

UX Challenges in an IoT Startup

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MOME IxD Lab



Baby CTG

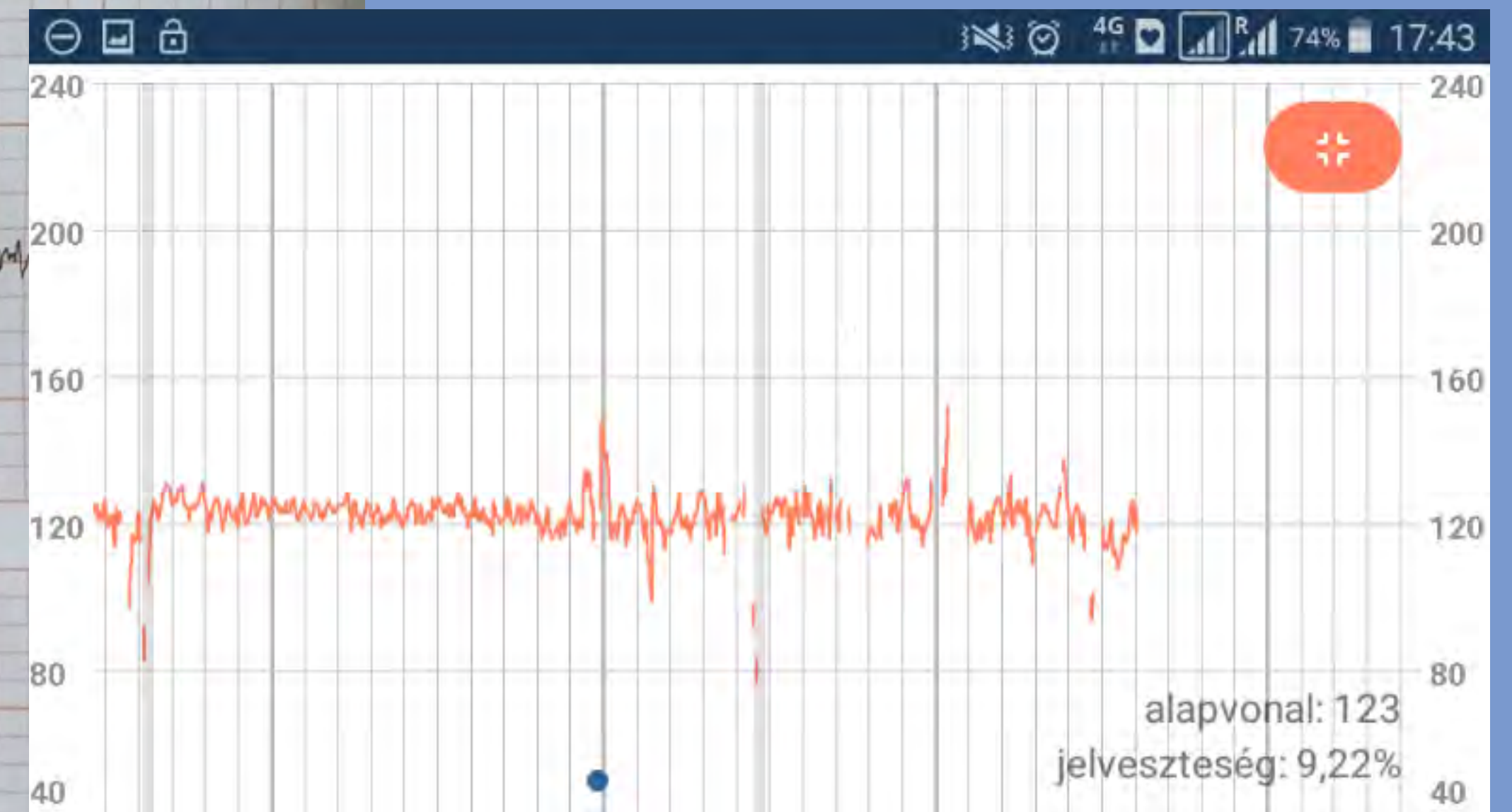
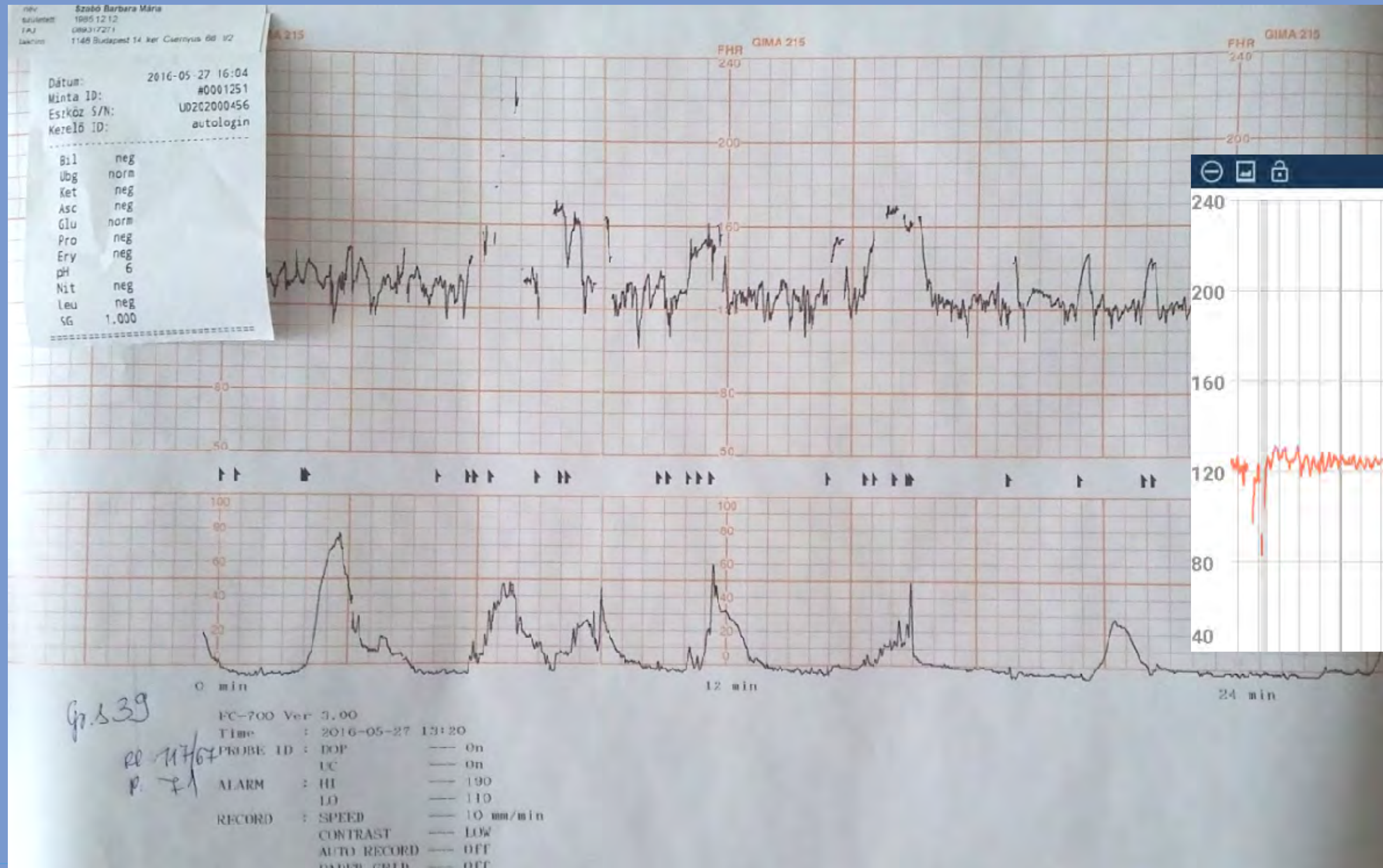
A mobile app based fetal heart rate remote monitoring service (cardiotocography - CTG).



REMOTE MONITORING



REMOTE CTG MONITORING



AN APP FOR SAVING LIVES



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EXALT INTERACTIVE ♥ GENIUM-MED ♥ BME AUTSOFT.



1.

**In a Hardware
Startup Hardware
is Secondary**



We've replaced this clinical tool



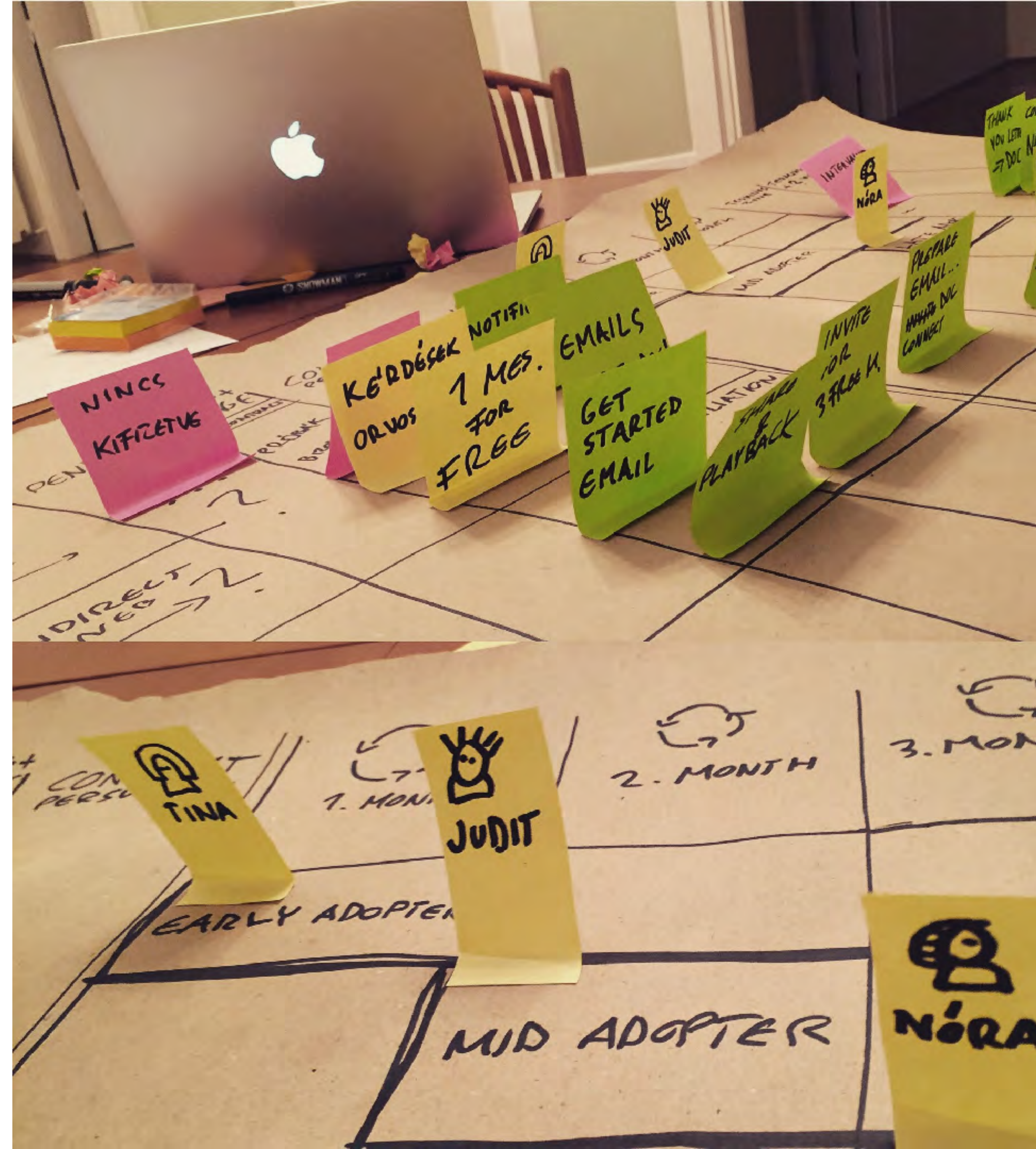
With this

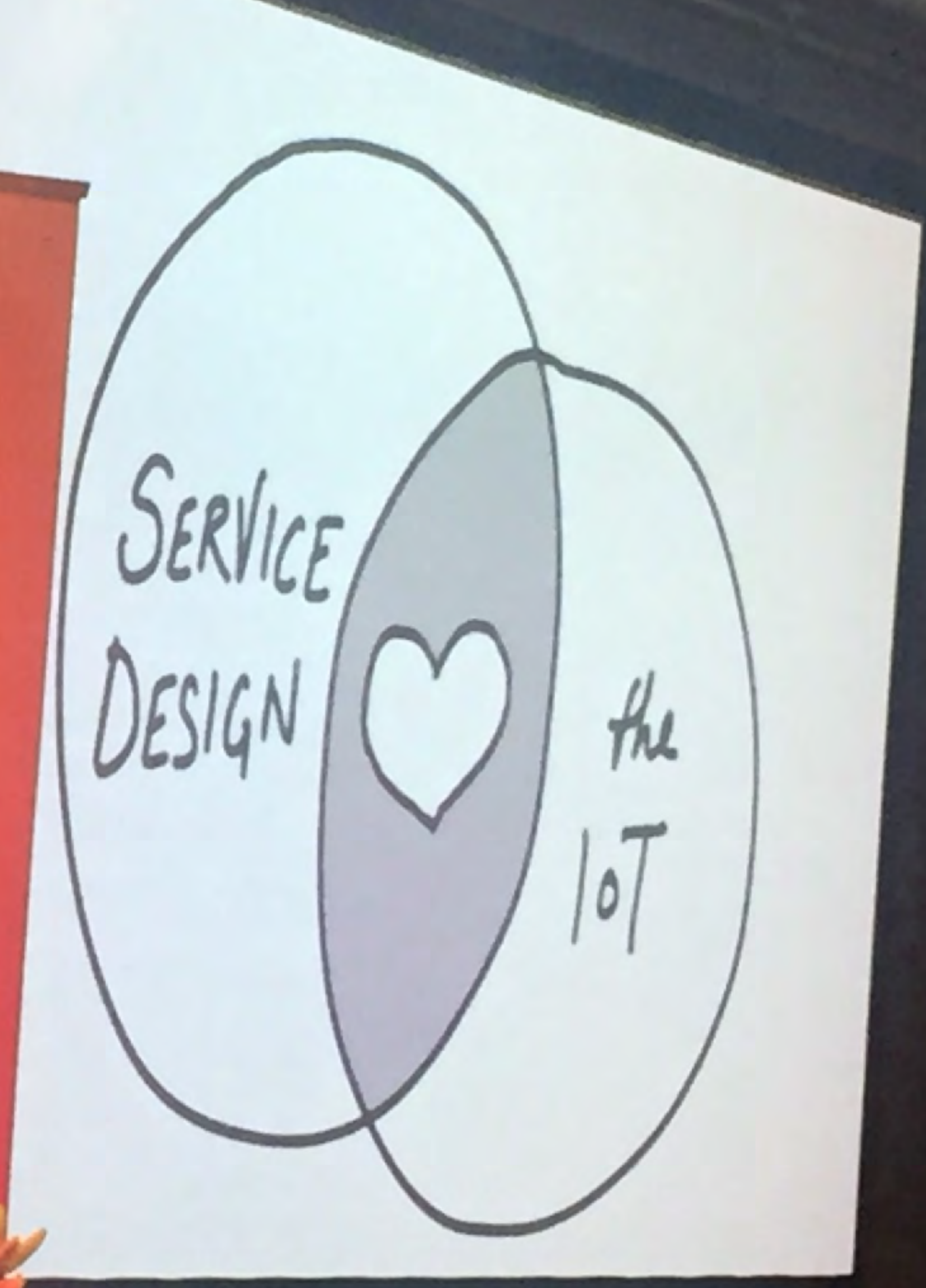
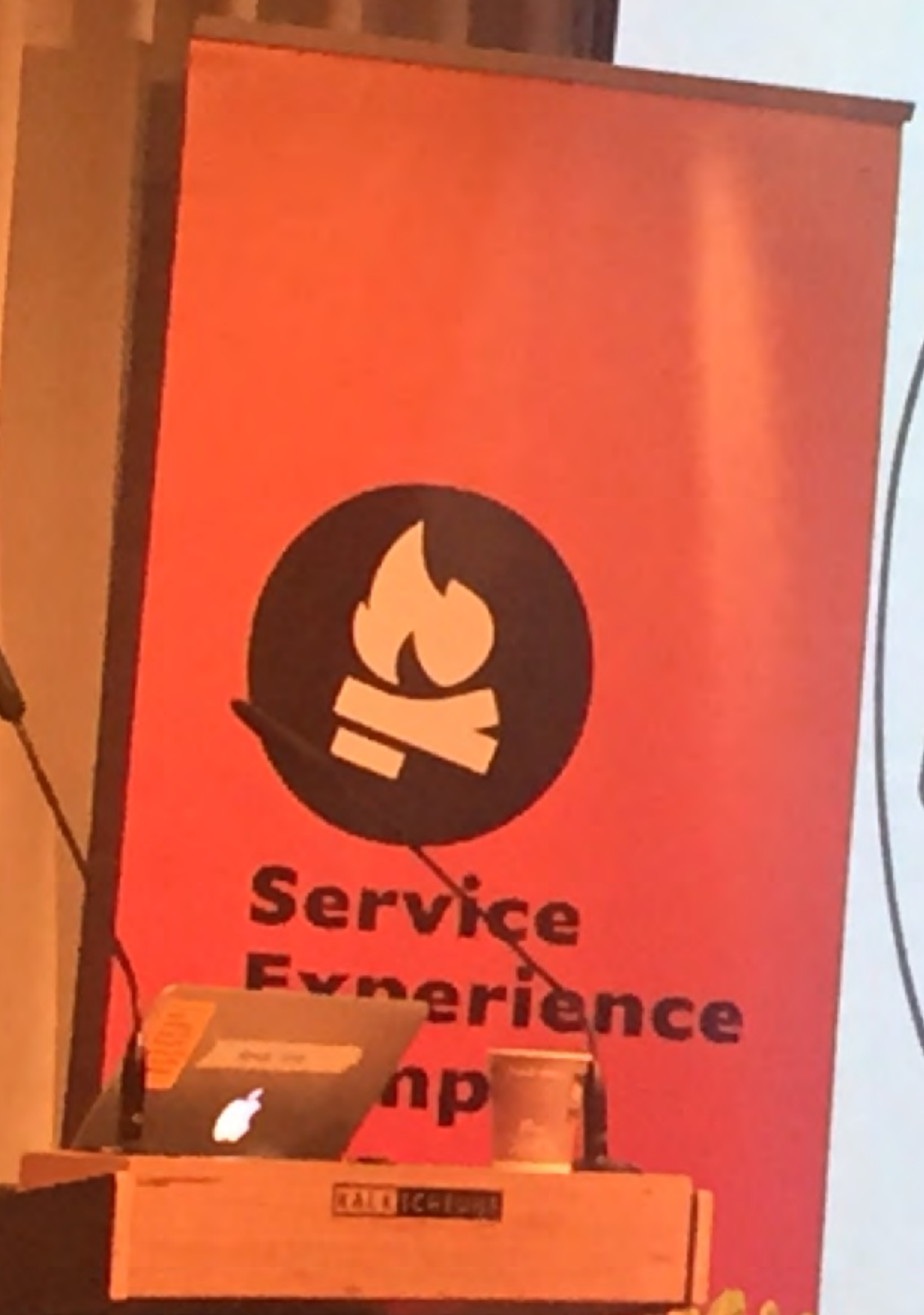
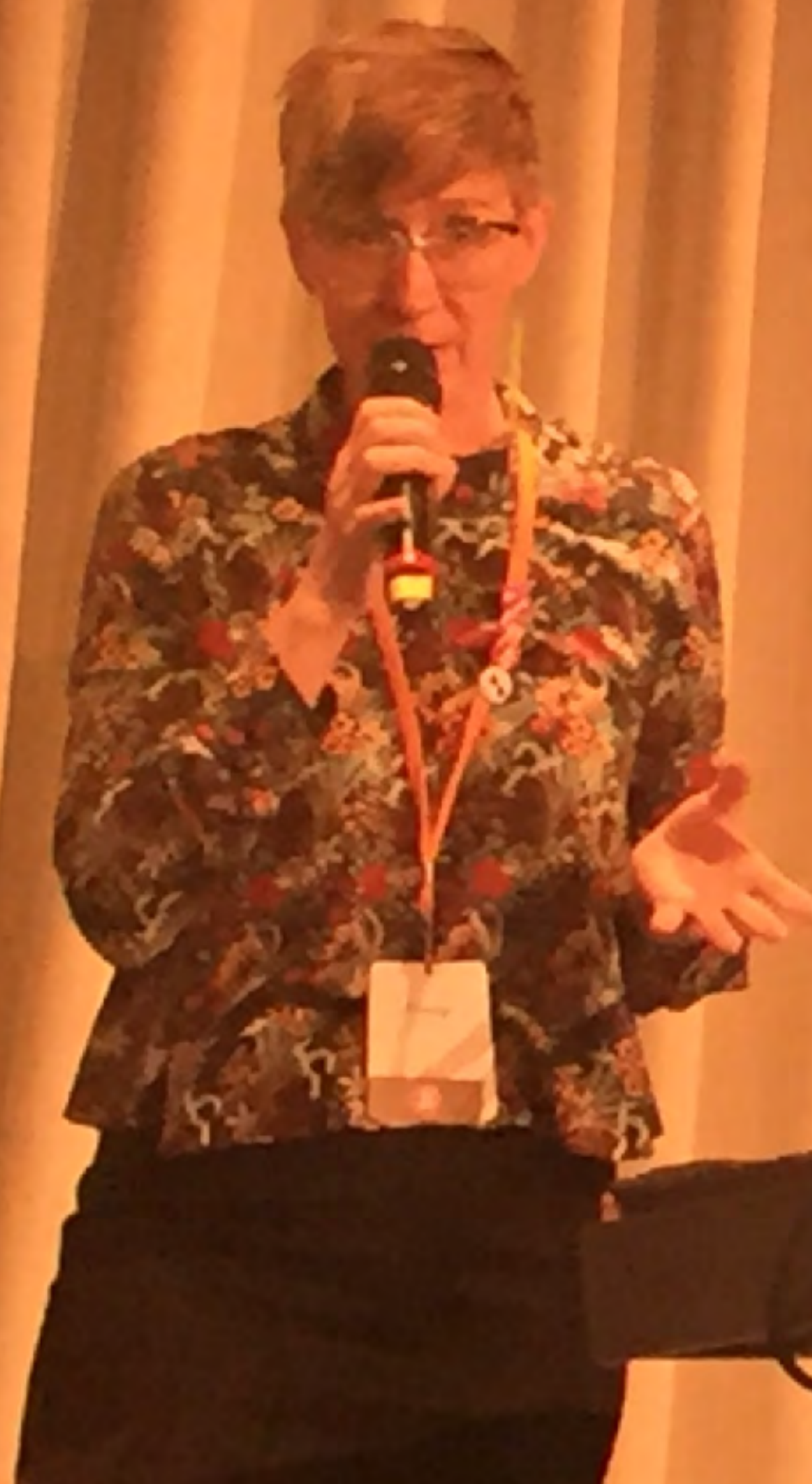


It's would be easy to think that the new, friendly hardware is the key.

Not About The HW

- custom (medical) hardware needs to be licensed, takes years
- If you're working on an IoT Startup, you're creating a SERVICE, not an app or a "digital product".
- Means, you do design differently
- Hire a Service Designer





2.

**Testing is not a step,
it's a process**



Average Product Process

Research Scoping Information Architecture Wireframe prototype Design Prototype Usability Testing Develop MVP

Iterate

Our Product Process

Testing hardware and code Scoping Information Architecture Wireframe prototype Design Prototype Usability Testing Develop Beta

Iterate

Testing working MVP

Testing working MVP

Testing working MVP

Testing working MVP

Testing working MVP

Testing working MVP



Testing the band

Testing algorithm

Testing battery life

Testing connection on field

Our Product Process

Testing hardware and code

Scoping

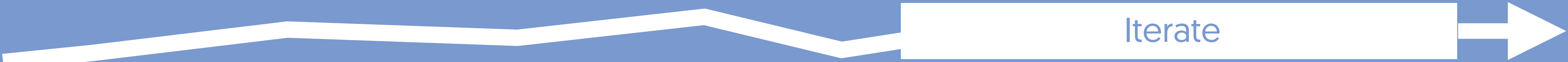
Information Architecture

Wireframe prototype

Design Prototype

Usability Testing

Develop Beta



Iterate

Testing working MVP

Testing working MVP

Testing working MVP

Testing working MVP

Testing working MVP

Testing working MVP

Testing signal strength

Testing processes

Usability testing

Testing software



Test Early

- We've started without an app proto to test the service itself
- then moved to a button+diagramm app.
- About 50 field tests to learn behaviour and refine signal computation
- Start with something. Anything.



3.

Designing for “Time”



Time Factor

- Every interaction takes a certain amount of time
- Every session takes time
- Time between sessions
- The hardware needs time (connect, calibrate, recharge...)



Minimum measurement length

Maximum time of a pause

Maximum measurement length

Time before doctor replies

Can be sent within 2 hours

Time it takes to see the notification

Average time of finding

Average time for connecting a device

Days remaining of the subscription

Time out for finding the heart beat

Time out for finding the device via Bluet.

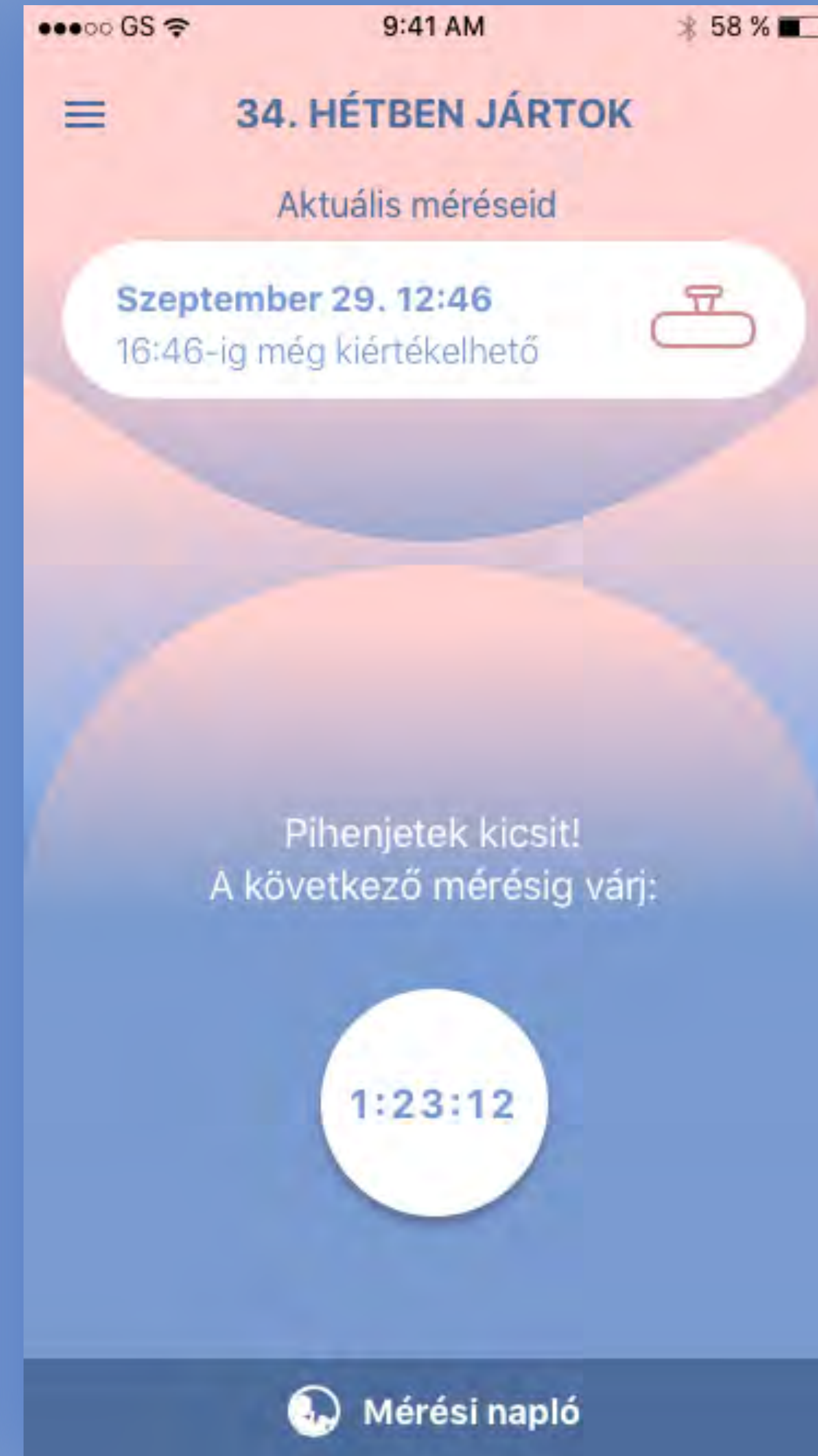
Remaining days before terminus

Time before battery is depleted

Time before sensor battery is depleted

Minimum time to wait before a new measurement





4.

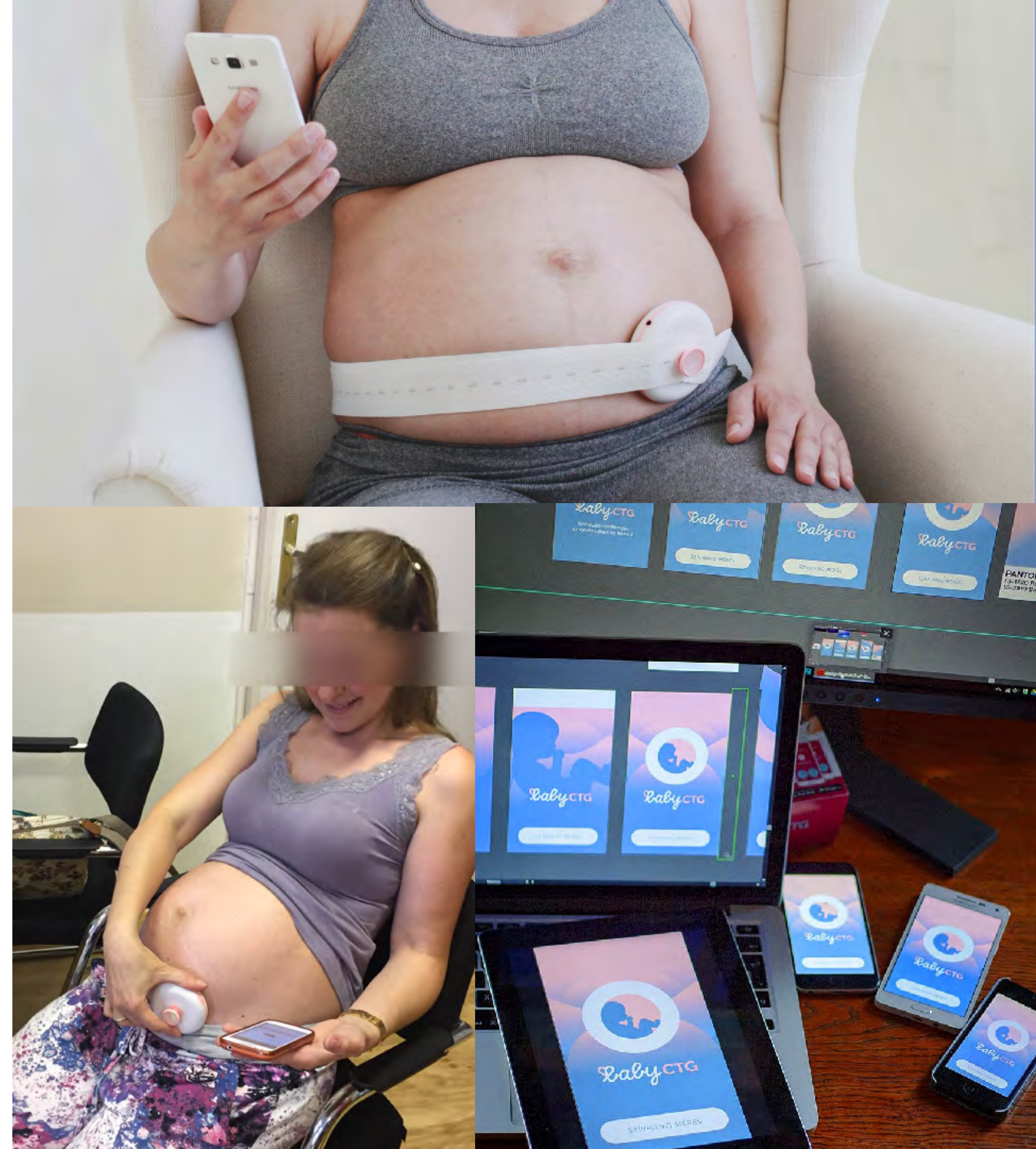
Designing for Context



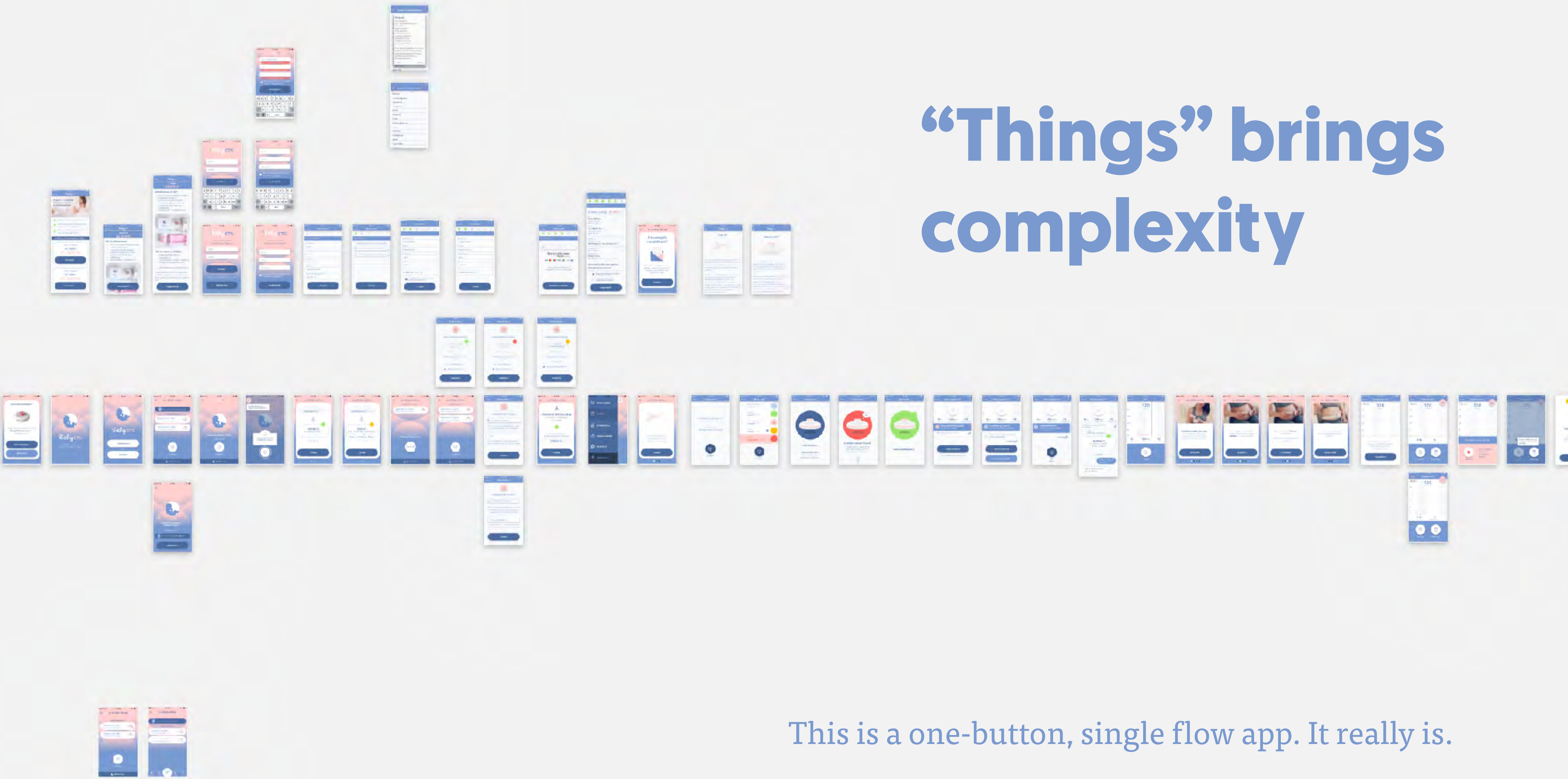
What is the context?

- Sitting or lying? Day or night?
- On what device?
- Do Ethnographic Research
- Develop contextual awareness
- Test with “Extreme Users”
(we have a doctor in Liberia)

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“Things” brings complexity



This is a one-button, single flow app. It really is.

No Control

- You really only have control over your interface
- People are using your product / service in an unpredictable way
- “Things” will start to live their own lives (hiding, recharging, aging...)

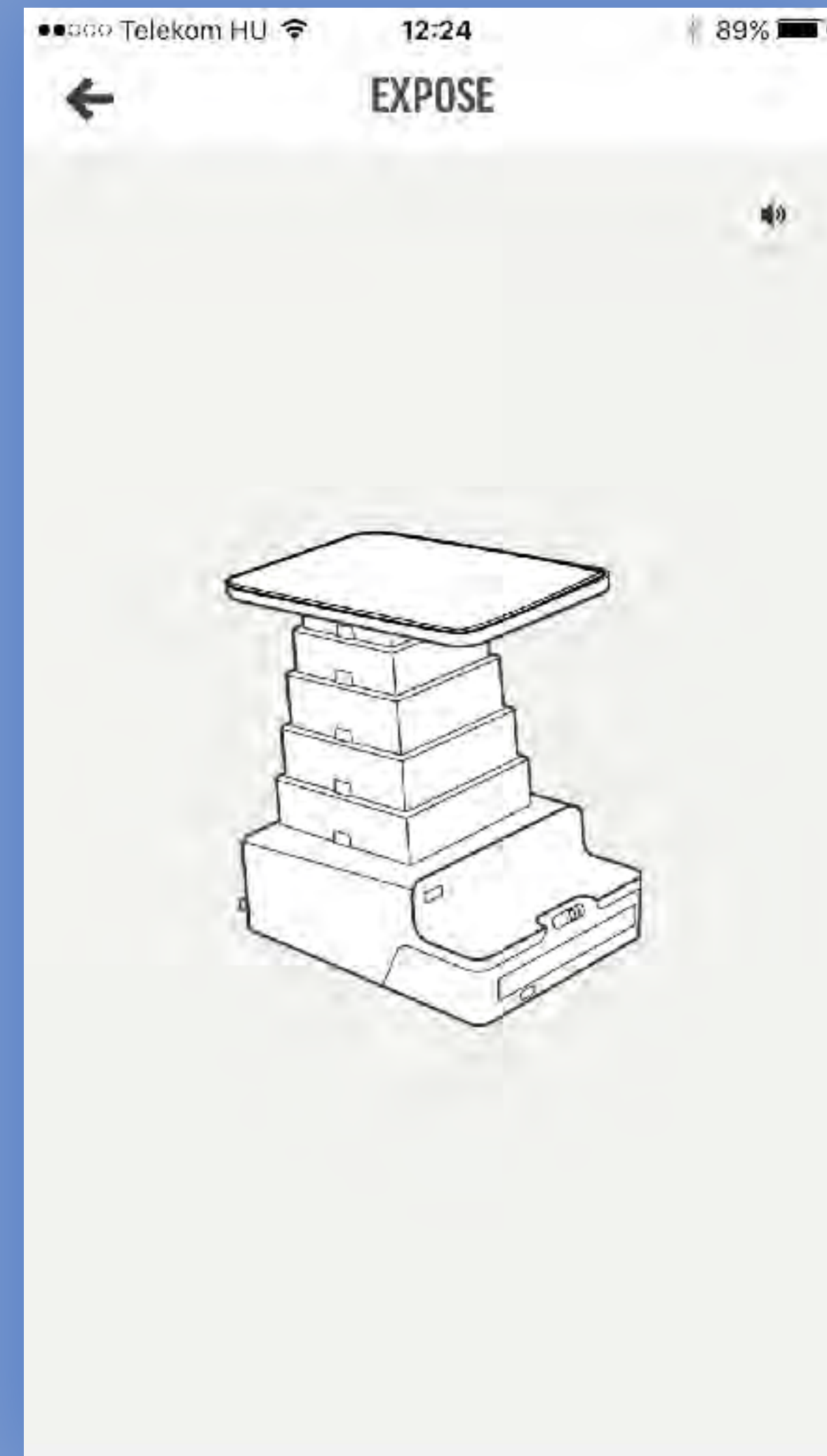


“Ecosystem” Onboarding

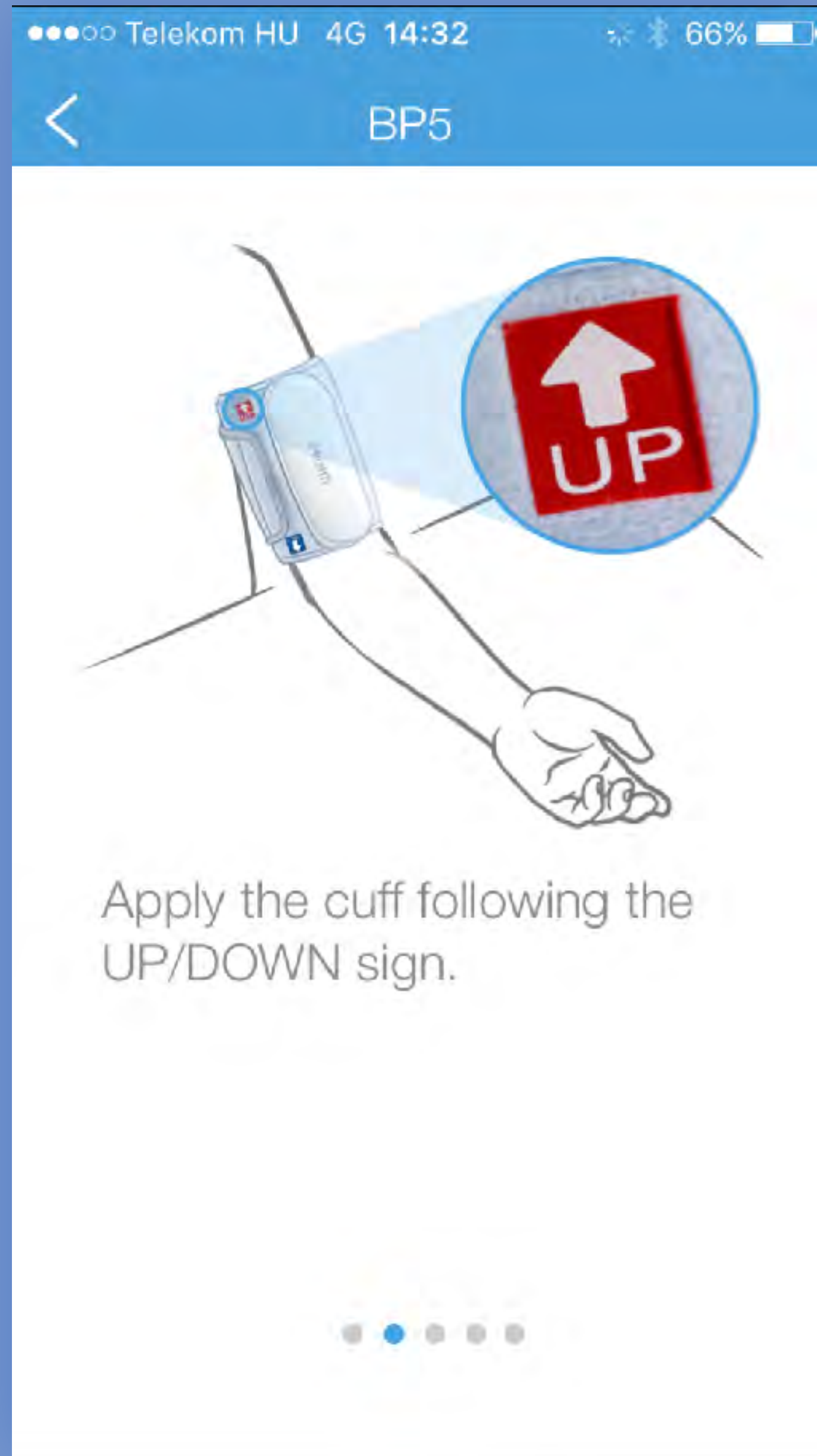
Instant Lab Onboarding



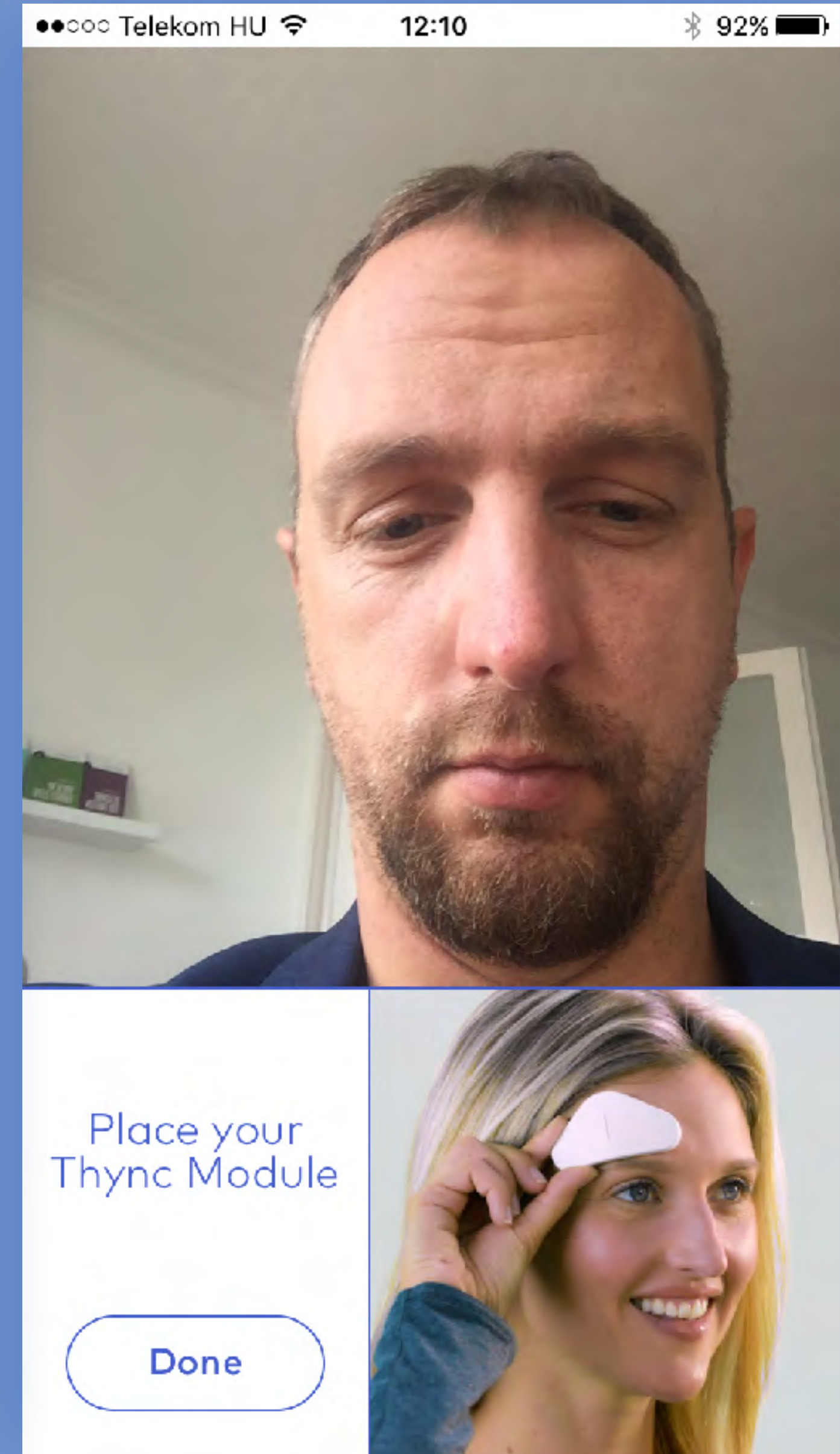
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iHealth Onboarding



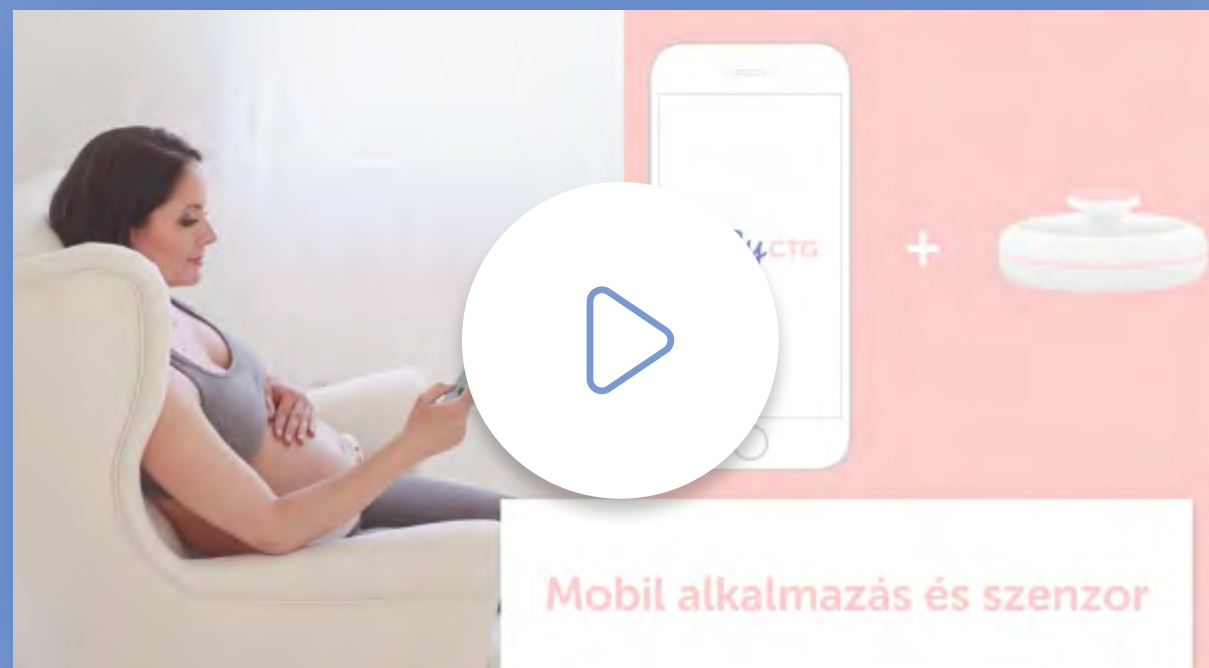
Thync Onboarding



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Onboarding is a must



1. It's not the hardware or the app —
you're probably designing a **SERVICE**

2. Test first, anything will do

3. The time factor — be prepared, create journey
maps, feedback, transitions

3. Design for Context —
go out there, learn, onboard



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