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# Understanding the end users' needs



Funded by:



**IKEA Foundation**



# Agenda

- Impact measurement and customer insight
- Understanding the end users – an example from Pakistan
- How to understand the end user?
- Q&A
- Webinar feedback survey



# Our speakers



## ▶ Pranav Sridhar

- Senior Associate at 60 Decibels, helping impact funds, non-profits and social businesses measure and manage their impact.
- Co-founder of OneDay Health, a UN and Queen’s Commonwealth recognized network of primary health centres in northern Uganda.
- Master of Management Studies from The Fuqua School of Business and a Bachelors from Shiv Nadar University.



## ▶ Muhammad Shehryar

- Founder and Managing Director of Harness Energy, a Pakistan based company working on solar products for low-income customers.
- Over 9 years of work experience in the rural economy, focused primarily in the irrigation and energy sectors.
- Studied Economics at Duke University on the Fulbright scholarship



## ▶ Katherine Owens

- Head of M-KOPA Labs, the dedicated R&D arm of the market-leading connected asset financing company.
- Previously worked at the Environmental Defense Fund where she shaped public policy to advance the emerging clean energy economy and adoption of frontier technologies.
- B.A. in Business Administration from Rhodes College and her M.B.A. from London Business School.

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# **Impact measurement and customer insight**

**Pranav Sridhar – 60 Decibels**



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60\_\_decibels

# *60 Decibels: Impact measurement and customer insight*

Efficiency for Access

October, 2020

Pranav Sridhar, Senior Associate

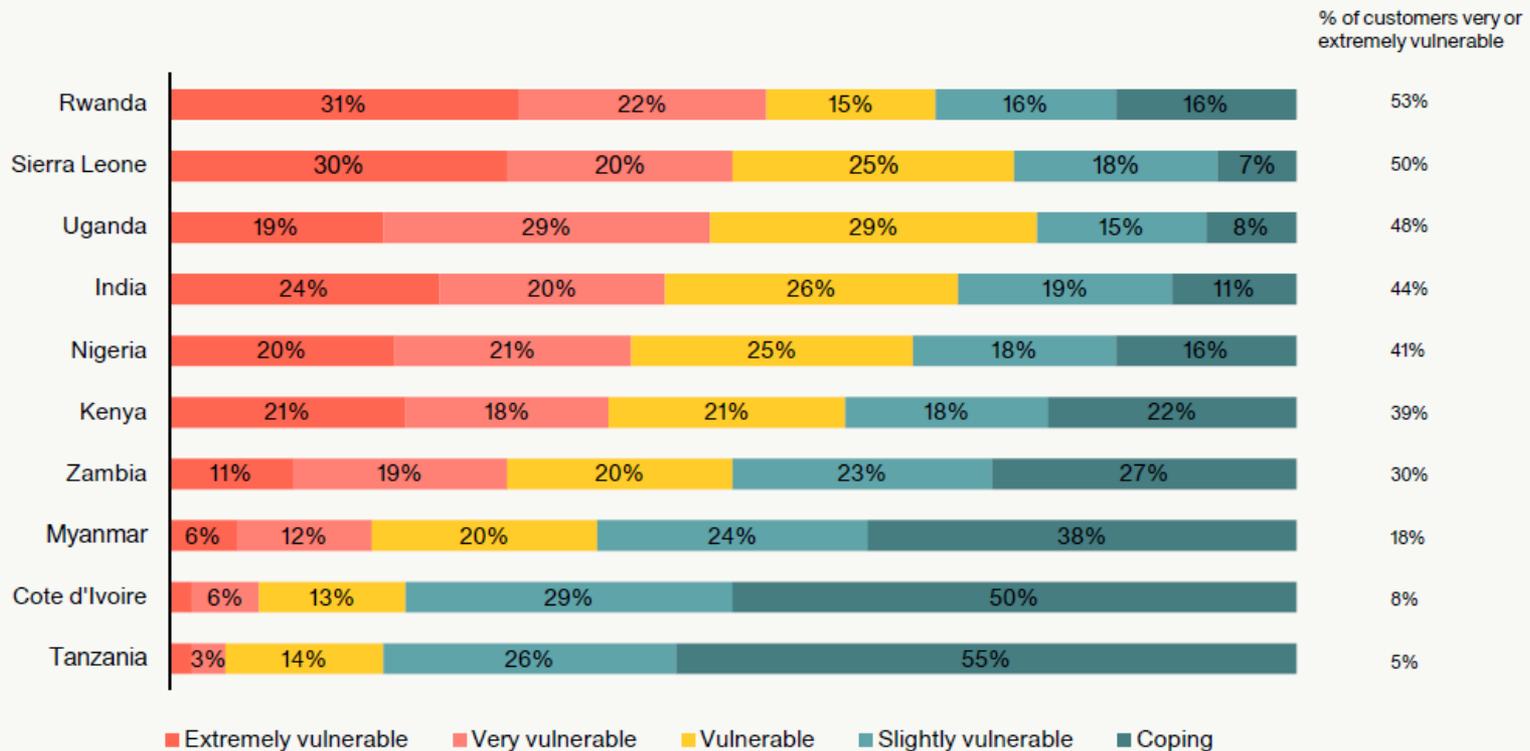


Photo: Kat Harrison

# The Impact of COVID19

Explore the COVID dashboard: <http://bit.ly/60dB-Covid>

And read more about the index: <http://bit.ly/COVID-listening>

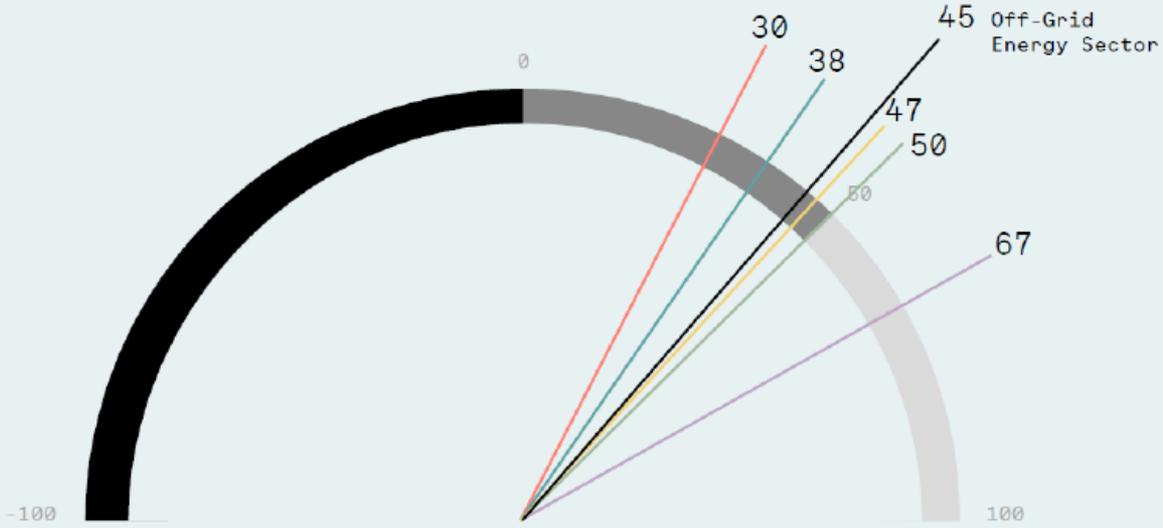


# Customer Satisfaction

Key:

- Solar Lanterns
- Solar Home Systems
- Mini-Grids
- Appliances
- Clean Cooking

Net Promoter Score



“It’s a very  
reliable  
system that  
I believe



everyone  
needs.”

## 60 Decibels

We work with the world's leading impact investors, companies, foundations, corporations, NGOs, and public sector organizations to improve impact performance.

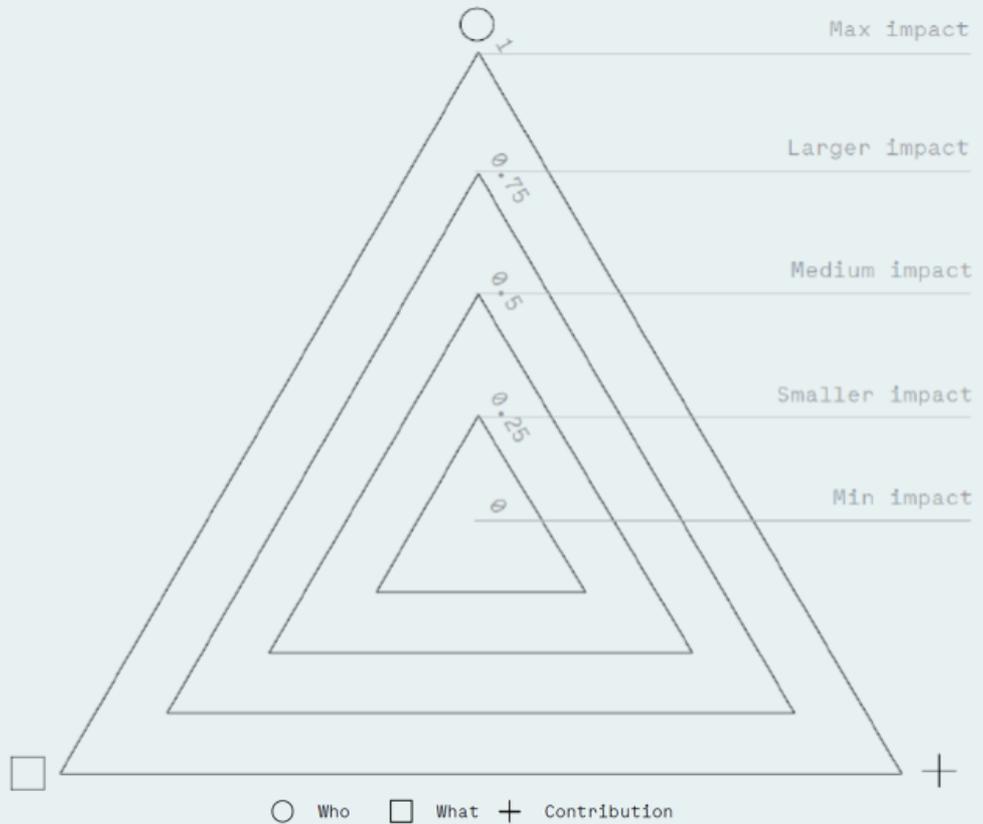
- Quick turnaround time, to fit around your decision making
- 700+ trained Lean Data enumerators in 47+ countries speaking 115+ languages.
- Benchmark your impact performance
- Benefit from our expert analysis
- Communicate your impact

## Key Takeaways

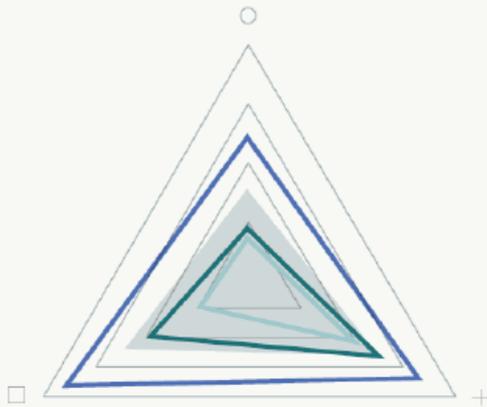
“When there is light  
my house is filled  
with joy and  
laughter.”  
- Sierra Leone

- Energy access is making a positive difference in families' lives.
- First levels of modern energy access are creating the biggest impact.
- The sector is leaving low-income families behind.
- Usage challenges are reducing impact and business success.
- Over-indebtedness is a small but important problem.

# 60dB Impact Index



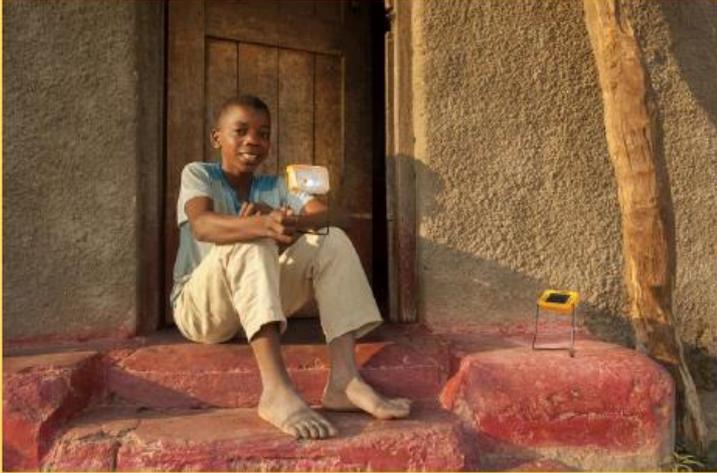
# Appliances



- Best Performing Company
- Poorest Performing Company
- Appliance Average
- ▲ Energy Sector Average

○ Who   □ What   + Contribution

- Solar TVs are reducing stress levels for customers.
- Solar water pumps are increasing farmer incomes through improved productivity.
- Solar powered refrigerators are being used to chill many types of products but also increasing customers' indebtedness.
- Clean cooking companies are the most effective at reaching women.



Why off-grid energy matters report:  
[http://bit.ly/60dB\\_energy](http://bit.ly/60dB_energy)

COVID insights dashboard:  
<http://bit.ly/60dB-Covid>

NextBillion article:  
<http://bit.ly/COVID-listening>

Pranav Sridhar  
Senior Associate  
60 Decibels  
[pranav@60decibels.com](mailto:pranav@60decibels.com)



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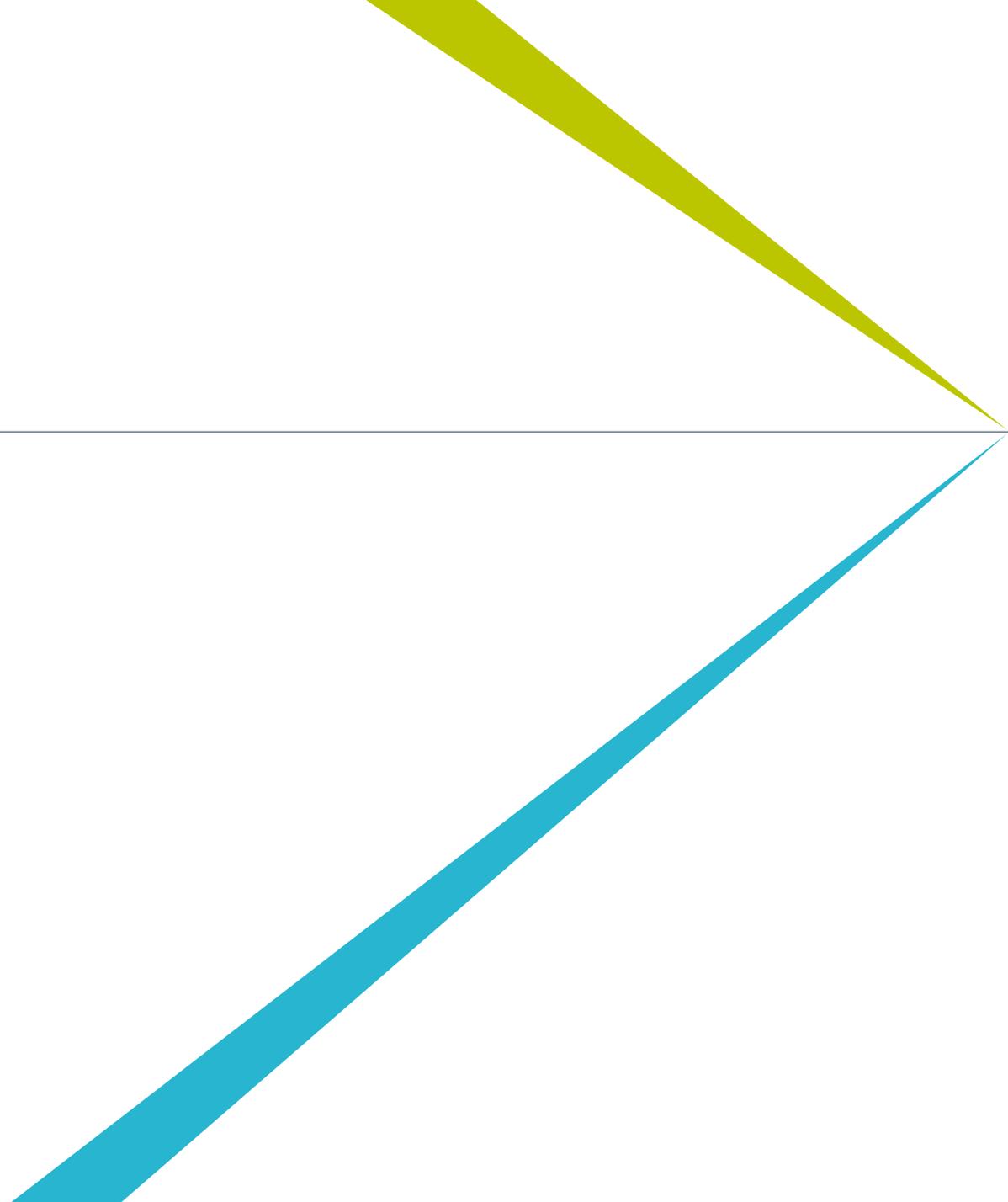
**Thank you**



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# **Understanding the end users – an example from Pakistan**

**Muhammad Shehryar – Harness Energy**



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# Understanding end users' needs

Muhammad Shehryar

Founder and Managing Director, Harness Energy

# Product Design

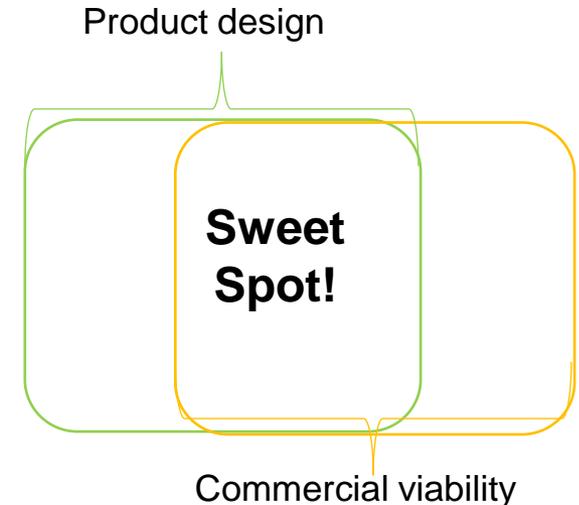
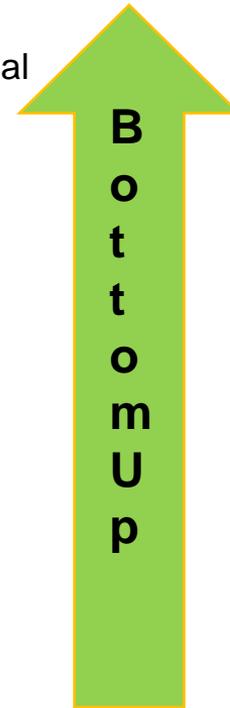
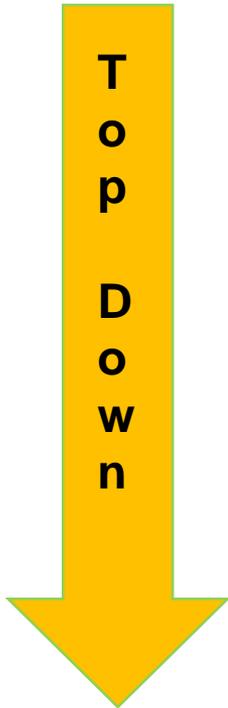
## The Challenges!

Product design + innovation and commercial viability usually develop independently. Why?

Why are you designing/developing this product?

Who is the end customer? What do they want?

Understanding the value chain



# Successful products

- Existing products that fit customer needs
- New products designed for specific needs
- Affordable products because of Economies of scale

## Design challenges can focus on needs like:

- Education
- Energy
- Healthcare
- Connectivity
- Financial inclusion



\$25



\$10



\$300



\$?

# Experience from the field



## Solar fans

Efficiency

Air flow

Sturdiness



## Refrigerators

Size

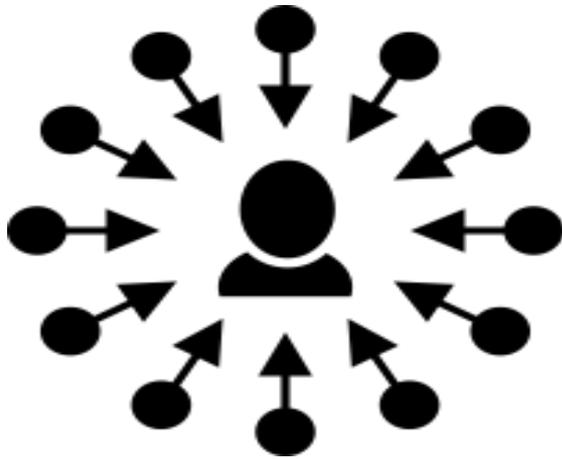
Compressor technology

Economies of scale

Affordability



# Effective user-centered design



Idea, design,  
prototype,  
pilot

## End user...

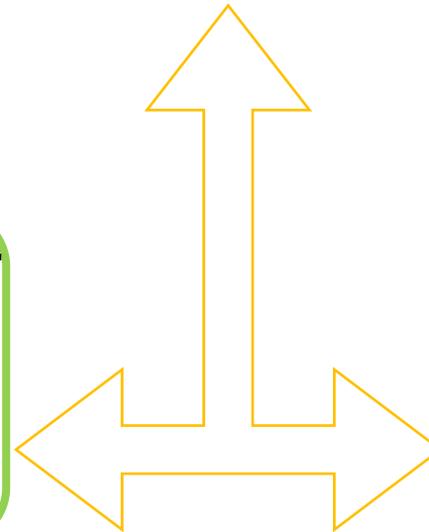
And their needs, current options, incomes level, behavior patterns...

## Product/technology...

What is it, features/specs, why did you make it, incremental vs radical change...

## Commercial viability...

R&D costs, raw materials used, capex and opex, scalability, financing options...



# Vision



To play a leading role in helping Pakistan achieve SDG 7

**Muhammad Shehryar**

Founder and Managing Director  
[shehryar@harnessenergy.pk](mailto:shehryar@harnessenergy.pk)





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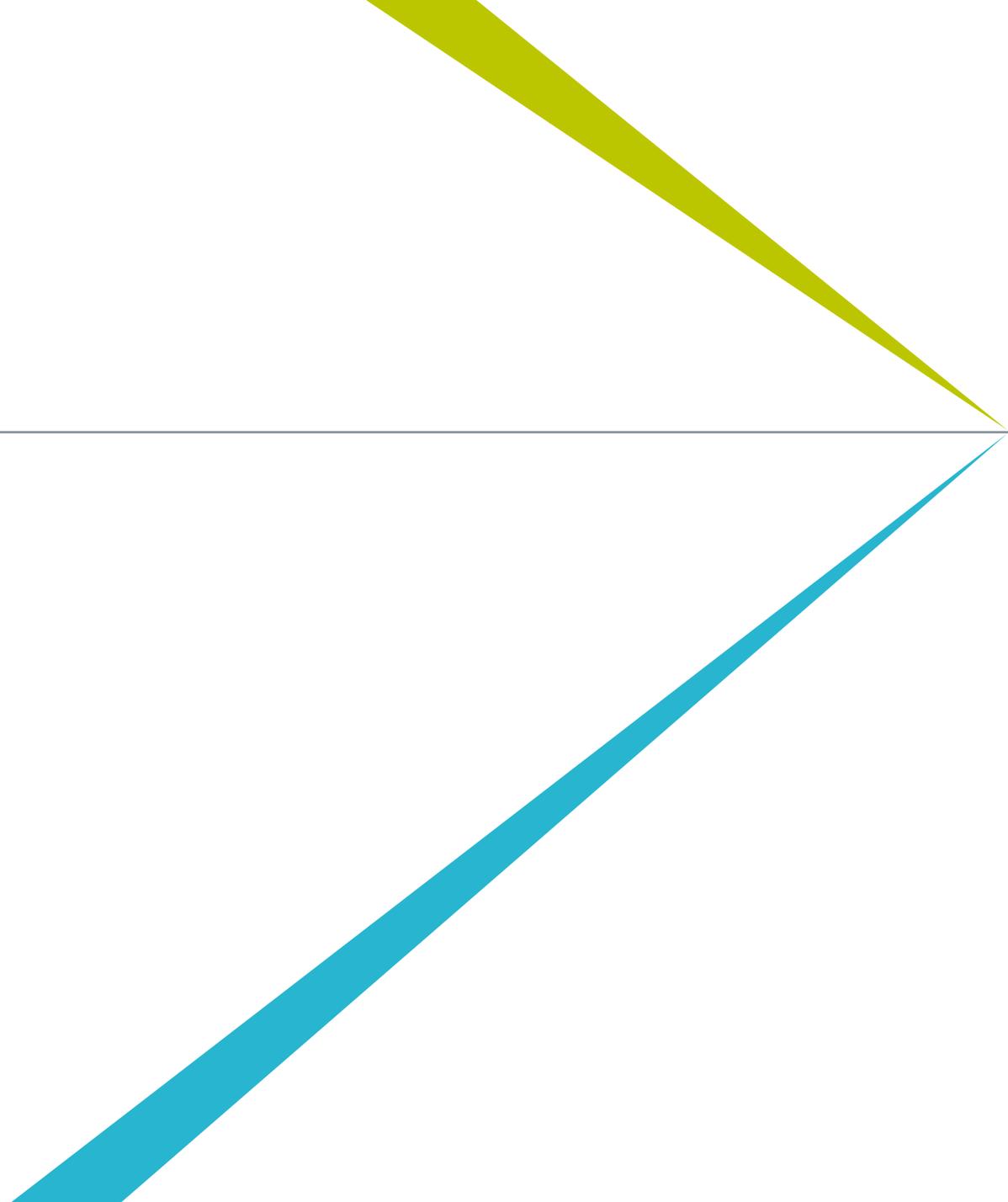
**Thank you**



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# How to understand the end user?

Katherine Owens – M-KOPA Labs



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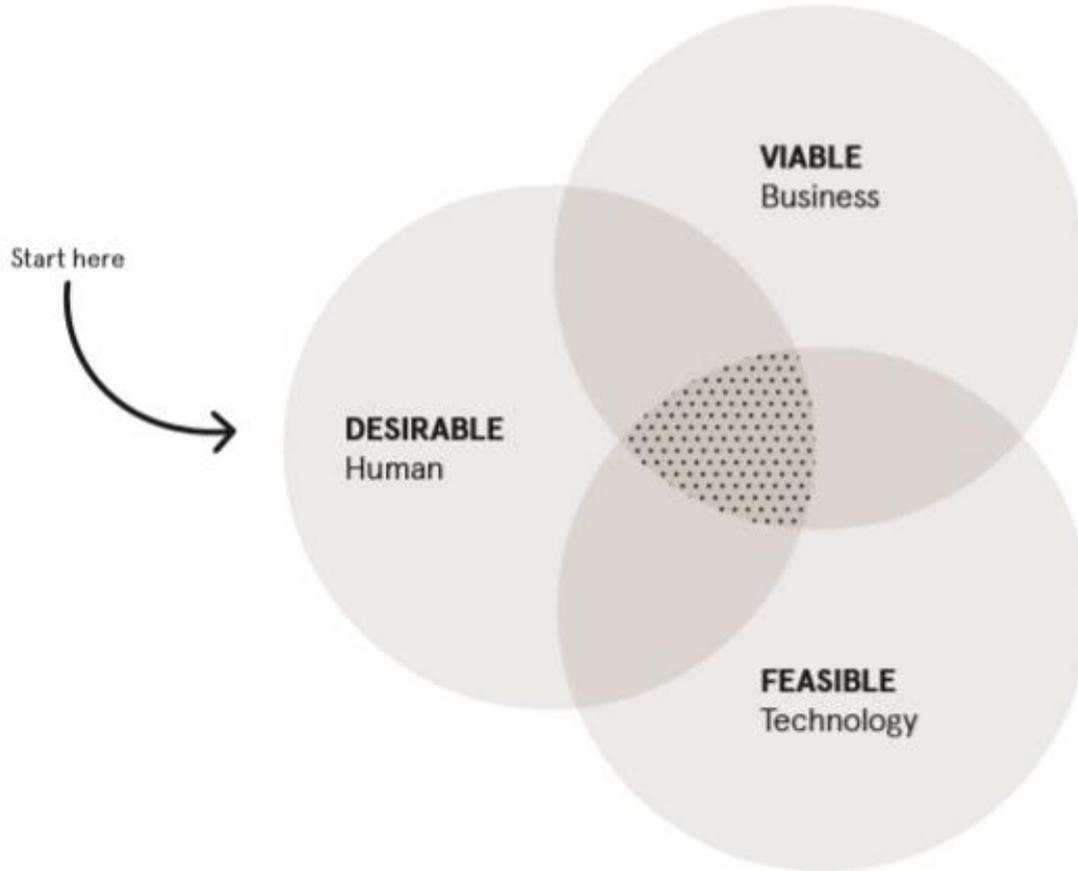


# Hello, from M-KOPA Labs

---

We like to design the right thing, and design it right  
so customers always love M-KOPA

# WHAT IS R&D ANYWAY?



## Listen, Test, Iterate

*By iterating, we validate our ideas along the way because we hear from the people we're actually designing for.*

- Gaby Brink, Founder  
Tomorrow Partners

# HOW TO UNDERSTAND THE END USER??

Labs' approach to R&D and design thinking entails:

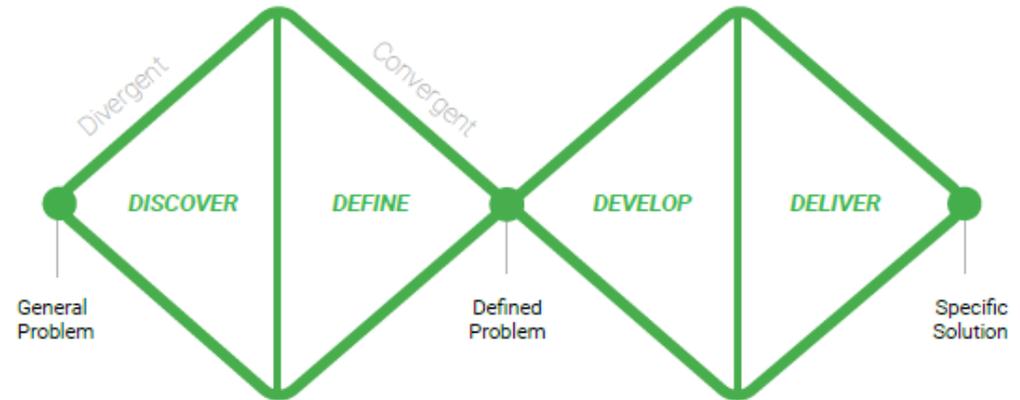
Identifying customer pain points and conceptualising solutions



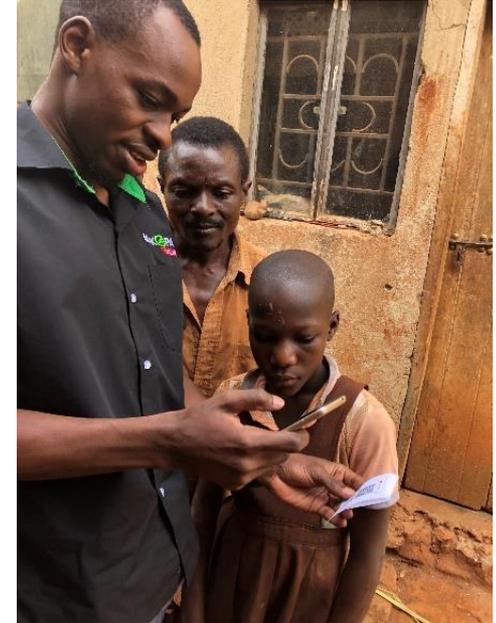
Developing prototypes to stress test initial hypotheses and technology



Testing those concepts to ensure fit, impact, and scale



# PRIDE IN OUR PRODUCTS



**Finalist,  
Medium TVs**



**Winner of the  
Affordability Prize**



**World Changing  
Ideas of 2020**

*What  
will be next?*

# HOW DO WE DESIGN FOR & WITH CUSTOMERS?

HEART

**User/Buyer Persona: Requires Reliability**

**Bio**  
Two years ago, Njeri's family were connected to the grid. This was very exciting until the brown outs began 6 months after. Around 6pm to 9pm the electricity goes out.

**Cooking Attitudes**  
She enjoys making extravagant dinners. She ensures that there are at least 3 items on the plate for dinner. She is the first one to wake up in the morning to make food everyone else wants a quarter and modern solution in her home.

**Needs on the eCook...**  
An electric pressure cooker will save me a lot of time and money!  
I have told my Chama group about the negative effects of smoke from wood-burned charcoal. They all me to be a solution.  
We are all committed to using Pressure Cooker as the alternative for something as long as cooking.

**Family with M-KOPA**  
She thought we paid for the M-KOPA 2017 as our great granddad with the support of her Chama group.

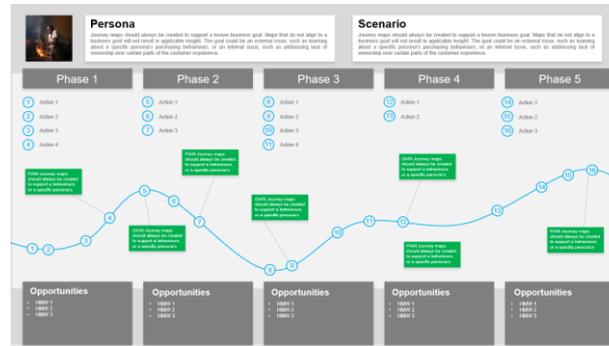
**User/Buyer Persona: Influencer**

**Bio**  
Kageri is a mother of two, and a kindergarten teacher in her community, due to her leadership characteristics. When she is not in the classroom, she is working with her community or spending time with her family.

**Needs on the eCook...**  
An electric pressure cooker will save me a lot of time and money!  
I have told my Chama group about the negative effects of smoke from wood-burned charcoal. They all me to be a solution.  
We are all committed to using Pressure Cooker as the alternative for something as long as cooking.

**Family with M-KOPA**  
She thought we paid for the M-KOPA 2017 as our great granddad with the support of her Chama group.

User Personas



Customer Journey Mapping



Observations/Games

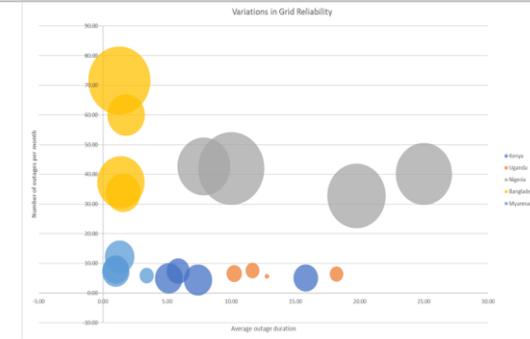
MIND



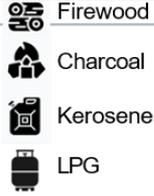
Surveys



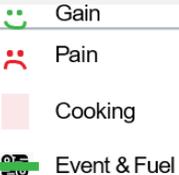
Pilots



Segmentation



# A Day In The Life: Kenyan Cooking



**START**  
06:00

10:00

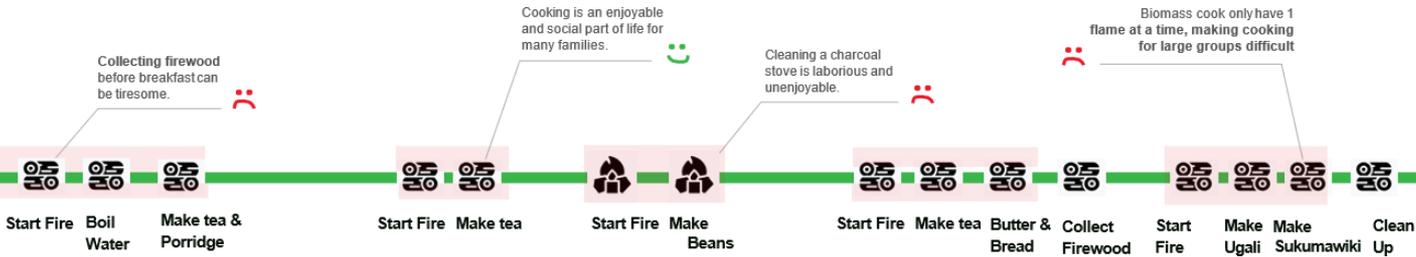
14:00

18:00

**FINISH**  
22:00



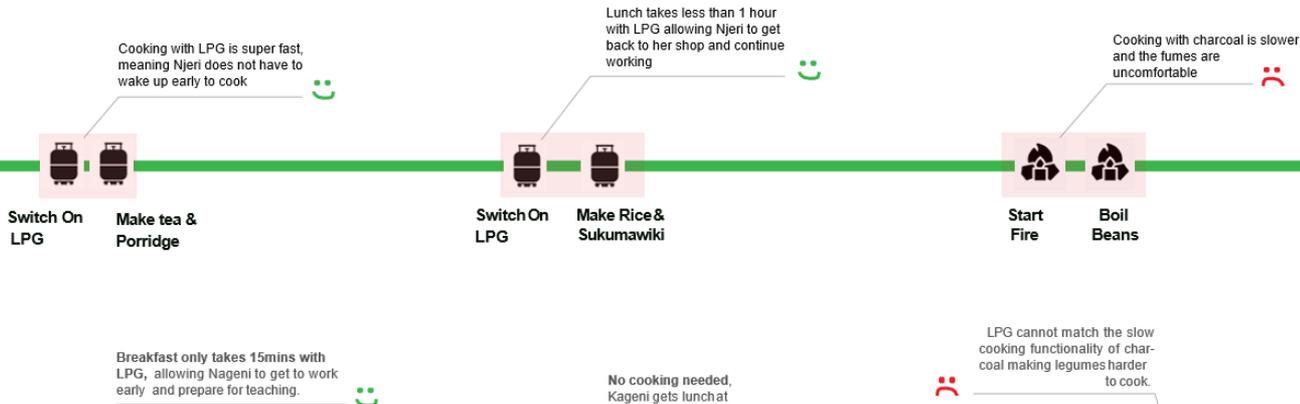
**Wangeci**  
Caring Mother



**4:30 hrs**  
Spent Cooking



**Njeri**  
Weak Grid Cook



**2:20 hrs**  
Spent Cooking



## Wangeci Caring Mother

Age: 54  
Profession: Mother  
Location: Gongoni, Malindi  
Solution: **Fan-assisted  
Cookstove**

## Bio

Wangeci puts her 6 children, 2 daughters-in-laws, 4 grandchildren and husband before herself. Her family is growing and with so many mouths to feed, she spends a lot of time cooking. She wants to cook with cleaner fuels so that the women in her family can build a better livelihoods for themselves.

### Views on the eCook...

*"I love my children. Food is how I show my love. However, since my first sons have returned home with their families, I am cooking more than usual. My daughters-in-laws and daughters collect firewood and water since they are stronger than me."*

*"The youngest grandchild joins me in the kitchen sometimes, I have heard her coughing more than usual. I am worried. My husband and son say the doctor is too far."*

## Cooking Attitudes

Wangeci prioritizes everyone else in her life before herself. She wants them to be happy and be well-fed. She is dutiful but is worried about her grandchildren. She is worried that they could fall ill due to the contact with smoke.

## Current Cooking Behaviour

Wangeci cooks for 4 -7 hours everyday depending on if they receive guests or a special occasion. This happens often due to the large family size. She uses firewood (collected), charcoal, and sometimes kerosene to cook but that makes her kitchen black and ugly.

## Cooking Preferences

A cleaner, modern and quicker way to cook. She will keep on using firewood since it is easy but wants to cook quicker and smokeless if possible.

## Familiarity with M-KOPA

She bought and paid off the MK Classic in 2012 with good speed.



## Caring Mother

Biomass cooks often feel like so much of their time is spent collecting fuel which takes a variable amount of time and then cooking as well. This is a duty for them; their time is not seen as the same as others in the household. They understand it is the role that they must play; but with the right value proposition – they embrace a better proposition

## A day of cooking

The average day of a biomass cook is largely filled with chores. Cooking forms a considerable amount of effort. Our predominantly rural customers have cooks that endure many hours of cooking and collecting of fuel to the detriment of her health and wellbeing of her family.

### Breakfast

- 1 Start a fire
- 2 Begin boiling water
- 3 Make/Stir tea and ensure it boils well
- 4 Finish and prepare extra items (i.e. fruit)

### Tea

- 5 Start a fire
- 6 Boil water
- 7 Make tea

### Lunch

- 8 Decide what is appropriate for lunch
- 9 Starts a charcoal jiko
- 10 Cooks beans
- 11 Cleans charcoal stove

### Collect Fuel

- 12 Travel a variable distance for fuel
- 13 Buy/collect fuel

### Dinner

- 14 Start a firewood stove
- 15 Boil water and make Ugali, keep warm
- 16 Fry vegetables and tomatoes for Sukumawiki

PAIN: I am so tired; but I must get breakfast ready and my kids ready for school

PAIN: I must get the jiko ready for lunch and I forgot to clean it last time

PAIN: I have to make sure that the food I make is warm when the family is ready

GAIN: When there is no pressure it is nice to make some tea

GAIN: I am excited for how this meal will turn out; I know my family will love it

PAIN: I've had a full day and good wood is harder to find /further away

### Opportunities

- Making breakfast should be easy HMW shorten the amount of time spent preparing breakfast?
- Making breakfast should be easy HMW create solutions that eradicate the cook altogether?

### Opportunities

- Every cooking event is a considerable journey, HMW enable quicker standard cooking events like boiling water?
- Cooking can be enjoyable HMW keep the therapeutic, social sides of cooking?

### Opportunities

- Cleaning a charcoal stove is not a fun activity and is time-consuming HMW make finishing cooking a fun end to the process?

### Opportunities

- Most biomass fuels have to be bought or collected meaning travelling to a market or source HMW eradicate a customer moving for fuel?
- Fuel costs fluctuate based on season HMW remove fuel fluctuations for the customer?

### Opportunities

- Biomass cooks often have only one flame at a time which elongates the cooking time for multi-pot recipes HMW shorten this time experience?
- Most cooking is done near mealtime, HMW remove that necessity?

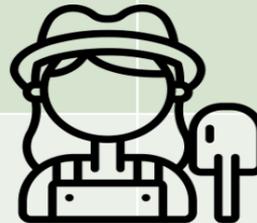
# Empathy Map

## SAYS

- I want “Solar Gas”
- I want a product that cooks fast
- I want a product that saves me money
- It is too expensive to cook with electricity
- Microwaved food gives you cancer

## THINKS

- How can I spend less time collecting or buying fuel?
- How can the sun be used to power my cooking?
- How can M-KOPA make cooking PAYG?
- If it fits in the cooking budget – it’s easier to make the change



Rural Cook

- Aims to maintain a cooking monthly budget, encompassing refills
- Spend up to 4 hours cooking per day
- Spends hours travelling to collect or buy fuel in groups/family
- Has control over most cooking related items/services

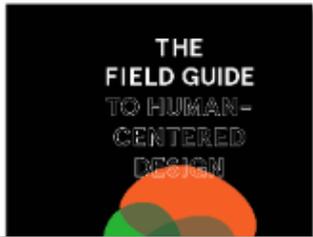
- *Duty*: it is my duty to cook for my family as the female head
- *Pride*: the food needs to taste good
- *Care*: the best way to care for my family is to cook for them
- *Concern*: will changing my cooking tools impair my ability to feed/care for my family

## DOES

## FEELS

# IN CASE YOU'RE CURIOUS FOR MORE...

If learn by reading...



## The Field Guide to Human-Centered Design

A step-by-step guide from IDEO that will get you solving problems like a designer

### Unlocking Rural Digital Finance with Solar Energy

## Light Bulb Series

Thought pieces from Labs innovations surrounding PAYG model

Click [here](#) to dive into the series

An expansion of M-KOPA's pay-as-you-go solar model enables rural farmers to access investment capital

If you learn by watching...



Check out Labs' [YouTube](#) channel to hear directly from customers on impact of M-KOPA



**M-KOPA**  
UPGRADE YOUR LIFE





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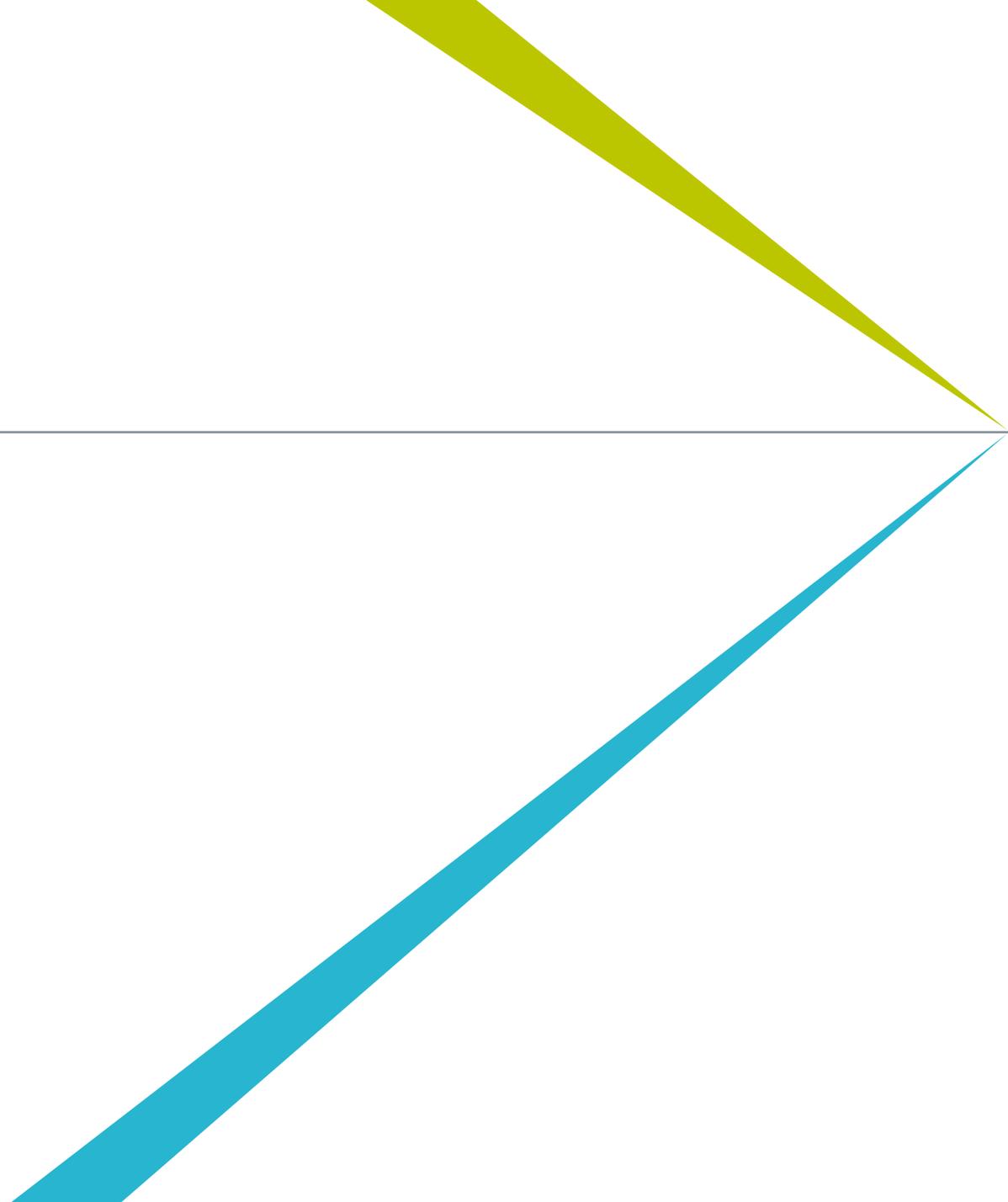
**Thank you**



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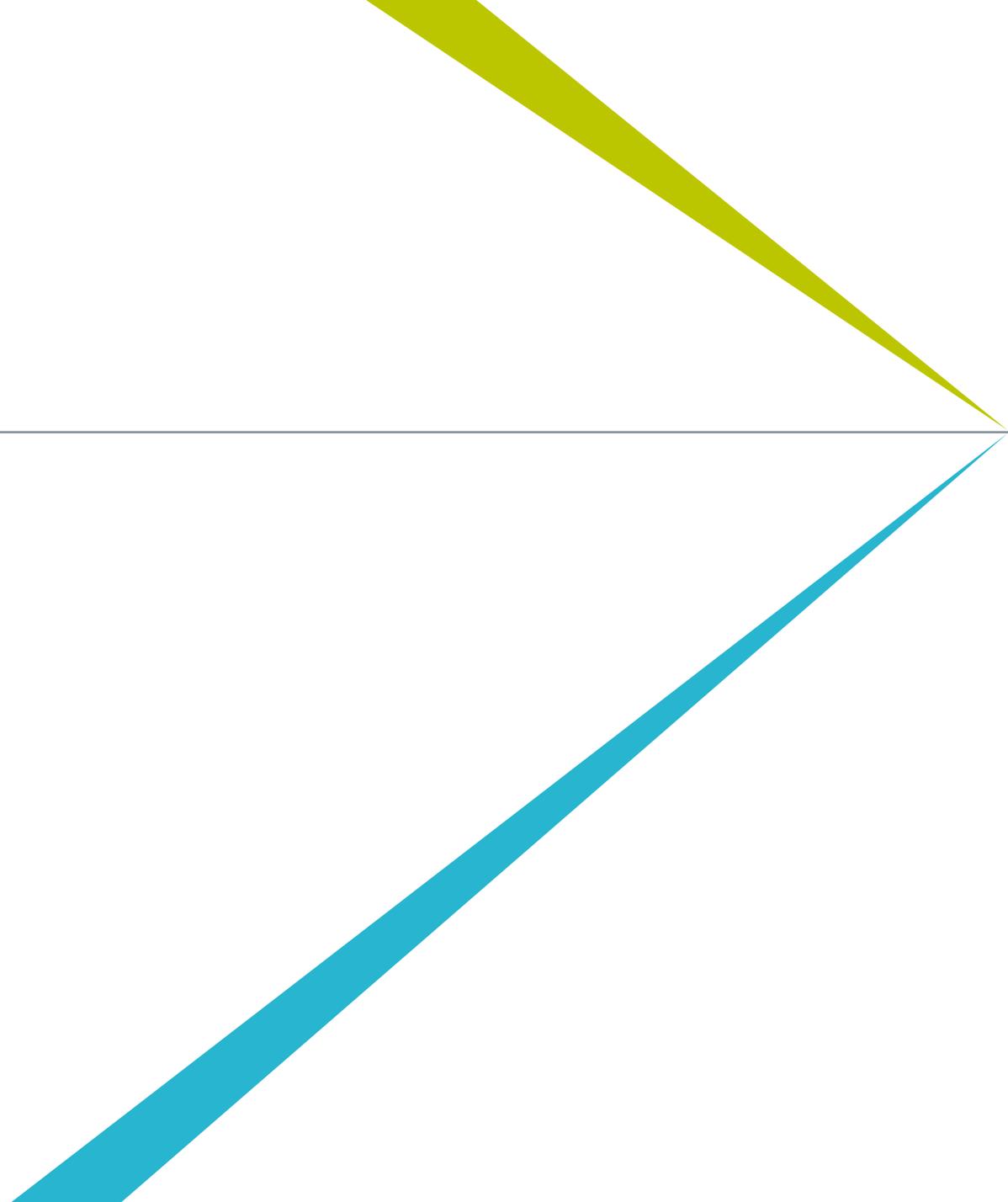
**Q&A**



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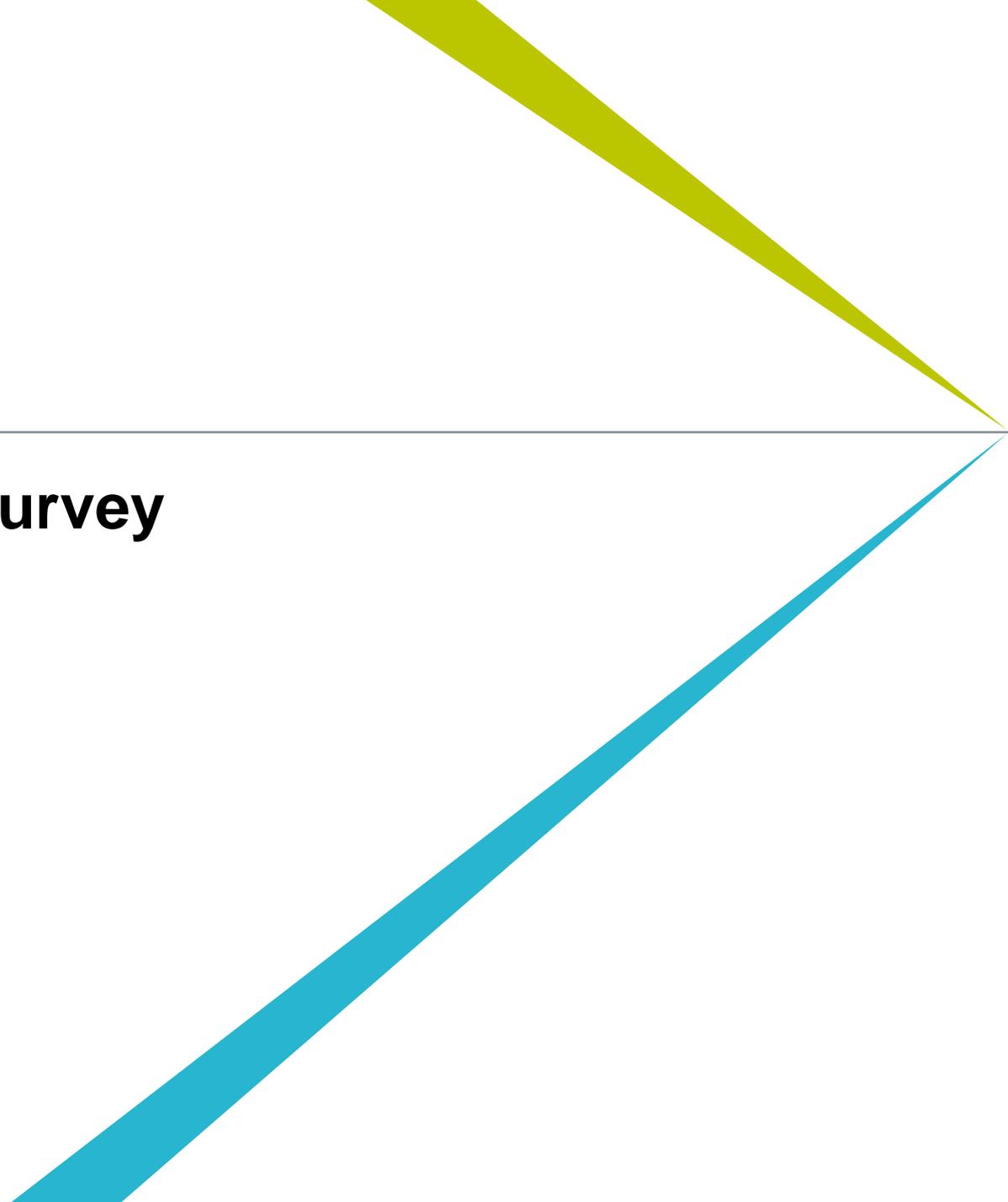
# Short feedback survey



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