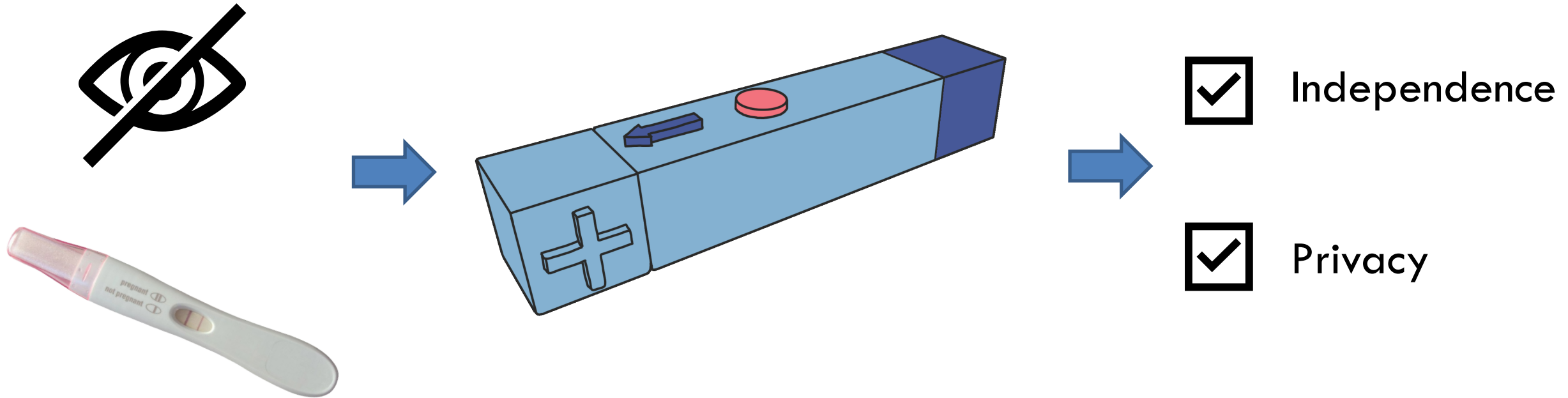


Pregnancy Test for Visually Impaired (VI) Women

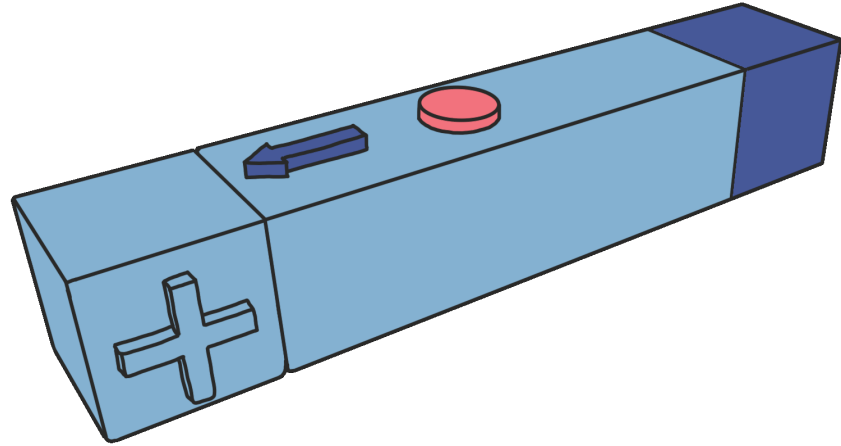


Imperial College
London

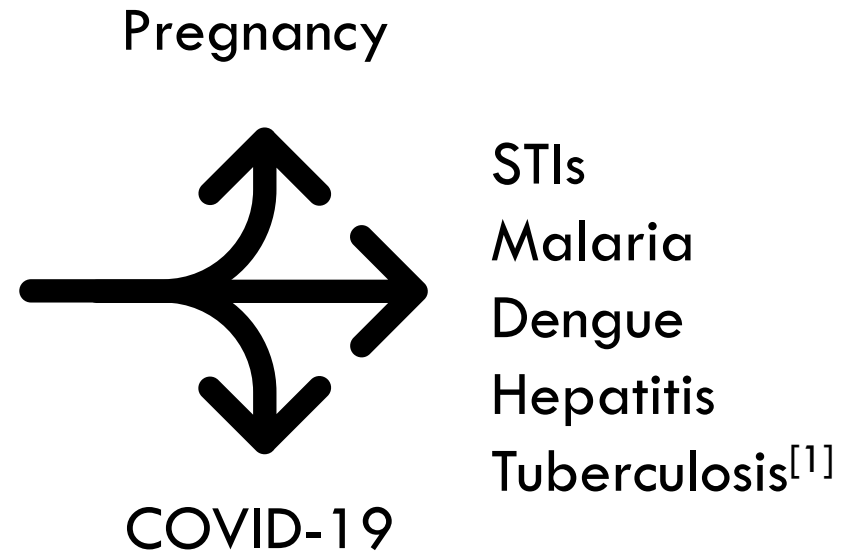
Elevator Pitch



Elevator Pitch



Lateral Flow
Test (LFT)



[1] Abingdonhealth (2018) *GUIDE 3: What's driving lateral flow diagnostics growth?* [Available here](#)

What is the problem?

Happy ?

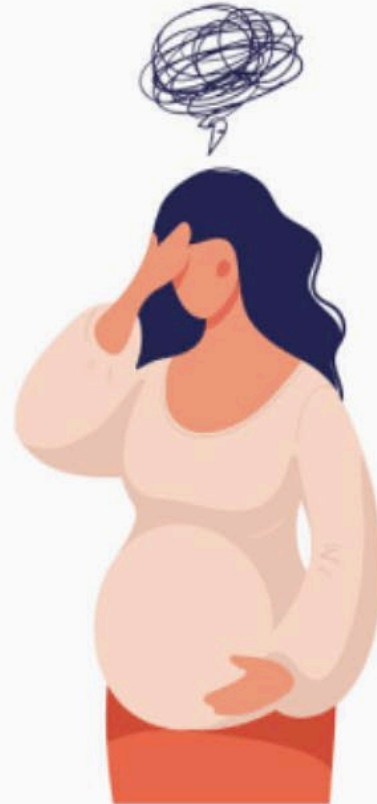
Excited ?

Confused ?

Overwhelmed ?

Surprised ?

Frustrated ?



Key Opinions from Advisors

Martin Wingfield, Head of Brand and Marketing at RNIB, said: *“The problem isn’t just limited to pregnancy tests, we’ve heard incredible stories from people with sight loss of not being able to access their own medical information. From product packaging to financial information, everyone has the right to privacy and dignity.”* [2]

Feedbacks from Target Users

“Existent option problem: waiting too much for someone to be available.”

- Surveyee

“We want independence, not to use an app. Some women might not have phones.”

-Surveyee

[2] Kiefer B (2020) RNIB launches pregnancy test for women with sight loss, Campaign Live. [Available here](#)

Existing Solutions

In-Person Assistance



User is not the first person to find out

Voiceover Image Recognition



Requires smartphone and hard to get a reading from a small object as a pregnancy strip.

Clearblue and Be My Eyes app

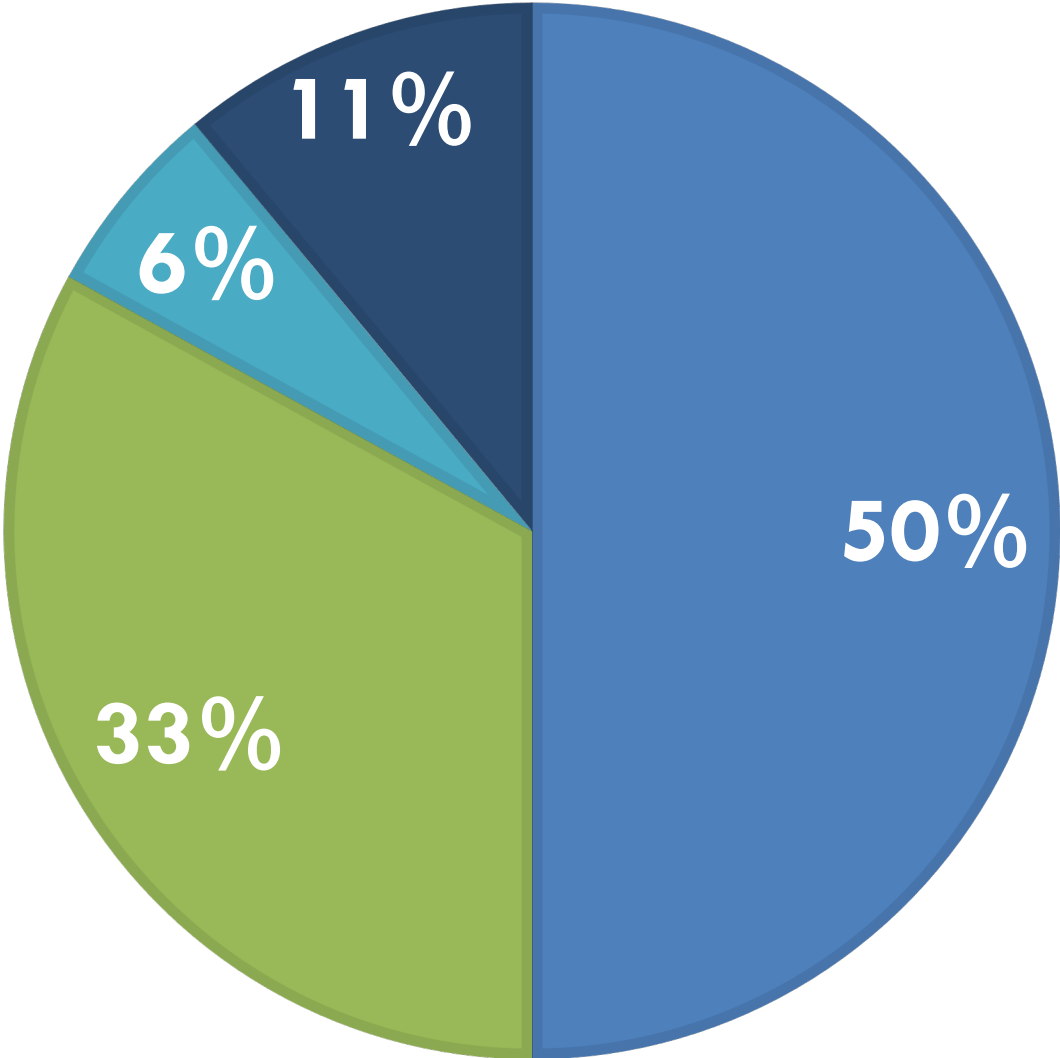


Bringing sight to blind and low vision people

Requires smartphone and internet

Output Preferences

■ Sound ■ Bump Touch ■ Heat Touch ■ App



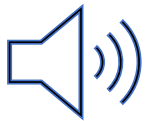
The Solution



Automatic Tactile Output



Discrete Use



Auditory Output When
Button is Pressed



Users Are the First to Receive Results

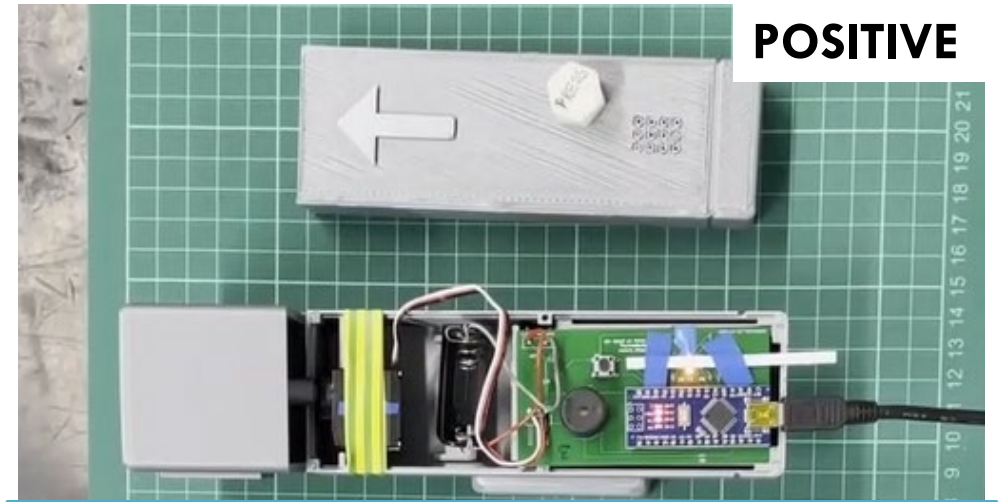
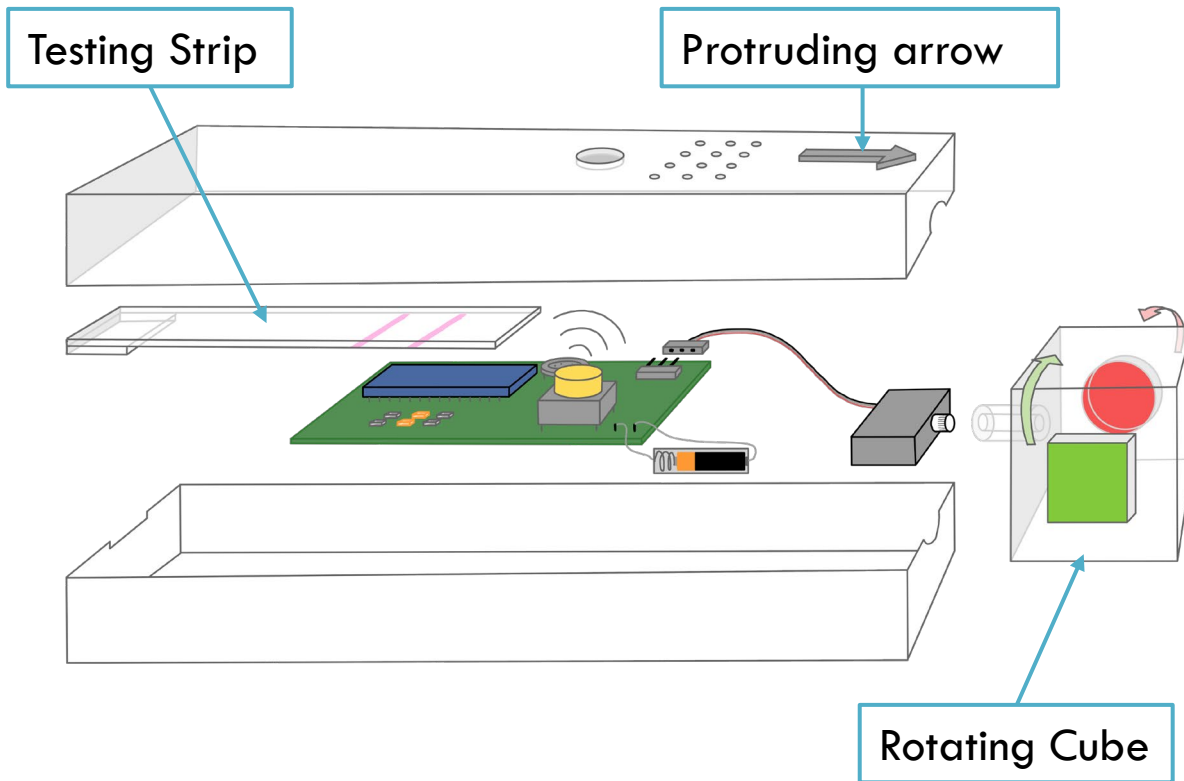


Ease of Use as a Cup is
Provided for Urine
Collection



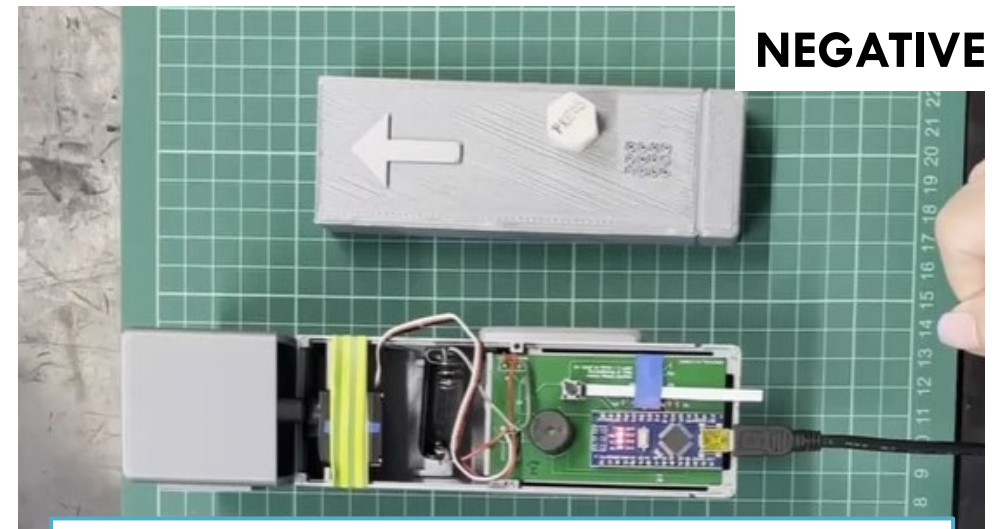
Adaptable For Covid-19 Testing

Prototype Design



POSITIVE

Protruding square, high-pitched, continuous beep



NEGATIVE

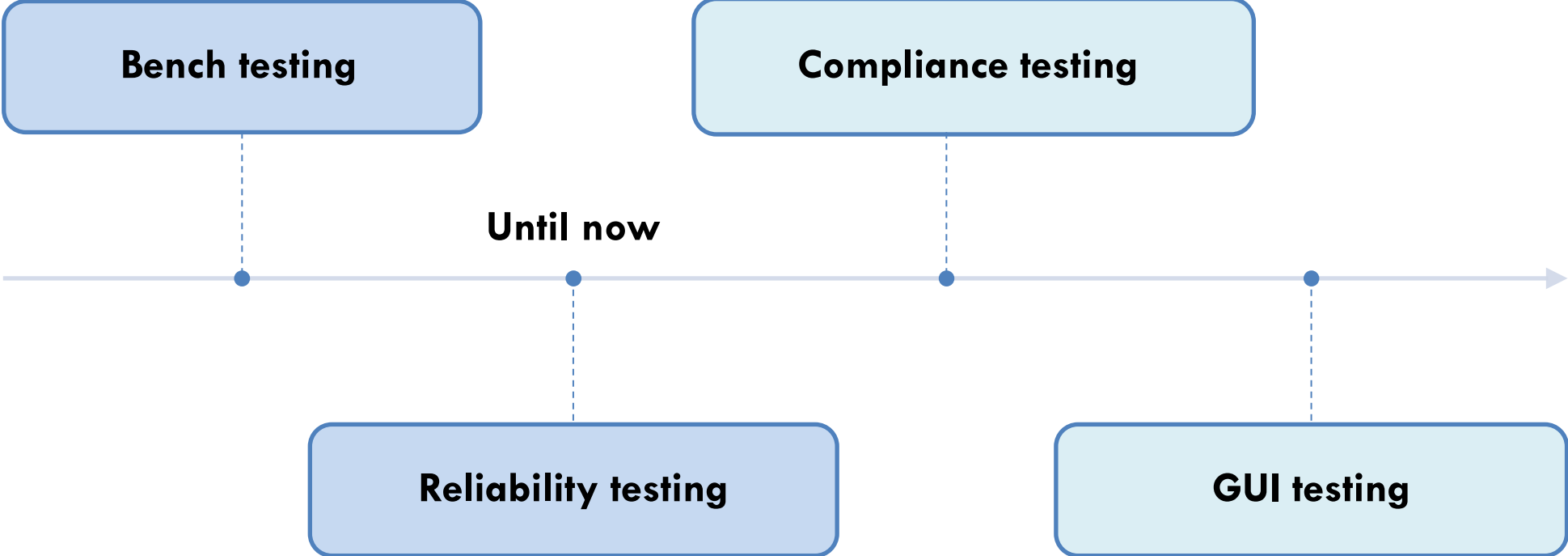
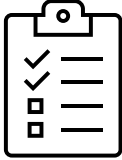
Indented circle, multiple low-pitched, beeps

Intellectual Property



Type of protection	Content
Trademarks	Product name, logo
Registered designs	Shape of our product
Patents	Circuits, machine parts

Clinical Studies



Clinical Studies



Compliance testing

- **Endpoints:** None of the tests should affect the circuitry
- **Sample size:** 100 pregnancy strips with different amounts of liquid absorbed
- **Location:** Electrical lab

Clinical Studies



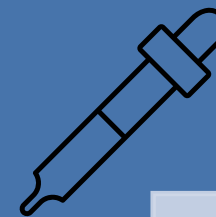
GUI testing

- **Endpoints:** 95% of them should correctly interpret the results
- **Sample size:** 100 VI women
- **Location:** Any quiet environment

Regulatory Strategy (UK)

Requirements:

Class 1 sterile, measuring device
Must comply with the UK's in vitro diagnostic medical devices directive



Approval:

Gain approval from the MHRA
Obtain UKCA marking^[3]

UK
CA

Regulatory Risks:

Brexit and Covid-19 laws
Mitigate by maximising accuracy and minimising physical risks



[3] GOV.uk *Regulating Medical Devices in the UK* [Available here](#)

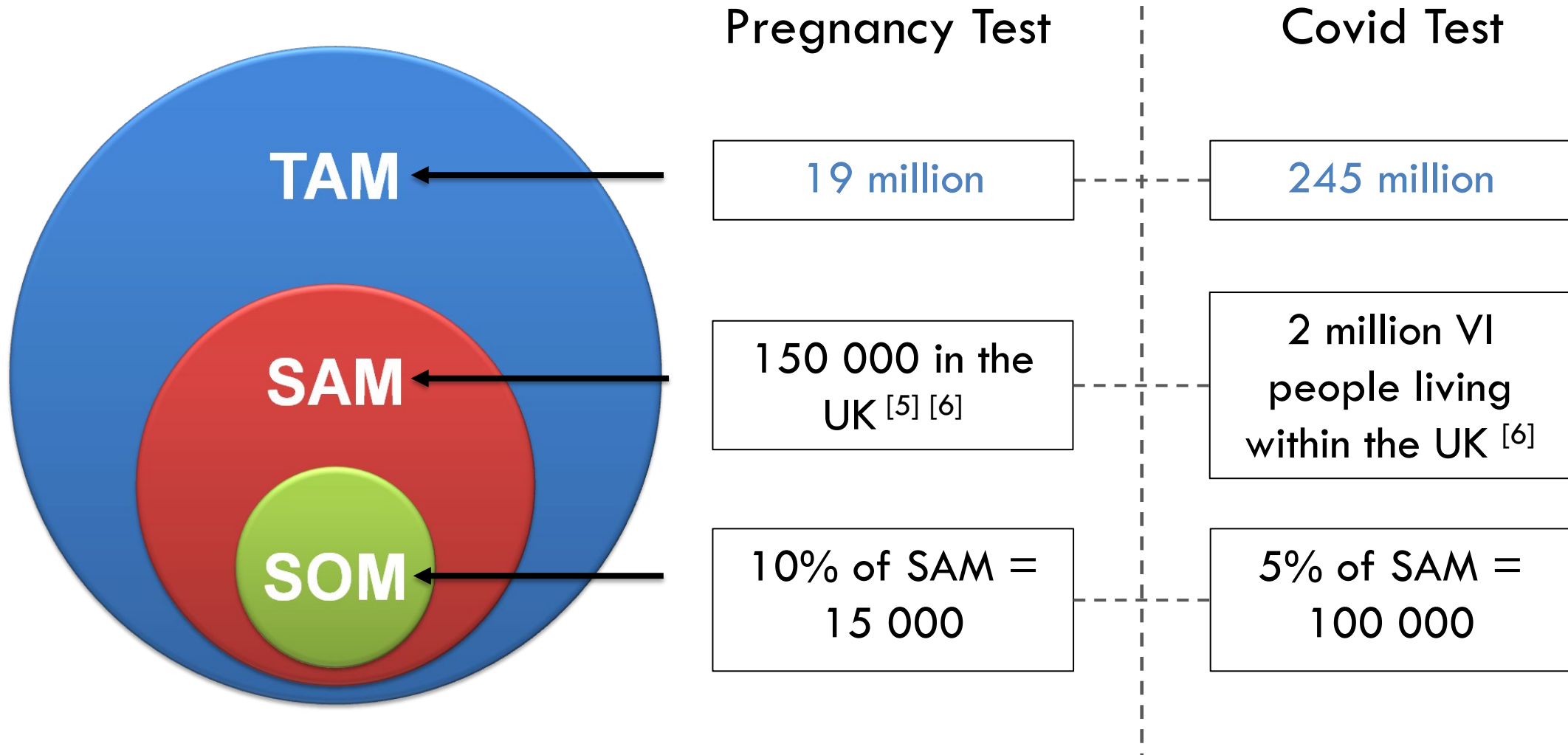
The Market

	Pregnancy	Covid / Future Diseases
Target Customer	VI women aged 15-45 ^[4]	Physically-able VI people
Market Size	19 million ^[5]	245 million ^[5]
Market Growth	10% /5 years ^[5]	17% /5 years ^[5]

[4] Office for National Statistics (2020) Childbearing for women born in different years, England and Wales: 2019

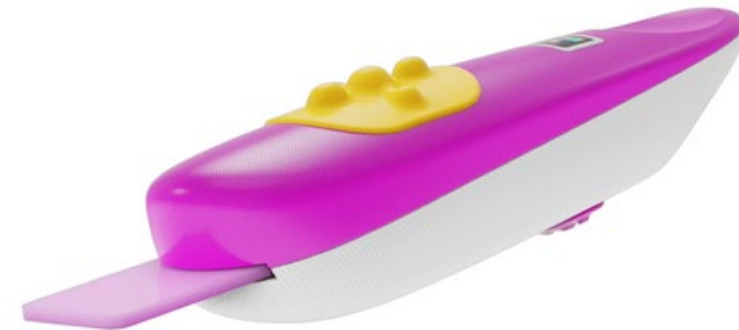
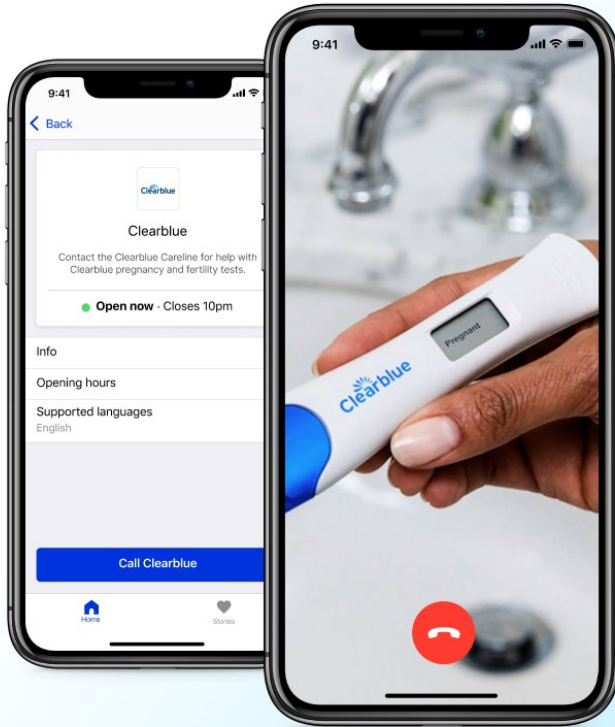
[5] Ackland, P., Resnikoff, S., & Bourne, R. (2017). World blindness and visual impairment: despite many successes, the problem is growing. *Community eye health*, 30(100), 71–73.

The UK Market



[6] NHS (2021) *Blindness and vision loss*. [Available here](#)

Competitors





Business Model



Business Model



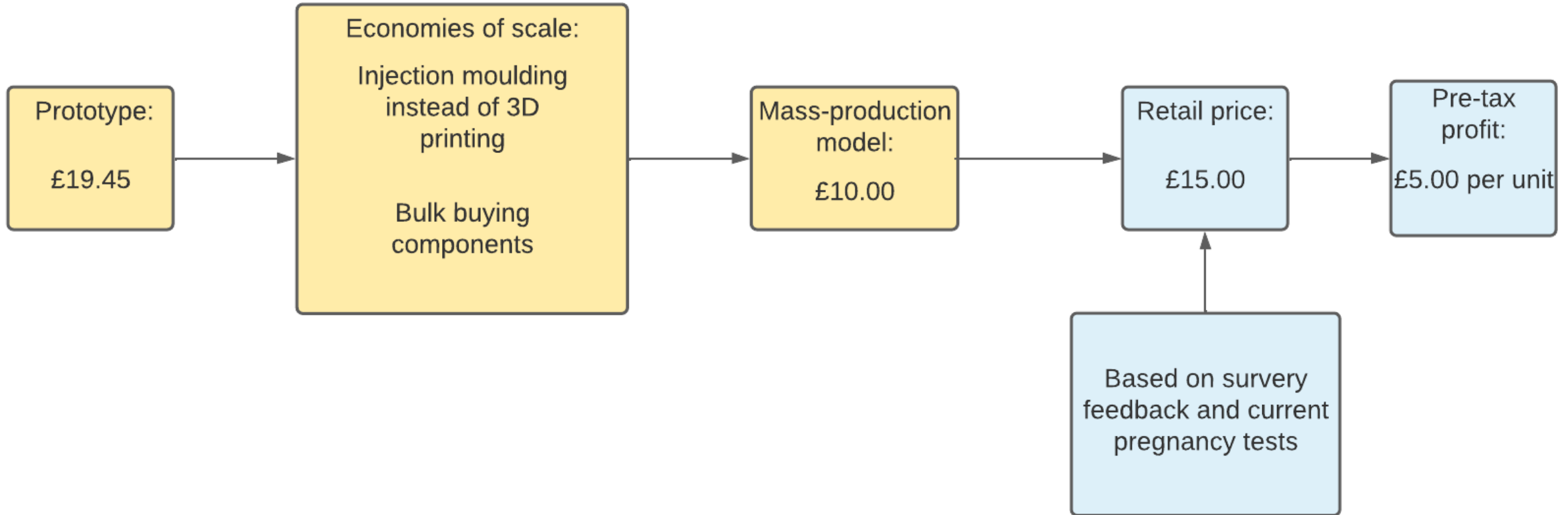
Raising **corporate social responsibility** profile as

- Pregnancy test: Beneficial to VI women 
- Covid-19 test: Beneficial to all VI people 

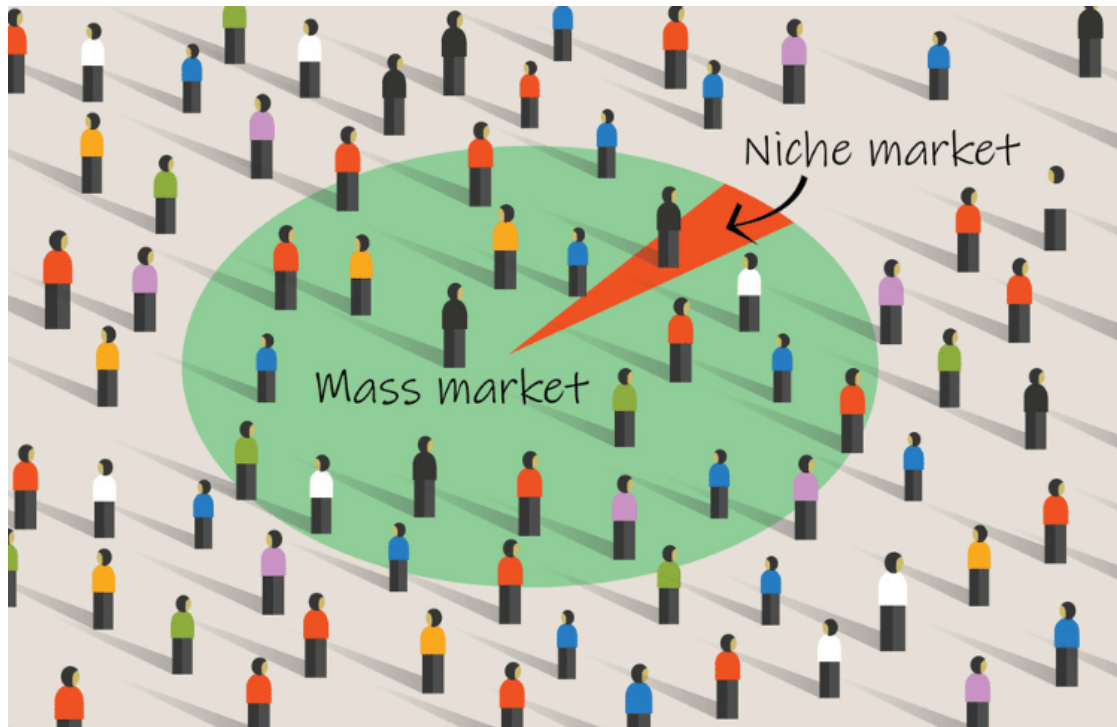
Pricing and Margins

Production Cost

Retail Cost and profit



Marketing



Project Overview

Problem Definition

Our Idea

Testing & Regulations

The Market

Business

R&D Strategy

Pregnancy test

Covid-19 test



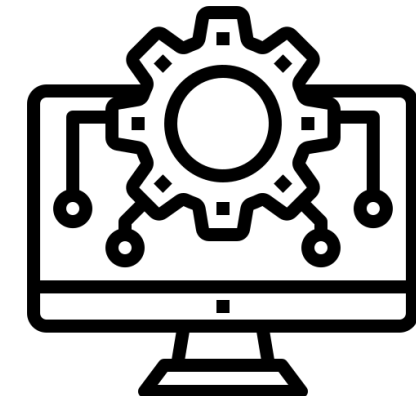
Organisations and Communities



Auditory ads



Algorithm-based targeted advertising



Pregnancy test

Covid-19 test



Pregnancy test

Covid-19 test

[Home](#) > [Coronavirus \(COVID-19\)](#) > [Testing for coronavirus \(COVID-19\)](#)

Order coronavirus (COVID-19) rapid lateral flow tests

You might be eligible to order a free pack of rapid lateral flow tests to be sent to your home.

Use this service to:

- check if you're eligible to order rapid lateral flow tests
- order rapid lateral flow tests to be sent to your home if you're eligible

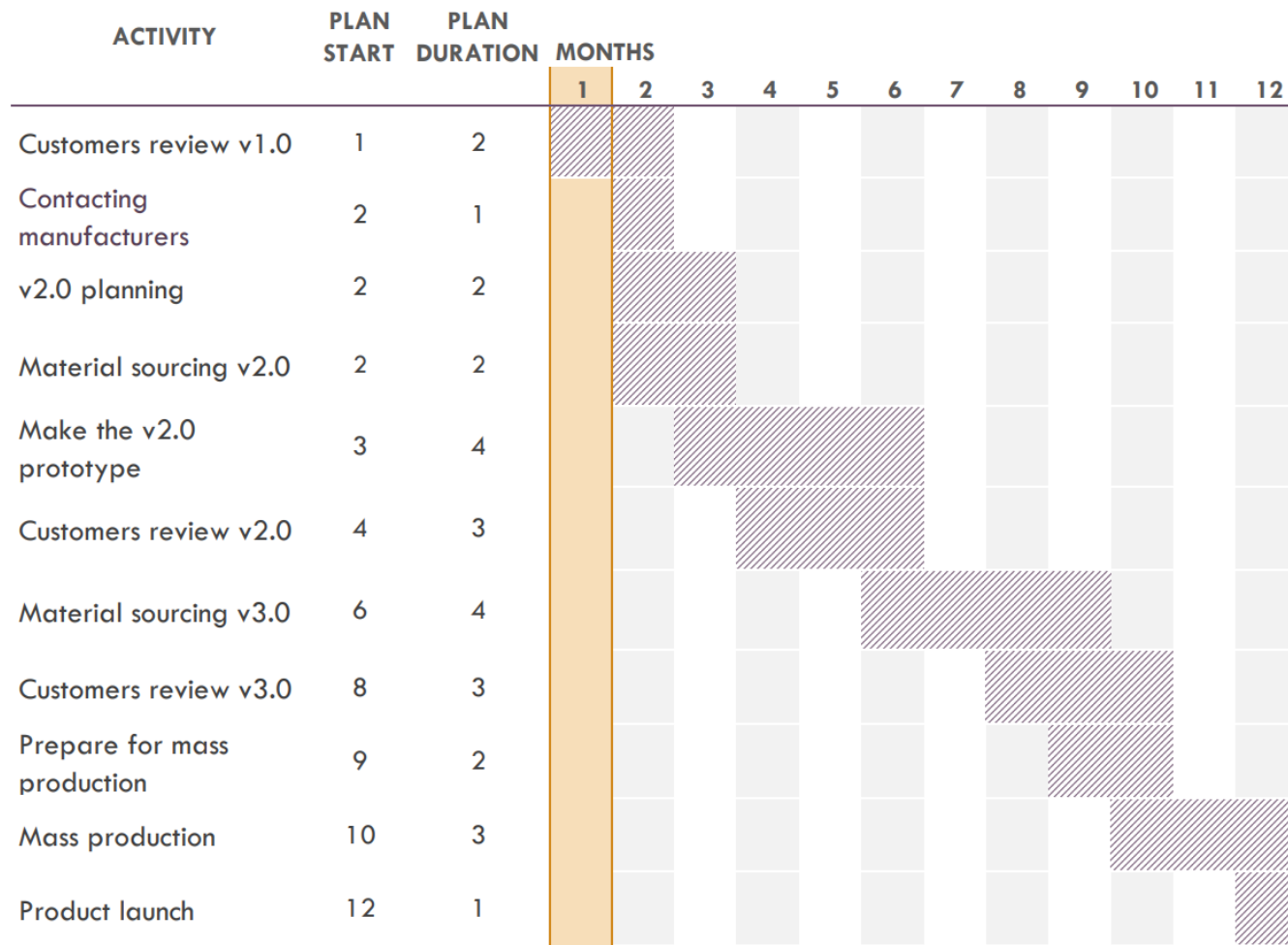
If you are visually impaired:
[try this](#)

Related content

[Report a COVID-19 rapid lateral flow test result](#)

[Get a free PCR test to check if you have coronavirus \(COVID-19\)](#)

R&D Strategy



Risks	Mitigation
Low demand	Advertising, Multiple versions
Supply chain issues	Start with small batches before launching the product



Thank you!

Contact us:

binghuan.li19@imperial.ac.uk



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