not yet received the cookstove.

The average household size is four and most (13) households reported agriculture as their main source of income, with several (6) deriving an income from running small businesses. The majority of households (14) have access to electricity, though most report using it for lighting and powering electrical devices (e.g. TV and phone charging). None of the households reported using electricity for cooking. Fuelwood is the primary source of cooking energy for 14 households and charcoal is the main source for 5 households. Six households reported using LPG and three reported using pellets.

(Basic demographic data was gathered through a short questionnaire administered prior to the interviews.)
CASE STUDY 1
STAKEHOLDERS: WHO HAS BEEN INVOLVED, AND WHY?

STOCKHOLM ENVIRONMENT INSTITUTE (SEI)
Lead partner for the research with existing links to both VEP and SNV. SEI’s mission is to support decision-making and induce change towards sustainable development around the world by providing integrative knowledge that bridges science and policy in the field of environment and development.

TRANSFORMATOR DESIGN (TD)
Service design company, key research partner for SEI. Experts on the iterative methodology used in Case Study 1.

SNV
Large Dutch NGO with a main mission to reduce poverty. Supporting the development of commercial markets for advanced biomass cookstoves in Kenya.

VISIONARY EMPOWERMENT PROGRAMME (VEP)
Microfinance institution and cookstove distributor. VEP provides loans to its members, mostly women’s savings and loans groups for cookstoves. VEP is in direct contact with both the women’s groups and individual members and facilitated the household interviews.

PHILIPS
Manufacturer of advanced cookstoves with its HQ in South Africa and regional office in Nairobi. VEP is in regular contact with the Philips regional representative to order stock and report malfunctioning cookstoves.

Figure shows the relationship between the various key stakeholders in Case study 1, Core research stream 1.
2. Methodology

A brief description of the process and approach applied in this case study
METHODOLOGY
SERVICE DESIGN: A COLLABORATIVE AND USER-CENTRED APPROACH TO SOLVING PROBLEMS

ITERATIVE APPROACH

The service design process includes four key stages: interactions with customers (household interviews); insights (formulated after each set of interactions); ideation (generating ideas for meeting a need or solving a problem); and triggers (developing triggers to elicit a response from the respondent). See pages 20-21 for details on each stage. As mentioned above, service design thinking is an iterative process with research typically beginning “wide” to include the whole context and then gradually narrowing the focus. This narrowing down occurs after each iterative loop (containing all four stages of the process).

Typical project plan for a service design project, starting with a wide research question, and delivery including finished designs:

In this project, each case study corresponds to one loop and delivery will be after two loops, focusing on insights rather than designs for solutions. The iterative approach is also applied within each case study.
The purpose of this stage is to engage with the end users of a service, product or system to understand the wider context of their lives, where the product or service fits in, and how the customer perceives or experiences the service or product. Typically this is done through deep interviews and observation where the service design team speaks with the end users and encourages them to tell their own stories. The interviewee steers the interview and the service designer “follows” their lead. The method is highly qualitative and as such, few interviews are conducted per case. In this case, we interviewed 19 households in Thika and Kikuyu. After approximately 15 interviews, we began to reach “saturation”; that is, we were hearing very similar stories, barriers and opinions. We also interviewed staff from VEP and SNV to understand how the cookstove programme is working.

The information gathered during the interviews is reviewed by the team. After the first round of data gathering there is usually a very large amount of data and this stage is predominantly about recognising emerging patterns. The team typically clusters the data into categories which can be used to generate insights. The insights are an attempt to go beyond the individual data points to find meaning in them.
Based on the insights extracted during stage two, the team generates ideas for potential solutions to the problem.

In this case, ideas included allowing women to choose between various products offered by VEP, allowing them to make informed choices, allowing women to plan their future purchases, and developing pellets delivery system.

These ideas are then illustrated (either in sketches, scenarios, scale models, or even prototype products). This material is then used in the next round or iteration of interviews with end users to “trigger” them to share further insights about their experience of the service or product. By allowing the end user to imagine a possible solution or future alternative, this method is particularly useful for supporting or provoking interviewees to share their perceptions and opinions about the current situation. See Annex C and Annex D for trigger material used in this study.
METHODOLOGY

STAKEHOLDER INVOLVEMENT

INITIAL STAKEHOLDER UNDERSTANDING

Co-creation with different kind of stakeholders is an important part of the service design approach, in order to obtain a holistic understanding of the problems and possible sustainable solutions. In the beginning of the case study interviews and meetings were carried out with a variety of different stakeholders, including VEP and SNV, directly involved in the project, but also UN women and cookstove entrepreneurs with experience in the area. The insights from the stakeholder interviews were incorporated into the design of the interview guides.

CO-CREATING WORKSHOP

After conducting two iterative loops in the field, the data were analyzed again to generate a set of overarching insights – these were then presented through a customer journey (see pg 31) to a group of key stakeholders during a “stakeholder ecosystem workshop”. The stakeholders were representatives from VEP, SNV and UN Women.

In the workshop we went through the “pain points” that were perceived from the end users’ point of view, and ideated possible improvements that could be made by the different actors involved in supplying the service. Participants in the workshop also ideated possible solutions both for their own part in the system, as well as in interactions between them and other actors.

A first draft of the customer journey with main painpoints was presented at the workshop, with a working area below, which was used to explore root causes for the pain points.
THE ECOSYSTEM MAP
The aim of the ecosystem map is to show not only the pain points for the end user, but to identify root causes for those pain points (the obstacles for all the actors involved in supplying the service) in order to ideate possible solutions regardless of actor.

The ecosystem map is a tool that allows a holistic way of solving end user problems when designing complex systems. By tracking the end users’ pain points vertically in the ecosystem map, it is possible to derive what actions caused those pain points. And gathering all the involved actors and co-ideating improvements and possible solutions provides a platform for building consensus about the problems and the possible solutions in order to improve the end user’s experience.

For larger image, see Annex E
PAIN POINT FOR THE END USER: VEP PRESENTATION

Because they didn’t get to try out themselves, they are not informed about pellets, the benefits of using them, how to get them and how to use them. They lack a way of knowing how this particular product relates to coming products (ie if it is worth buying this product or wait for a future one)

POSSIBLE IMPROVEMENTS IN DIFFERENT ACTOR’S LANES

FAMILY AND FRIENDS:
Visit friends that have stove, independent parts that can show how the stove is used in their everyday life with pros and cons

WOMENS GROUP:
Explain in understandable language at demonstration, allow for the women to try the stove themselves. Be transparent with pros and cons.

VEP:
Provide a product overview on released and upcoming products. Make it easy for the women to compare products and purchases on short- and longterm perspective.

POLICY MAKERS:
Provide reports on fuel testing.
**METHODOLOGY - REFLECTIONS**

**STRENGTHS OF THE METHOD AS APPLIED IN THE KIAMBU CASE STUDY**

**Ensures wider context is included:** Service design aims to make empathic connections with future users of a service, and tries to step into their shoes as a key starting point in the process of exploring an existing service/system and how it could be changed/improved (Segelström et al.) Standing in someone’s shoes requires an understanding of their entire context, on an emotional as well as practical or technical level. Rather than focusing on cooking energy at the outset of the customer interactions, we instead asked very general questions about people’s lives and livelihoods, their hopes, ambitions and dreams. The information gathered early in the process allowed us to situate the Philips cookstove intervention in each individual’s life based on their individual expectations, prerequisites, needs and perspectives.

**Allows for shared visualisation of complex problems:** Service Design methods are particularly useful for mapping out a complex system from the end user’s perspective. For example, the customer journey map is a powerful tool for collating and describing in detail the experience of users of a service, product or system, over time and where there are problems/difficulties in the system. The CJM can be further developed into an “ecosystem map” for an entire product/service system, including a wide range of stakeholders who play a role in the system, and to identify actions they could take to overcome bottlenecks identified in the CJM. In this case study we developed an ecosystem map for the Philips cookstove initiative together with some key stakeholders including donors and implementers. This allowed for a shared understanding of problems at various levels, not previously articulated. For example, the higher level management of VEP (microfinance group) was not aware of many of the practical, logistical difficulties facing their field staff. Once problems were made visible and connected back to the end users, the stakeholders began to brainstorm around viable solutions.

**Empathic methods for building trust:** Trust building is an essential element when gathering information about people’s wider contexts, particularly when soliciting information that is sensitive or difficult to verbalise. The service design approach to conducting an interview is intentionally informal, aiming to create an atmosphere where people feel comfortable telling their stories and sharing details of their lives.

**Flexible:** Although we had well developed interview guides when going into the field, there was space to change or remove questions after every round of interactions – indeed; making constant adjustments iteratively to the tools is a key characteristic of the SD approach.

**Useful for co-defining the problem (as well as co-creating the solution):** Although we had clearly articulated research questions from the outset, the SD method allowed for reframing of the “problem” from the perspective of the households.
METHODOLOGY - REFLECTIONS
CHALLENGES OF THE METHOD AS APPLIED IN THE KIAMBU CASE STUDY

Need for more balance between interactions, analysis and ideation: a defining characteristic and strength of service design methods is that analysis takes place after each iterative loop. However, given the demanding nature of the household interactions, described above, there was often less time and energy available for analysis following each loop.

Method reflection was unsystematic during the fieldwork: Given that this is a relatively new method in this context, as well as a new approach for SEI, it would have been useful to record our reflections on the methods in a more systematic way during the fieldwork. Being explicit about the methods step by step during fieldwork is particularly important to avoid misunderstanding when SEI and Transformator’s two different “cultures” (ways of working, thinking, talking) come together.

Translation was a major challenge: Rather than a traditional question and answer format, the aim of the interactions was to allow the women to tell their stories in their own words and for them to steer the conversation. Thus, at times our questions were just triggers or starting points to a wider conversation – rather than specific questions demanding a definitive response. This was challenging for the translators who tended to view their role as purely translating answers to the questions we asked, and, as such, often edited and reduced the content of people’s responses, or even worse, cut people off when they began to tell their stories. In hindsight, this could have been avoided if we had provided some training to the translators on the methods and briefed them more thoroughly on our objectives.

Interactions are time consuming: We underestimated the time and energy that would be needed for the household interactions in this context. Given the very open ended nature of the interactions, it was difficult to predict how long each one would take, and since the households selected were spread out (at our request), and distances between households were often further than we realised, it was difficult to stick to the original schedule. As a result we interviewed fewer households than planned. Furthermore, each interview was demanding in that it required us to make constant small adjustments to the interview guide, create trigger material, and document the process (shoot film and take photographs during each interaction).

Need for “Kick off” workshop with local stakeholders: Although we convened a very useful workshop where we presented findings following the first loop, we never had an initial stakeholder meeting together with all stakeholders to jointly define the “problem”, explain the methods, etc. Instead, we opted for separate meetings with each stakeholder to discuss our approach and to find more about their role in and perception of how the system is working. Although useful, we missed the opportunity to facilitate a collective discussion around the Philips cookstove programme, the aims of our research and the key problems from the stakeholders’ perspectives. This would have helped us to further frame the research by highlighting the somewhat divergent goals of the key actors.
3. Case Study 1: The Customer Journey

A customer journey map is a visualization of a customer’s experience of going through the entire process of using a service. It is a summary of the different phases and events that many of the respondents have talked about and draws out the main findings on a case-specific level.
CASE STUDY 1 CUSTOMER JOURNEY - OVERVIEW

CONSULTING HUSBAND/PEER

PRODUCT DEMONSTRATION

PAYING OFF CURRENT LOAN

SIGNING UP

WAITING

GETTING IT

GETTING FUEL, PAYING OF LOAN AND CHARGING IT

FINDING MY WAY OF USING IT

USING IT ALL THE TIME

ONLY USING IT SOMETIMES

NOT USING IT

GETTING FREE PELLETS

"MISUSE"

BREAKAGE
CUSTOMER JOURNEY MAP
The CJM visualizes the customers’ experience of acquiring a Philips cookstove in Kiambu, Kenya.

= indicates an alternative route that the majority does not experience, but many do.
○ = indicates events that the customers experience. They show an order but are not meant to indicate time.
🌩 = indicates the main “pain points” for the customer in the experience.
💖 = indicates the main “gain points” for the customer in the experience.
“ = The quotes are from actual customer interactions and represent opinions or experiences from users themselves.

The different blocks represent different phases of the customer experience, but do not indicate proportions in time.

BEFORE  DURING  AFTER

These symbols indicate where there is a risk of reduction in effect.

WANTED EFFECTS  ACTUAL EFFECTS

Transformator Design 2015
CASE STUDY 1 CUSTOMER JOURNEY - DETAILED OVERVIEW

BEFORE
- GOING TO MEETINGS
- PRODUCT DEMONSTRATION
- PAYING OFF CURRENT LOAN
- SIGNING UP
- WAITING

WARENESS & ACQUIRING
- CONSULTING HUSBAND/PEER

START-UP PHASE
- GETTING FUEL
- CHARGING
- PAYING OFF LOAN
- GETTING IT
- FINDING MY WAY OF USING IT
- MISUSE
- BREAKAGE
- USING IT ALL THE TIME
- NOT USING IT
- ONLY USING IT SOMETIMES
- CHANGE OF STOVE

NEW HABIT ESTABLISHED
- GETTING FREE PELLETS
- OTHER FUEL

AFTER
CASE STUDY 1 CUSTOMER JOURNEY - GOING TO MEETINGS

CASE FINDINGS
All respondents in this project were members of V.E.P, the microfinance organisation for women that is the primary marketer and distributor of the Philips stove. VEP operates as a merry-go-round system for saving and lending and members pay a fee once a month at group meetings. A representative from V.E.P is present at all meetings.

The meetings appear to have religious undertones, with prayers at the start. Some women experience the group as a safe and trusting context, where members look out for one another and are part of a tight-knit community. There were stories of groups paying members’ hospital bills and calling to check on members who don’t appear at church on Sunday. Others claim they need the group for financial empowerment, but that they had difficulty paying the mandatory monthly fee. Members’ loan credit and lending conditions depend on their record repaying loans and ability in paying monthly fees. Some women reported that they would not dare to admit that they could not afford the fees, choosing instead to borrow money from friends or relatives in order to afford it, rather than risk being excluded from the group or receiving less favourable conditions.

The women’s groups are both a financial enabler for the members to investing in the stove, but also an important source of quality assurance given the high level of trust between members. The groups also cultivate a mindset of saving and long term planning. However, there might be a risk of negative peer pressure since not all potential cookstove users have the money, religious affiliation or gender to be part of V.E.P and might therefore miss out on information about new products such as cookstoves.

"We take care of each other and they teach us values, like not to lie or be late with payments”
(Woman on the microfinance womens’ group)
The VEP field officers sometimes bring new products to demonstrate at the monthly meetings and invite members to sign up for the product (and loan). There is rarely any prior warning that a demonstration will take place. In some of the meetings there had just been a verbal presentation of advantages, without any demonstration of the stove. In most meetings however, the stove was present and the officer from VEP demonstrated how quick and smokeless it was to cook tea.

Many of the women we interviewed have experienced being deceived when purchasing products from other vendors, for example, it is common to purchase gas cylinders that are only half full or ignition spirits for the pellet stoves that have been adulterated. In contrast to other vendors, VEP provides a crucial quality assurance for households to feel safe investing in a new and expensive product. So the demonstrations are appreciated, members appear to trust VEP and seem sure that the products they introduce will improve their lives.

However, many women we interviewed expressed a desire to be able to try the stove out prior to purchasing it, and having a deeper understanding of how to use it for cooking different dishes. Having this prior knowledge would allow them to make a more informed decision.

On a practical level, many women expressed a desire to know in advance when a product would be demonstrated since these meetings normally take much longer than regular meetings. This way they could make the necessary arrangements to be to be able to attend the meetings and be able to stay for the full length of time.

After triggering the scenario, many also claim that they would appreciate being able to make request for specific products, so that both the demonstrations and the entire product-range would actually be need-driven, from the local members’ point of view and what would improve their lives the most. One woman said she hoped that one day VEP would bring in a gas stove, wich they actually had in their product range already. But they do not inform of the full range, they rather have focused campaigns on one product at a time.

“I’m sure, if VEP suggests a product, it’s good for me”

(Woman on whether she would like to receive impartial product information)
CASE FINDINGS:
Most women interviewed had signed up immediately in the meeting and were very positive about the decision. Saving money was perceived to be the number one unique selling point for the stove. Next was the time saving attributes of the stove and the fact that it reduces smoke, although this was considered positive more in terms of convenience because it allowed users to cook in the house/livingroom – nobody referred explicitly to the positive health impacts.

The compatibility with different kinds of fuels was also reported as being a great advantage of using the pellet stove. This flexibility allows for the user to choose the fuel most suited to their needs at a given time. Members who had access to free firewood would use firewood in order to save money. If there was a lack of firewood or the wood was damp, they would use charcoal instead. If charcoal became more expensive, as it does during the rainy season, some users would consider pellets. However, many users had never heard of pellets and the associated advantages. Fewer still were aware that there was supposed to be a free trial-period of pellets included in the purchase.

The Philips stove is used and maintained in a very different way to the member’s current stoves, but many were not aware of this prior to purchasing it. In particular, those who had not seen a demonstration before signing up were particularly lacking in knowledge. The fact that the stove needs to be charged on a weekly basis, the requirement that fuel is chopped into small pieces and that the stove can’t be left unattended are examples of critical pieces of information that many members were not aware of. These gaps in knowledge could lead to disappointment once the members receive the stove and, ultimately, the risk that they won’t really start using it.

“I heard it will make firewood for one month last for six months!”
(Woman that had signed up for the stove but not yet received it)
CASE FINDINGS:
This study is based on interactions with only VEP members that either have acquired, or signed up for, the Philips stove. As described above, most members signing up for the stove do so straight away in the demonstration meeting. However, some members would wait. The reasons reported for waiting were either to consult their husband about their household economy or because they had to repay another loan from the organization for another product. Many had several loans that they would repay in parallel.

VEP representatives claim that often when men see the stove being demonstrated in a market, they are immediately convinced by the technology and try to persuade their wives to purchase it. However, VEP only targets women – there is no information aimed at the husband as a whole.

In order to proactively prevent disappointment among members that buy the stove, VEP could enable and encourage members to make well-informed choices and carefully consider the purchase rather than signing up straight away. Within the women's groups, the most trustworthy information comes from other users, and there was an interest amongst users and non-users to set up some kind of Tupperware-party-system in order to spread knowledge (on correct use and maintenance), provide useful tips to enhance the experience of using the stove and to distribute both fuel and stoves.

Many respondents said they would have appreciated having more information on which to base their decision. This included information on aspects such as lifespan, ease of cleaning, fuel compatibility, fuel consumption and the primary pros and cons of usage.

Comparisons between several different kinds of stoves were seen as the most useful information, but respondents also appreciated a trigger where the investment in a stove would be compared with added value and price of other products available through V.E.P. This would enable them to make strategic, long-term decisions for their economy via printed brochures. This information could be made accessible through printed brochures, in additional demonstrations and/or in personal counselling with VEP, where the member’s full context, economic situation and long term ambitions are fully considered.

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CASE STUDY 1 CUSTOMER JOURNEY - CONSULTING PEER / PAYING OFF CURRENT LOAN

CASE STUDY 1 CUSTOMER JOURNEY - CONSULTING PEER / PAYING OFF CURRENT LOAN

“"What would really improve my life?... electricity”
(Woman when asked what else would improve her life)
CASE FINDINGS:
After signing up there is often a wait before the stove is delivered. Some would only have to wait until the next monthly meeting or until they have the possibility to visit the VEP office and collect a stove. At the time of this project there had been a delay of delivery from the manufacturer and several members had waited five to eight months. Those still waiting had no clear idea of when their stove would arrive. The positive feeling that had been created when hearing about, and signing up for the stove had started to fade.

One woman said her husband thought they should just “get out of the deal”, because it looked like the stove would never arrive. Another was the only one of the women in her group that had not yet received her stove. The other members had almost repaid their loans for it. She was very resigned and reported feeling left behind and left out.

Even when there are stoves in stock, the distribution is dependent on customers being able to make their way to the main office or on the VEP field officer physically carrying the stoves to the meetings. An officer usually goes by public transport and attends several meetings every day. Distribution is therefore delayed because of the officer’s physical limitations to deliver the stoves.

In order to prevent this kind of situation, adequate stock and means of distribution should be assured before allowing new members to sign up. When signing up, members should have a clear idea of when they will receive the stove and be informed in advance if there will be any further delays.

“My husband is starting to think we should just forget about it”
(Woman that has been waiting for five months so far since signing up, still without information on when it will arrive)
CASE FINDINGS:
Some members would get the stove by picking it up at the VEP head office. Some would get it at the women group meeting and yet others would get a home delivery, if their field officer from VEP is in the neighbourhood for a meeting with another group.

The point when the user acquires the stove is in many ways a moment of truth, especially if they have waited so long for it they have forgotten the details about its appearance and functionality, or if they have signed up for it at a meeting without ever seeing it. This could be a crucial moment for VEP to soften the negative effect of any false expectations amongst the members and to make sure they get a smooth start. From VEP’s perspective, this is where their part in the journey ends, but from a customer perspective this is where the journey really starts. If VEP were present throughout the start-up phase, they could guide and encourage the customer to use the stove so as to maximize the health and environmental benefits.

Most respondents did get a brochure with the stove, but say they would want to have more support in finding their own way of using it; e.g. learning how much fuel to use per meal. Examples of support that respondents would like include stove delivery to the home, the opportunity to cook one meal in the presence of a VEP representative; and having a monthly meeting after several members had received their stove for a Q&A on stove usage and exchange of advice. There could also be individual enquires by text message or phone call one week to one month after the stove delivery to make sure the customer had received their stove, that they were pleased with the product and to provide an opportunity for further questions or complaints.

"I didn’t know it wouldn’t take normal pieces of firewood"
(Woman that had never seen the stove before she got it)
CASE FINDINGS:
Processed biomass pellets are the most efficient fuel to use with the Philips stove, and are associated with the greatest benefits both in terms of CO2 reduction and impacts on health. Both VEP and SNV aim to support households to use pellets in the Philips stoves.

However, pelletized biomass is a new form of fuel to the market and does not yet have an established value chain in Kenya. Crucially, the households we interviewed are generally not aware that pellets exist. Furthermore, there is a perception amongst households that pellets are expensive and they are typically compared with charcoal or firewood in terms of volume of fuel per Kenyan Shilling, rather than the comparative efficiency of different fuels. Since most people have no prior experience using pellets, they need to try them in order to evaluate cost and efficiency relative to other fuels.

The VEP cookstove distribution model includes includes a free trial of pellets (a 13-15kg sack), with the cost included in the price of the stove. According to VEP, most customers were very pleased with the new fuel and came back to purchase more. However, many of the respondents we interviewed had not yet received their free pellets after several months, and many had never heard of pellets let alone the fact that there was supposed to be a free trial-period. As with the stove delivery system, the field officers’ lack of capacity to physically deliver large bulky parcels was a key barrier to distribution. The women we spoke to thought it would be a good idea for members to become pellet-resellers, or be able to buy a big bag together as a group to try the fuel out.

The primary perceived advantage of the pellets was that they were good to keep in store as a back-up for other fuel, or to help light up the firewood or charcoal.

"I have never heard of pellets, but it sounds interesting!"
(Woman that had signed up for the stove)
CASE STUDY 1 CUSTOMER JOURNEY - FINDING MY WAY OF USING IT

CASE FINDINGS:
The real evaluation takes place when the customer starts using the new stove as part of their daily routine. This is when the user decides whether they made the right decision in purchasing the new stove. Users discover many things that they did not consider before the purchase, especially those who had not seen it. Evaluation depends on the users’ behaviour and needs. Feedback included comments such as that it cooked too quickly, not allowing the user to leave it unattended, or that it was a great thing that it cooked so quickly, leaving time for other things; or that it was attractive because it was modern, different and easy to clean, or that it was intimidating with its modernity and buttons; or that the base was so clean it would allow for cooking on a table and be more ergonomic; or that the base was so unstable and fragile (with the charging outlet) that you needed to prepare the floor of the cooking shed with a sack and stabilise it to prevent dirt from destroying it; or that it would not allow cooking several pots at the same time or intense stirring, or support big pots; or that left-over pellets could not be saved and used the day after, like charcoal.

This stage is also where habits are being shaped that will affect the customers’ use of the stove and that will affect the long-term improvements for both individual health and the environment. Apart from using it with different kinds of fuel and cooking positions, other ways of using it included letting the kids cook; moving the stove while cooking; and using big pieces of wood that stick out with risk of falling down, burning the stove and starting a fire. Many requested more advice on how to get started with the stove (e.g. how much fuel to use per meal). This could be an opportunity for VEP to encourage safe and environmentally sound use, through mentioning it in combination with technical support, or Q&A sessions, or just a follow-up text or phonecall to see if customers are happy with their product.

"Before I had to close the store to go home to cook lunch, but because its portable, now I can bring the stove to the shop"
(Woman on how she used her new cookstove)
CASE FINDINGS:
Getting the Philips cookstove does not only mean a new way of cooking; it changes the everyday routine in several ways. It also means the household will have to start paying off a (new) loan, which will affect household finances. They have to start charging the stove around once a week (depending on usage), which becomes a bigger issue for households that do not have electricity and have to take it to a charging point and possibly pay for charging as well. Getting fuel was a routine for the households even with the earlier stoves, but depending on whether there is a fuel switch. Many currently have free access to firewood, charcoal is available to buy everywhere (many buy a small amount every day) while several said they had home delivery of gas (without extra charge). Compare this with going to the VEP office to buy big bags of pellets that last 1-3 months, or having to chop up firewood in tiny pieces instead of larger logs – this would mean quite big changes in behaviour and routine, and could mean a big threshold in getting started in using a new stove.

“...electricity, but we can take it to the neighbours to charge. It's a good thing it's easy to carry!”
(Man discussing the new routines that the stove would bring)

RISK OF EFFECT REDUCTION: Customers creating habits around usage that are not safe or not optimal for reducing negative health and environmental impacts. The new routines posing a significant barrier to adoption.

RELATES TO KEY INSIGHTS:
2. A cookstove needs to meet the end users’ definition of “improved” in order to reach adoption
4. “Getting started” phase is most critical when shaping new behaviours and achieving adoption
5. A positive experience through the whole customer journey creates important ambassadors
CASE FINDINGS:
In the absence of clear instructions and follow up on correct use of the stoves, many respondents described how, after some time they found their “own way” of using the stove. The risk here is that the stove is used incorrectly which could lead to breakage or even accidents which could damage the impression of quality of the product and decrease the customer satisfaction. As mentioned above (in “finding my way of using it”), moving it while cooking, using large pieces of wood, or letting children cook on it are not recommended in the official Philips brochure.

Furthermore, several of the stoves we saw had begun to malfunction due to manufacturing faults with the button or fan. A one year warranty was supposed to be included when buying the stove, but many users were unaware of this, or of how to make use of it. Some women who had a good relationship with their VEP-representatives reported bringing their malfunctioning stove to the VEP office on their own initiative, seemingly unaware of the warranty.

Respondents were very positive when discussing the warranty. When asked why a warranty is so important, many noted that it would guarantee stove reparation even if you were low on cash that month or on the day the stove breaks. When asked, several respondents claimed they were willing to pay for having the warranty prolonged after one year and would appreciate a reminder being sent to them when the warranty is about to run out.

"If it breaks, I guess I’ll take it to a Fundi"
(Woman who was not aware that she had a one year warranty for her stove. Fundi = metalworker)
CASE FINDINGS:
If the cookstove meets the users’ definition of improved, it will be used. However, the definition of “improved” varies from user to user. For example, one user described having to spend much more time on chopping up wood than they had done with their earlier stove (because the Philips stove can only be fed with very small pieces of fuel), but since for this household time was less scarce than money, they still perceived the stove as being an improvement. Other users claimed that saving time was the main improvement, or that they appreciated the look and modernity of the stove. Many were proud to be early adopters and one woman would invite everyone over to demonstrate the stove, for her it was more of a lifestyle accessory that increased her social status. On the downside, she perceived the stove as being fragile, needing more maintenance and it sometimes burned her food. Other households would use it when they ran out of gas for their LPG-stove, as an improved back-up plan. Some would use it as a quick way to heat water in the mornings, while they would still cook dishes requiring long simmering on a three-stone stove that they could leave it unattended for several hours. For them the Philips stove is an “improved breakfast-stove”.

In no household did the Philips stove meet all cooking needs; instead most households “stack” their stoves, that is, use different stoves for different purposes, and with a variety of fuels. This raises the question, whether all of these users should have been advised to invest in the stove in the first place and, given these diverse behaviour groups, whether it will be possible for the programme implementers to meet their overall objectives (in terms of health, environment and development benefits).

"I use it when I run out of gas.../I call the gas guy and they are here in 30 minutes, delivery free of charge"

(Woman on when she used the Philips cookstove)
CASE FINDINGS:
Since all the women in the study had received the stove quite recently (between two to seven months prior to our study), none of them had reached an “after” phase of their usage. Some respondents were convinced that they would use it for 10 years, even though the expected lifespan is much shorter than that.

None of the users had any clear idea of what would happen when the stove came to the end of its lifespan. Most of them had kept their Charcoal jiko cookstoves and even their three-stone fires as backups for when they needed several burners, or when they needed support for a bigger pot.

A key concern is what will happen if essential elements of the Philips stove begin to break. According to respondents from our interviews it seems the button or fan tends to break first. That could mean the most highly valued aspect of the stove (the efficiency of fuel usage) disappears, and perceived disadvantages, such as only functioning with small pieces of fuel and needing to be fed constantly might tip the balance toward giving up using it. Some women had also experienced burning logs falling out of the chamber onto the plastic base, causing it to melt in small sections. If that happened enough so that the stove could no longer balance, it might also lead to users giving it up. Repair parts and warranties should be made easily accessible in order to extend the lifespan of the stove as long as possible.

"I don't even think it can break"
(Woman on the question on whether she would repurchase the Philips stove when it wears out.)
4. Case Study 1: Summary
COOKSTOVE USE
CASE STUDY 1 COMPARED TO DESIRED EFFECT

ACTUAL COOKSTOVE USE AMONG OWNERS OF PHILIPS COOKSTOVES

Most owners of the Philips cookstove that were part of this study kept it as one of several cooking appliances. Depending on the situation and dish being cooked, they would use different stoves.

Factors that affected choice of use included whether users wanted to, for example, cook the food for a long time on a low temperature, or to use a large pot, or to heat several pots simultaneously. One stove simply did not meet all of the needs of a user.
FUEL USAGE
CASE STUDY ONE COMPARED TO DESIRED EFFECT

ACTUAL FUEL USAGE AMONG OWNERS OF PHILIPS COOKSTOVES

Just as with the stoves, the type of fuel used would vary. Users who had low cash flow but free and easy access to firewood would use that as primary fuel, while if the firewood was damp or scarce, they would occasionally buy charcoal. Many who could afford charcoal would prefer it, but in rainy seasons it could become very expensive and they would often revert to firewood.

Very few used the biomass-based pellet fuel. Many had not even heard of it. Of those who had heard of it many had not tried it because they didn’t know how to get it or they thought it seemed expensive. The ones who used it appreciated that it would ignite quickly, but most of them did not use it as their main fuel. They would use it to light up their firewood or charcoal (or mix of firewood or charcoal) or as a back-up fuel to keep dry in the house if rains had dampened the firewood. In comparison to cookstoves where it is possible to leave large pieces of fuelwood unattended, pellets were less convenient because you had to feed the fire more constantly.
POSSIBLE NEXT STEPS
TOWARDS THE DESIRED EFFECT

IMPLICATION

If the goal is 100% use of the stove with only pellets, there would still be some way to go. The Philips cookstove obviously does not meet all users' needs, since they still use rocket stoves and three-stone fires as complements. It seems that 100% use of the new stove is not realistic. Instead, one could calculate the impact, for example, on CO2-emissions of owners using the cookstove for their main meal every day or for 70% of their cooking. Another option could be product development aimed at meeting more of the different cooking needs in this area and striving to make other, less efficient, cookstoves unnecessary.

Actual use of fuel was even further away from the goal. Depending on how much the choice of fuel used in the pellet stove impacts on health and the environment, maybe there should be a shift in efforts away from selling more stoves towards emphasising the advantages of the fuel and securing access for interested users.

There is also a small number of users who own an LPG stove and had moved down the energy ladder by replacing use of LPG with use of the Philips stove. Such changes in behaviour should be seen as counter productive and avoided.
SUMMARY - RISKS OF REDUCED EFFECT

BEFORE

RISK OF EFFECT REDUCTION: Not all potential users have the money, religion or gender to be part of V.E.P and might therefore miss out on information.

RISK OF EFFECT REDUCTION: Members that feel they cannot afford the stove. Husband/peer that does not agree with the purchase.

RISK OF EFFECT REDUCTION: Not all members are at all meetings. Not sure the investment in Philips stove is what would actually make the biggest impact in the members life.

RISK OF EFFECT REDUCTION: Not communicating health aspects of different fuels used with the stove. Members signing up with the wrong expectations. Signing up on impulse, without consideration.

RISK OF EFFECT REDUCTION: Not all potential users have the money, religion or gender to be part of V.E.P and might therefore miss out on information.

AWARENESS & ACQUIRING

CONSULTING HUSBAND/PEER

PAYING OFF CURRENT LOAN

GOING TO MEETINGS

PRODUCT DEMONSTRATION

SIGNING UP

WAITING

START-UP PHASE

RISK OF EFFECT REDUCTION: Stove not meeting expectations, unpleasant surprises with the stoves functionality that leads to decreased customer satisfaction.

RISK OF EFFECT REDUCTION: Members changing their mind because of the long wait. Losing potential ambassadors because of a bad customer experience, caused by the long wait.

RISK OF EFFECT REDUCTION: Not all potential users have the money, religion or gender to be part of V.E.P and might therefore miss out on information.

RISK OF EFFECT REDUCTION: Customers creating habits around usage that are not safe or not optimal for reducing negative health impact and environmental impact. The new routines becoming barriers to adoption.

RISK OF EFFECT REDUCTION: Customers changing their mind because of the long wait. Losing potential ambassadors because of a bad customer experience, caused by the long wait.

NEW HABIT

USING IT ALL THE TIME

“MISUSE”

BREAKAGE

USING IT ALL THE TIME

ONLY USING IT SOMETIMES

NOT USING IT

CHANGE OF STOVE

RISK OF EFFECT REDUCTION: Customers not using the ultimata fuel, only using the stove as one of many or not even using it at all. Customers going down the energy ladder, from an LPG cookstove to a pellet cookstove.

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RISK OF EFFECT REDUCTION: User not using the cookstove any more because of malfunctioning button, fan or melted base. Short lifespan.

AFTER

RISK OF EFFECT REDUCTION: Customers not using the ultimata fuel, only using the stove as one of many or not even using it at all. Customers going down the energy ladder, from an LPG cookstove to a pellet cookstove.

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# SUMMARY - SUCCES FACTORS TO REACH DESIRED EFFECT

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**SUMMARY - SUCCES FACTORS TO REACH DESIRED EFFECT**

**BEFORE**
- Going to meetings
- Consulting husband/peer
- Product demonstration
- Signing up waiting

**AWARENESS & ACQUIRING**
- Paying off current loan
- Getting fuel
- Charging
- Paying off loan

**START-UP PHASE**
- Getting it
- Finding my way of using it
- Using it
- “Misuse”
- Breakage
- Not using it

**NEW HABIT ESTABLISHED**
- Using it all the time
- Only using it sometimes

**AFTER**
- Change of stove

**CASE STUDY 1**

- A local partner with an existing trust-based relationship with the target group acting as the distributor
- Users making well-informed decisions based on accurate expectations of product and services
- Using the cookstove in the “correct” way being easy and rewarding
- Expectations being met, the cookstove improving the every day life of various categories of users with different needs
- Users having a realistic understanding of the product lifespan and awareness of available aftersales services
The key insights are a summary of the most important findings drawn from case study 1, in terms of essential factors and parameters affecting behavioural change. They are indicative and in the second case study they will be revised and evaluated from a universal perspective.
KEY INSIGHTS OVERVIEW

1. PEOPLE ARE MORE LIKELY TO TRUST QUALITY ASSURANCE FROM A LOCAL PARTNER THAN FROM A THIRD PARTY

2. A COOKSTOVE NEEDS TO MEET THE END USERS’ DEFINITION OF “IMPROVED” IN ORDER TO REACH ADOPTION

3. A HOLISTIC PERSPECTIVE ON PRODUCTS AND USERS ENABLES A GREATER EFFECT

4. “GETTING STARTED” PHASE IS MOST CRITICAL WHEN SHAPING NEW BEHAVIOURS AND ACHIEVING ADOPTION

5. A POSITIVE EXPERIENCE THROUGH THE WHOLE CUSTOMER JOURNEY CREATES IMPORTANT AMBASSADORS

6. A JOINT DEFINITION OF DESIRED EFFECTS IS REQUIRED TO EVALUATE PROGRESS AND ACTIVITIES
1. PEOPLE ARE MORE LIKELY TO TRUST QUALITY ASSURANCE FROM A LOCAL PARTNER THAN FROM A THIRD PARTY

"I’m sure, if VEP suggests a product, it’s good for me"

“VEP only recommends high quality products”

Customers on the attitude towards local micro finance organisation introducing new products
1. PEOPLE ARE MORE LIKELY TO TRUST QUALITY ASSURANCE FROM A LOCAL PARTNER THAN FROM A THIRD PARTY

Finding:

A local partner with an existing, trust-based relationship with the potential customers provides crucial quality assurance for households and individuals to feel safe making big investments. This especially applies in contexts where many have experiences of being deceived when making purchases, e.g. buying half full gas tubes or spirits that have been mixed with water.

The ideal quality assurance partner would be one with whom the customers had previously “done business”, and that they knew would be around for quite some time, to allow deep trust between them to be built on product quality, advice on investments, and strategic choices in their private economy as well as after sales-support throughout the product lifecycle.

Micro-finance seems to be a success factor in enabling investments and promoting long-term financial perspectives. The effect of peers is crucial in the overall functioning of women’s savings and loans groups.

Implications:

Introducing new technologies could be done in collaboration with, or even through, for instance, religious networks, women’s groups, or a micro-finance partner.

However, these types of partners risk excluding potential customers that don’t fit in to the target group of the organization. To avoid this, the current distribution model - whereby products are introduced to smaller groups of users - could be complemented by other models, e.g. direct retail by local businesses selling products through regular channels (e.g. local supermarkets)

Of course, trust also must be nurtured. Inadequate products or services could permanently damage trust for the local partner.
2. A COOKSTOVE NEEDS TO MEET THE END USERS’ DEFINITION OF “IMPROVED” IN ORDER TO REACH ADOPTION

"On my other stove I could cook two meals at the same time"

A user of what she thought was the best improvement with the Philips cookstove

"If it saves us money, it doesn’t matter that it’s a hassle to use it"

A user of what she thought was the best improvement with the Philips cookstove

"Now I can even do the cooking laying down"

A user of what she thought was the best improvement with the Philips cookstove

"I love it because it’s different, modern"

Two different users on what they thought of the modernity and technology of the Philips cookstove

"I wish there were no buttons..."

Two different users on what they thought of the modernity and technology of the Philips cookstove
2. A COOKSTOVE NEEDS TO MEET THE END USERS’ DEFINITION OF “IMPROVED” IN ORDER TO REACH ADOPTION

Finding:

New technology is often promoted because it will reduce household air pollution or carbon emissions. However, these are clearly not value propositions for any of the groups that we identified. The new product or service has to deliver value from the end users’ perspective in order to reach broad adoption. Whether or not a cookstove is considered “improved” will depend on users’ different needs as well as their prior experiences with other stoves and fuels. For instance, if the previous cooking solution allowed the cook to heat two pans simultaneously, stir the pan forcefully, save leftover fuel for another day, slow-cook and leave food unattended, assume a comfortable cooking position, some or all of these features would need to be provided by the new cooking stove, as well as providing additional tangible benefits compared with the previous situation.

When the user considers upgrading to a more advanced technology, such as a more efficient stove, they evaluate many different variables, but measurable values, such as money or time saved, are only some of the aspects considered. “Soft” values such as a more modern image or increased social status also affects the decision. Users will consider the sum of all perceived advantages and weigh it against the sum of all perceived downsides. Furthermore, a comparative advantage can vary over time depending on the user’s situation. If one of the main needs of the user is fully met, he or she will be much more likely to overlook other sub-optimal aspects of the technology.

Implications:

In order to achieve the health and environmental objectives, improved cookstoves need to be both efficient and relevant in creating value for the end user. The value added for the end user is related to local preconditions and personal preferences and should be investigated on local levels. It should then be taken into consideration in the design phase of new stoves, the evaluation of existing stoves, and the distribution, marketing and sales dialogue with customers. (see next insight on holistic perspective).
3. A HOLISTIC PERSPECTIVE ON PRODUCTS AND USERS ENABLES A GREATER EFFECT

"What would really change my life? Electricity"
User on the impact the cookstove had on her everyday life

"Some day I would want to have a gas cookstove"
A VEP member when asked to make a wish for future VEP-products (They did actually already provide gas cookstoves)

"We didn´ t know that soon there will be a version that comes with a solar panel"
VEP member who had signed up for a Philips cookstove but wished they would have waited for the new model

"I discovered by accident that I could charge it on my solar-lamp from VEP"
User on how her products purchased from VEP created synergies

“ I would be interested in doing a training course on animal husbandry – I would pay for such a course”
Customer on what VEP could offer besides the products
Finding:

Sometimes the fundamental objectives of distributing a new technology are lost in favour of promoting a specific product. For instance in case study 1, some respondents had transitioned from using LPG stoves, considered to be the best option from a health perspective, to using the Philips stove with a mix of charcoal, firewood and pellets – a clear step down the so-called “energy ladder”. VEP’s strong marketing methods, combined with the peer pressure – required for the women’s saving and loans group to function – means that members frequently take loans to purchase products that are demonstrated during group meetings. The result can be members making a series of small investments in good products, but products that represent very small, isolated steps towards the desired effect. The money spent could have been saved to make a larger investment that would probably have made a larger positive effect on the end users life.

Implications:

A systems perspective on the products selected for distribution, that enables synergies between products, could help the users get more value out of their investments and “upgrade” their household gradually. For instance, efforts could be made to ensure that where possible, appliances are compatible with one another, for example, to charge the stove using the solar panel. At the same time, users should not be locked in to use of a certain brand or distributor.

Enable well informed choices

Present a product range to the customers to enable easy comparisons of products within the same category as well as in different categories. For stoves, the factors that members wanted to compare included cost, lifespan, fuel compatibility, fuel consumption, ease of cleaning, and main pro’s and con’s of usage.

Encourage long-term planning

Being able to compare prices for products in different categories would enable customers to weigh up and prioritize products before purchase, and might motivate them to save up for bigger investments that might have a greater impact on improving their lives rather than many small ones. This could be supported by an initial needs analysis, resulting in suggestions of investments that take both overall development objectives and user needs into consideration.

Co-create product range with local communities

Local communities could be invited to suggest new products, and selection of products to distribute should be based in insights about local conditions rather than new technology and products being marketed without a clear long term strategy. Cookstoves could be evaluated based on, e.g., the traditional dishes cooked and what kind of time, temperature, size of pan, stirring, or number of burners these dishes require. Products could also be combined with education and training based on local needs and requests for information.
4. THE “GETTING STARTED” PHASE IS MOST CRITICAL WHEN SHAPING NEW BEHAVIOURS AND ACHIEVING ADOPTION

”I keep it as a back-up, if I would run out of gas”
Customer who has a gas stove on the question why she bought the Philips cookstove

”I burned the food in the beginning, not knowing how much fuel to use”
Customer who had to do trial and error in order to learn how the Philips cookstove works

”It’s great that it’s so safe that I can carry it while cooking or let the kids cook”
Woman who had not read the safety- and usage instructions

”I didn’t know of pellets before, but now that we got to try it I think we will get more”
Customer who is willing to change her habits after hearing of pellets
4. “GETTING STARTED” PHASE IS MOST CRITICAL WHEN SHAPING NEW BEHAVIOURS AND ACHIEVING ADOPTION

Finding:

Just purchasing a new technology does not mean that the household will make use of it in the way that was intended by the producer or distributor. This could mean that the implementation of the new technology does not come as far as it could in reaching the overall objectives of the programme. Implementers often concentrate time and resources on marketing activities when introducing a new product/technology, and consider their part to be finished at the point of purchase, but the “start-up phase” is just as critical in terms of ensuring correct and consistent use of the product.

With Philips cookstoves, the ultimate objective would be for users to cook all their meals on the stove using only pellets. The pellets are more efficient than charcoal or firewood, but since most users have no prior experience of using pellets they are perceived as quite expensive. Households therefore have no incentive to switch to or even try the pellets. Some would use the stoves with only biomass-pellets whilst the vast majority would use it with firewood, charcoal, or a mix of all three.

There was also unsafe use, including moving the stove while cooking, using big logs that stick out from the stove, allowing children to use it. A severe accident could result in giving the cookstove a bad reputation and put an end to the programme.

Implications:

The start-up phase is a window of opportunity to encourage a certain (“correct”) way of using the stove among users, before new habits become permanent. In order to engage users to take onboard recommendations on usage and maintenance, the distributor must deliver end-user-value.

Examples drawn from the case study of how this could be achieved include: advice on use and maintenance in order to make it last longer or make fuel last longer, technical support, Q&A sessions, a follow-up text or phone call to check if the customer is happy with their product, reminders of the free warranty, a punch ticket for pellets, and a safety-quiz with stove-related prizes.

When it comes to nudging people towards a new behaviour it is important to lower key thresholds. For example, when introducing new type of fuel, a free trial-period could give users the opportunity to evaluate it based on first-hand experience. Infographics comparing how much time and money a certain dish would take to cook with different fuels could also be a way to spread awareness and provide incentives.
5. A POSITIVE EXPERIENCE THROUGH THE WHOLE CUSTOMER JOURNEY CREATE IMPORTANT AMBASSADORS

"I would be proud to teach others how to use it"

**VEP-member who had not yet received her stove, but were sure it would improve her life, wanting to share it with others**

"I didn’t realise you had to keep feeding fuel into the stove, no one told me"

**Customer who would have liked to try it before buying it**

"I have never seen it. And I don’t know anyone who has it..."

**VEP member who had signed up for the stove after an speech based introduction**

"I invite everyone over to show my new stove"

**Proud user, working as an informal ambassador**
5. A POSITIVE EXPERIENCE THROUGH THE WHOLE CUSTOMER JOURNEY CREATES IMPORTANT AMBASSADORS

Findings:

Exposing people to a bad customer experience and unmet user expectations will lead to discontinued use of the cookstove, but also potentially convert people into “detractors”, that dissuade others from adopting the new cookstove. On the other hand, people who are actually genuinely pleased with the experience can quickly become ambassadors, putting time and energy in to spreading the word and recommending the experience to others, driving broader adoption.

Expectations are often based on a combination of correct information, hopes, assumptions and rumours and include both the actual product and entire lifecycle with surrounding services. Examples of when expectations are not met could be delays in delivery, inconsistencies in the service (regional, individual or over time), customers realising the fuel was hard to get, the technology was not optimal for your situation or that it did not function the way you thought it would. In the Philips stove-case there were also examples of customers not being aware of benefits such as a one year free warranty included in the purchase.

In the case study, potential customers wanted to hear real-life stories on what the stove was like to use and own in order to get accurate expectations and information on which to base their own purchase decision. The distributor had a hard time keeping up with the demand for demonstrations, fuel supply and after-support. Their outreach was also quite limited to members of the womens’ group. At the same time, happy customers had taken their own initiative to act as proud ambassadors in spreading the word and demonstrating how to use the stove. In many cases there could be win-win potential in involving pleased customers in marketing and distribution in a more structured (and salaried) way.

Implications:

In order to prevent disappointment among customers, they should be as well informed as possible before purchase. Supporting structures such as product distribution and fuel distribution should be well established before allowing users to sign up for the technology. Expectations about the product could be managed through physical demonstrations, the opportunity to try out the technology first-hand and through first-hand stories from other users, highlighting the pros and possible cons with using the technology throughout the whole product lifecycle. This could include information on maintenance, fuel compatibility, fuel availability, expected lifespan, maintenance and compatibility with other products/technologies such as solar panels, but also in delivery and after-sales support.

Happy customers could also become official ambassadors, receive free training and act both in marketing and sales through Tupperware-party-like events, earning a percentage of money earned, but also in support, helping others to get started and with fuel distribution.
6. A JOINT DEFINITION OF DESIRED EFFECTS IS REQUIRED TO EVALUATE PROGRESS AND ACTIVITIES

"There is a huge different between just counting the amounts of loans given, and looking at actual usage over time"
Stakeholder on how to measure and evaluate effect

"For us, the peoples health is most important, while they care most about environment"
A stakeholder representative on working together with other stakeholders
6. A JOINT DEFINITION OF DESIRED EFFECTS IS NEEDED TO EVALUATE PROGRESS AND ACTIVITIES

Finding:

Without an agreed definition of the core objectives of the cookstove distribution programme between the key actors involved, it is difficult to evaluate progress.

The improved health of the users and the environmental benefits are two different goals that determines what is a “good enough” result. For instance the Philips cookstove would achieve the highest effect (the largest reduction in household air pollution) if it was used for all meals of the day, exclusively with the pellet fuel. Success was measured by how many individuals would buy the stove but, as earlier mentioned, purchase did not guarantee (“correct”) use. Most respondents would use it as one of several stoves, and with few or no pellets, mixed with charcoal or firewood. Many had never heard of or received pellets. Furthermore, some users had gone from using cookstoves that run on gas, which is considered to be the cleanest fuel in terms of health, to using the Philips cookstove.

Implications:

A clarification of the objectives, goal and purpose of implementation of a new technology needs to be defined, what improvement is the implementer trying to achieve and how do we measure it? If we apply a results-based perspective, when is there an actual result? Who are the target group for the new technology, in order to actually achieve an improvement? Based on a clear vision, goal and desired effect, continuous investigations could be conducted to evaluate progress and suggest relevant actions to reach the desired effect.
6. A JOINT DEFINITION OF DESIRED EFFECTS IS NEEDED TO EVALUATE PROGRESS AND ACTIVITIES

Example of definition of desired effect and behavioural change

Example of mapping of actual behavioural change in Case Study 1, where only scenario B is in line with the desired effect
SUMMARY

KEY INSIGHTS RELATED TO THE PHASES OF THE CUSTOMER JOURNEY FROM CASE STUDY 1

KEY INSIGHT:
1. PEOPLE ARE MORE LIKELY TO TRUST QUALITY ASSURANCE FROM A LOCAL PARTNER THAN A THIRD PARTY

KEY INSIGHT:
2. A COOKSTOVE NEEDS TO MEET THE END USERS’ DEFINITION OF “IMPROVED” IN ORDER TO REACH ADOPTION

KEY INSIGHT:
3. A HOLISTIC PERSPECTIVE ON PRODUCTS AND USERS ENABLES A GREATER LONG TERM EFFECT

KEY INSIGHT:
4. “GETTING STARTED” PHASE IS MOST CRITICAL WHEN SHAPING NEW BEHAVIOURS AND ACHIEVING ADOPTION

KEY INSIGHT:
5. A POSITIVE EXPERIENCE THROUGH THE ENTIRE CUSTOMER JOURNEY CREATES IMPORTANT AMBASSADORS

KEY INSIGHT:
6. A JOINT DEFINITION OF DESIRED EFFECTS OF THE OVERALL COOKSTOVE PROGRAMME IS NEEDED TO EVALUATE PROGRESS AND ACTIVITIES
6. Next step
In the next part of the project there will be a second case study, which will entail a second loop of iterations, in an other context and with a different cookstove and different local stakeholders. In line with the methodology, we will use the findings from the first loop and refine them in the second loop. The Indicative Key Insights will work as foundation for trigger material. They will be used as assumptions upon which we will formulate concepts to visualize and bring to interactions with new end users at a different location. This will allow us to identify which of the findings are generalizable and which are specific to the conditions of case study one. Some aspects will probably be deleted, some will be added and most of them will be altered, refined and more detailed.
## Contacts:

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ANNEX A

Original Interview Guide
ORIGINAL INTERVIEW GUIDE

Interview guide for open ended interviews with households

BACKGROUND

Tell me about yourself? Age? Your family? Your home? Your neighbourhood?

Can you tell us about an average day in your life (from when you get up in the morning)

Who cooks? When? What? What is your most common dish to cook? What is your favourite thing to cook? Where do you cook?

Can you show me? (how you prepare a meal)

Do you like cooking? Why/why not? What is your favourite dish? Do you ever cook it? Why/why not?

Whats the best part/most annoying part about preparing dinner?

What happens after dinner?

CURRENT COOKING OPTIONS

What stoves do you have? Show me. Why do you use these stoves? When do you use them? How often? For What? Why? Which one do you like the most and why?

Observation: What type and manufacturer (Three stone -, Biogas -, Charcoal -, Pellets, Gas stoves. Manufacturer: EcoZoom, Burn Design?)

Why did you decide to purchase those?

What do you do/would you do if any of them breaks?

STOVE ACQUISITION

USER PREFERENCE

Tell me the last time you got a new stove. Why did you get a new stove?

What did you take into consideration when getting the new stove?

What factors are important for you when considering a new stove? (Convenience, Cost, Fuel distrubtion/availability…)

Where and how did you buy it?

Did you choose from several different ones? Which ones? How were you aware of the range?

Why did you choose that one in the end?

Were you happy with your decision? Do you have regrets? If so, what?

If you could change anything about the current cooking stoves, what would you change?

What is the best part/biggest hassle when getting a new household equipment?

Do people usually have a functioning stove in another model at home when buying this kind of stove? What do they do with them when buying a new one?

What influenced your decision (describe the entire process)? IF THEY HAVE NEVER PURCHASED A STOVE, ASK ABOUT ANOTHER APPLIANCE/PRODUCT
Do you think you will keep using it? Why/why not/for how long? Who made the final decision to purchase?

FINANCING
Could you afford the full cost of the stove? If not, how did you afford it? (MFI, informal lending, etc.)

If MFI played a role – how did they interact with the HH? Promotion, product demonstration, etc.? What did you think of that process? Where there any uncertainties/could it be improved in any way? Did you ever get micro financing for something(else)? What/why/how was it?

How is a meeting usually carried out?

What are your best arguments to convince people?

What do you personally think is the best part with the stove/the loan concept?

What do you think is the biggest area for improvement with the stove/loan-concept?

Do you have one yourself? Why/why not?

What are the most common questions/worries/oppositions from people?

Where do people usually go “stove-shopping”? How does the repayment work?

FUEL
Describe the process of getting the fuel (Collecting wood, Distribution of charcoal/pellets/gas)

Have you encountered any problems about the fuel distribution/collecting the fuel?

What are the biggest areas for improvement concerning the fuel distribution?

What are the most common questions/worries/oppositions from people concerning getting the fuel/ the distribution?

Describe how it could be as simple and practical as possible according to you.

What influence does the type of fuel has on what type of stove you choose? (Wood, Charcoal, Pellets, Gas)

SUPPORT
What will you do if it breaks? (Is there some kind of support/service? Is there some kind of insurance?)

Do you think people are happy with their stoves for a long time?

PEER EFFECTS
What kind of stove/es does other families have? Your neighbour?

Who, outside of your household, would you rely on for advice when it comes to making a financial decision? Why do you rely on that / those person(s).

PERCEPTIONS OF IMPROVED STOVES
(for those not familiar with these technologies)

If you would choose to get a new stove or something else for the household, what would it be? Why? (Or: What would make you consider getting a new stove? How would you proceed?)

If you would get a new stove, what would it be? Why? What would you take into consideration (maybe price, fuel, efficiency, style, type, health benefits etc.)? Would you get advice? From who? Why? What?

What would the “dream” stove be like? What features are most important?

Have you seen an advanced cookstove? What did it look like? Which features were you most attracted to?
REVISED INTERVIEW GUIDE

FOR HOUSEHOLDS WITH THE STOVE:

(intro: What do you usually cook? What’s the best/worst part of cooking?)

BEFORE
Please describe how you got the stove?
How did you first hear of it? from whom?
How do you prefer getting to know about new products?
What made you make the decision to get it?
Which were your considerations?
What did you think of your earlier stove?
Is there anything that could be improved in the process of getting it?
Information/demonstration/installation/distribution/transpor-tation etc?

DURING
How are you currently using it? (Cooking/cleaning/getting fuel/fixing it if it’s broken etc)
How much, for what and why/why not?
What other devices are you using?
What is the best/worst thing about the stove?
How could the usage be improved?

AFTER
How will you use it in the future?
What would make you stop using it?
What would make you start using it more?
What would make you get a new stove?
Would you get another one of these? Why/why not?
REVISED INTERVIEW GUIDE

FOR HOUSEHOLDS WITH THE STOVE:

BEFORE
Awareness
Expectations
Actors
Decision factors

DURING
Expectations met?
Cooking
Charging
Fuel
Reparation

AFTER
Drivers for:
increase usage?
Decreased usage?
Better customer experience?
Next stove?
REVISED INTERVIEW GUIDE

FOR HOUSEHOLDS WITHOUT THE STOVE:

(intro: What do you usually cook? What’s the best/worst part of cooking?)

BEFORE
Please describe how you got the stove(s) you have now?
Did you choose from several ones? How were you aware of the alternatives?
What made you make the decision to get it?
Which were your considerations?
What did you think of your earlier stove?
Is there anything that could be improved in the process of getting it?
Information/demonstration/installation/distribution/transportation etc?

DURING
How are you currently using it? (Cooking/cleaning/getting fuel/fixing it if it’s broken etc)

AFTER
What would make you get a new stove?
How would you go about getting a new one?
How do you prefer getting to know about new products?
Would you consider getting an advanced cookstove?
Why/why not?
Did you ever get a microfinance loan? What, why/why not?
Could that be an alternative for you in the future? Why/why not?

How much, for what and why/why not?
What other devices are you using?
What is the best/worst thing about the stove?
How could the usage be improved?
## REVISED INTERVIEW GUIDE

### FOR HOUSEHOLDS WITHOUT THE STOVE:

**BEFORE**
- Why a new one?
- Decision factors?
- Actors?

**DURING**
- Expectations met?
- Cooking
- Cleaning
- Charging
- Fuel
- Reparation
- Learning proportions pellets/water

**AFTER**
- Why a new one
- How get a new one
- Advanced stove
- Micro finance

### Intro:
- Where do you normally cook. Can you show us?
- Tell us about a day in your life. Could you take us through the steps?

### What if:
- VEP-representative was delivering pellets?
- You could get an insurance that would guarantee a service technician?
ANNEX C

Trigger material
TRIGGER MATERIAL
ANNEX D

Trigger material
TRIGGER MATERIAL
ANNEX E

Ecosystem Map
ECO SYSTEM MAP

ACTORS:

FAMILY/FRIENDS
- Visit friends who use the stove

WOMANS GROUP
- Explain in understandable language
- Pragmatic approach, communicate with customers
- Package pellets into smaller quantities
- Feedback sessions in group

MICRO FINANCE/FACILITATOR FOR WOMENS GROUP
- Suggest product overview of incoming products
- SMS-based registration of warranty
- Clear use manual in local language
- Keep YEP/distributors updated and prior warnings

STOVE/FUEL-PRODUCER
- Deliver on time
- Build capacity of distributors on customer services

DEVELOPMENT PARTNERS
- Provide reports on fuel testing
- Make women entrepreneurs and self-pollutes

POLICY MAKERS/ POLITICS
- Funding on LMES trainings
- After sales services (technician)

AFTER
- Joint forums to share experiences
- Product champions
- Build capacity of distributors on customer service
- Quality service management systems