



Human-Centered Design:

Needs of people + possibilities of technology
= requirements for business success



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Do you skip the ad before a video?



广告剩余 48 秒

静音

开通会员免广告

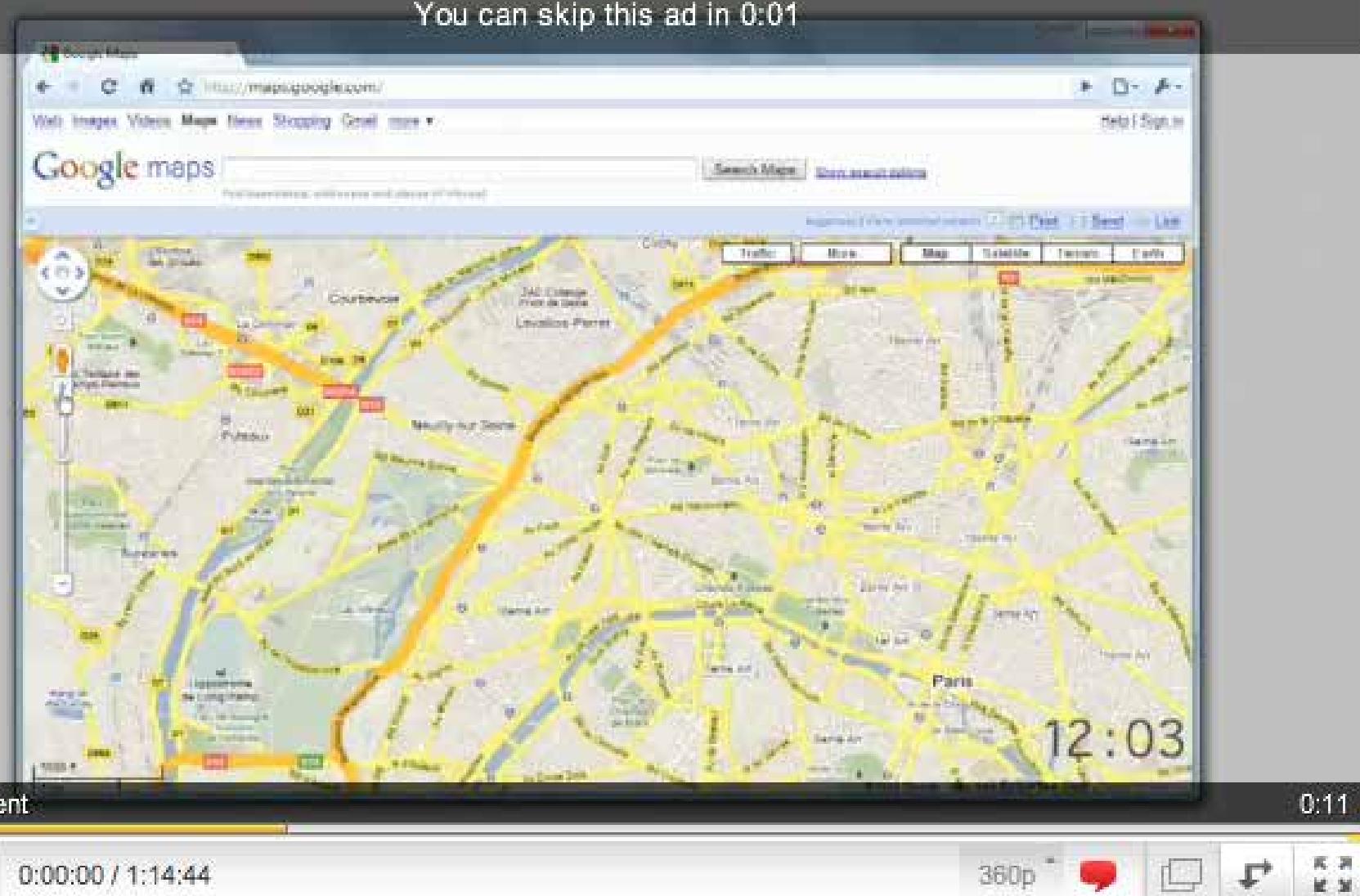
Really? Are you kidding me? ý



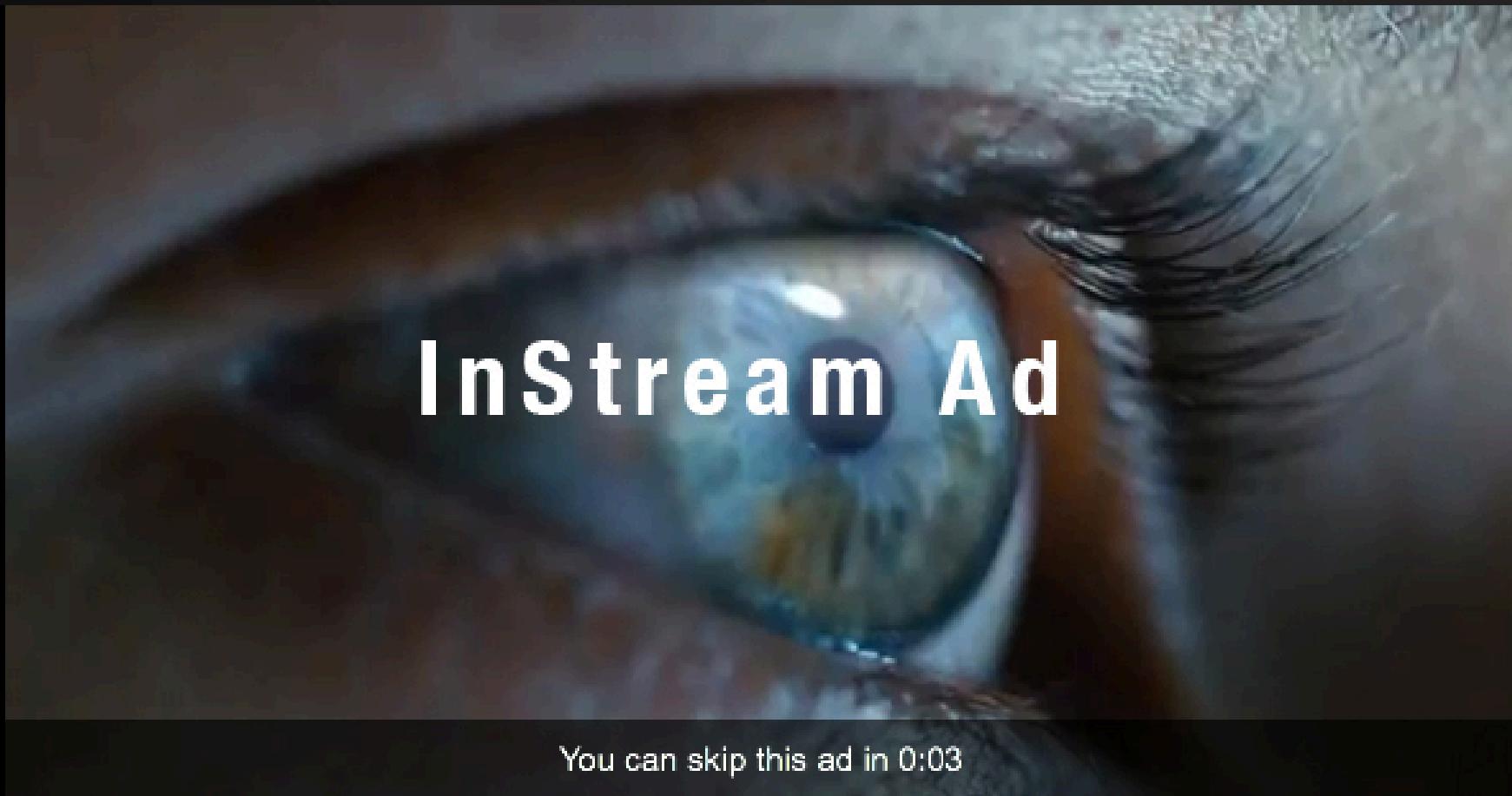
详细了解



Evolution of “Skip Ad” Design



Evolution of “Skip Ad” Design



Advertisement

0:30



0:00 / 4:16

360p



Evolution of “Skip Ad” Design



Have you ever click on the ad by mistake?



Advertisement (0:22)

00:00 11:35

⚙️ ⏹ ⏸ ⏹ ⏹

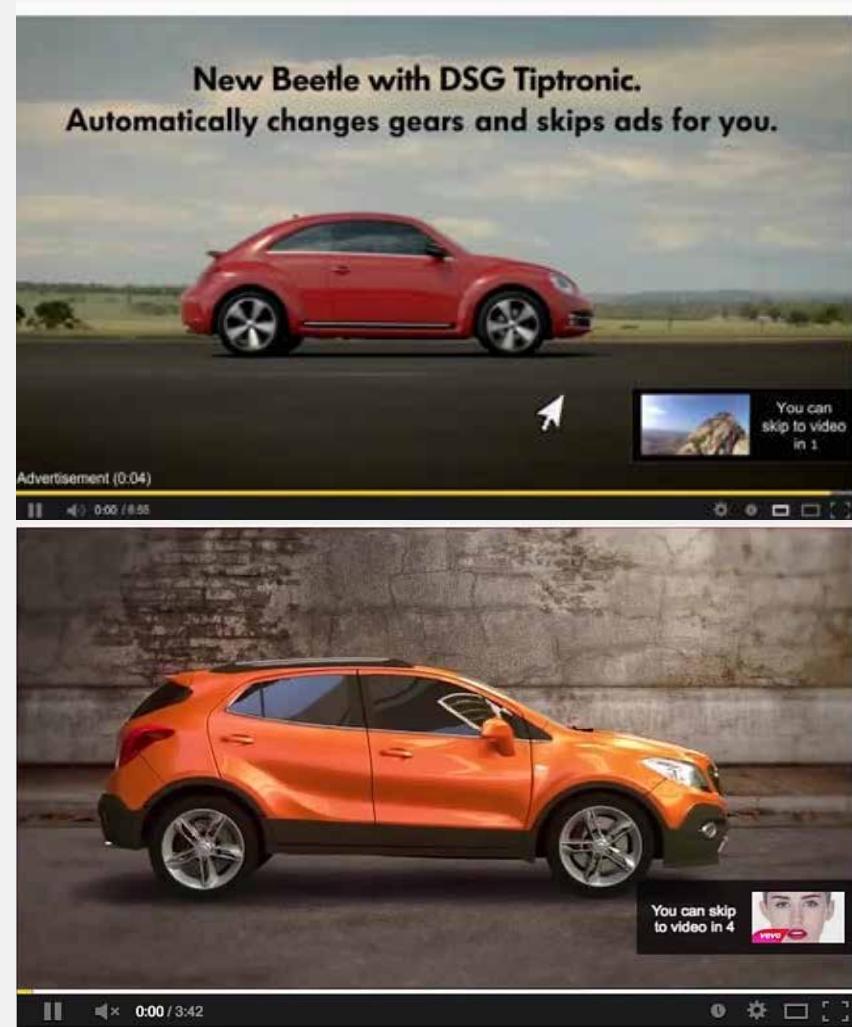
The only thing that people watch is the

Skip Ad ►



Convey the key message in 5 seconds...

Utilize the most eye-catching element...



OPEL MOKKA.

SKIPTEST



Wir lieben Autos.

WHEN WAS THE LAST TIME YOU ACTUALLY WATCHED A PRE-ROLL AD ON YOUTUBE?

The truth is, the only thing people watch
is the skip button — to see how many seconds
they have to wait...

OVER 70%
SKIP ADS

So we used that to show how Opel Mokka's features help you
with the things you can't avoid — like pre-roll ads.



WE CREATED a series of pre-rolls where the
car interacts with the 'Skip' button as if it were a real obstacle on
the road: driving over, swerving around, and even crashing into it.



COULD YOU AVOID THAT?



#1
4X4
TEST.

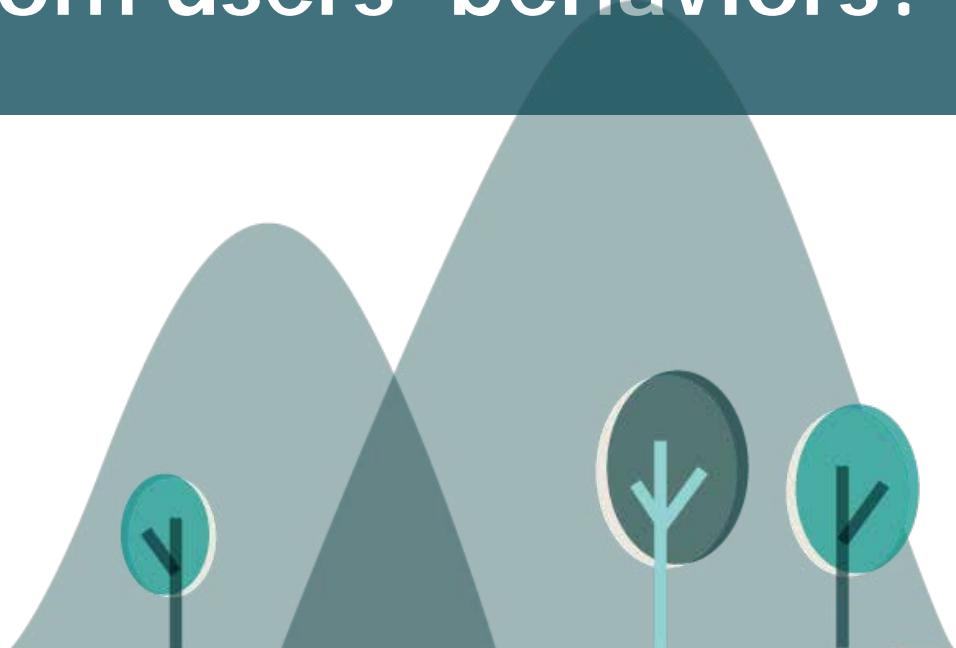


#2
ADAPTIVE
LIGHTING
TEST.



#3
SAFETY
TEST.

How different is your (a designer's) interpretation from users' behaviors?





What Makes a Game Changer?



Cool Technology that Redefines Computing!







“Nobody inherently needed a Segway.”

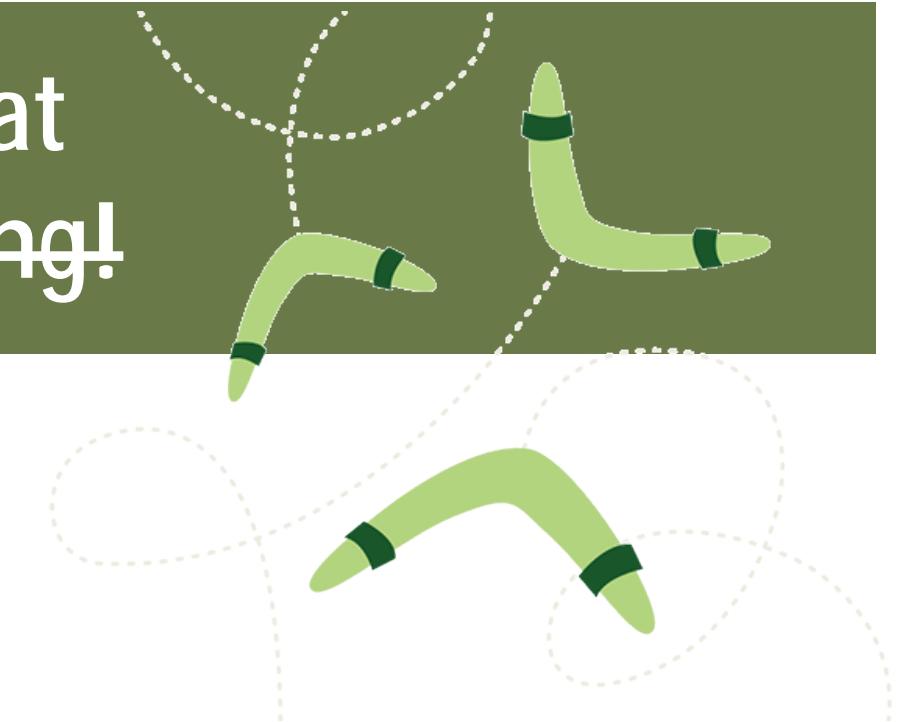


“There wasn’t any one thing Glass did so well that some segment of folks said ‘I have to have Glass.’”

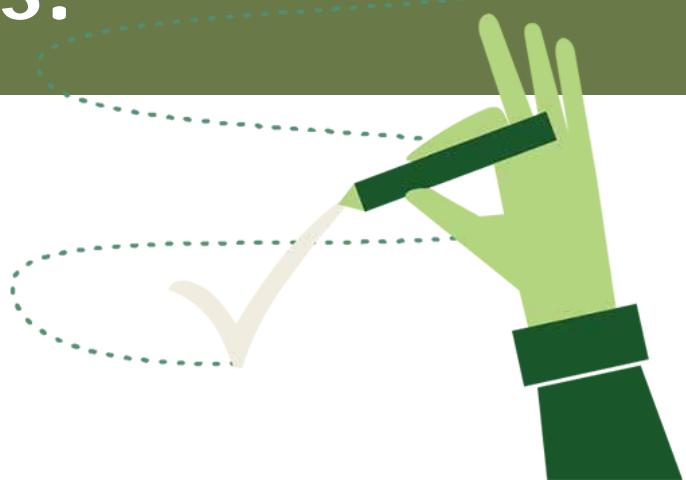


“Another smartphone wasn’t needed – unless it fulfilled the unmet needs of some select market so well...”

Cool Technology that Redefines Computing!



Cool Technology that Fulfills the Unmet Needs!





NO 1

INSTANT MESSAGING
APP IN CHINA



468
MILLION

ACTIVE USERS
WORLDWIDE



WhatsApp

NO 1

INSTANT MESSAGING
APP IN THE US



700
MILLION

ACTIVE USERS
WORLDWIDE



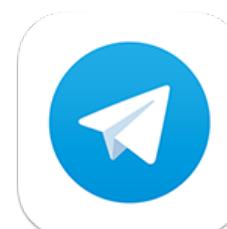
WeChat



WhatsApp



QQ



Telegram



BBM



Kakao Talk



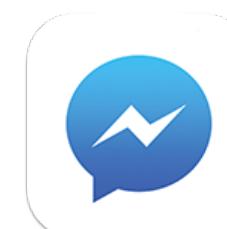
Hike



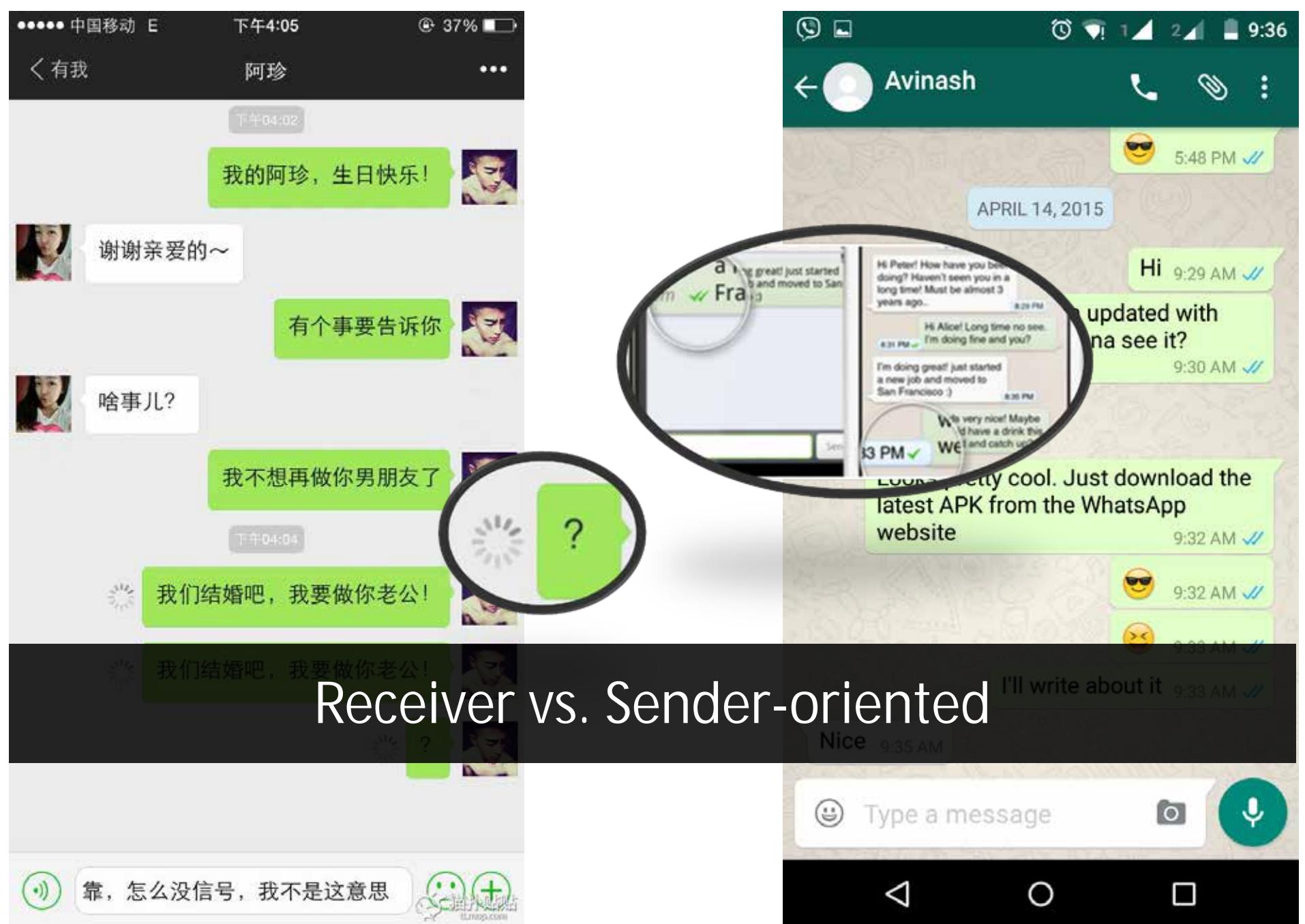
LINE



imo

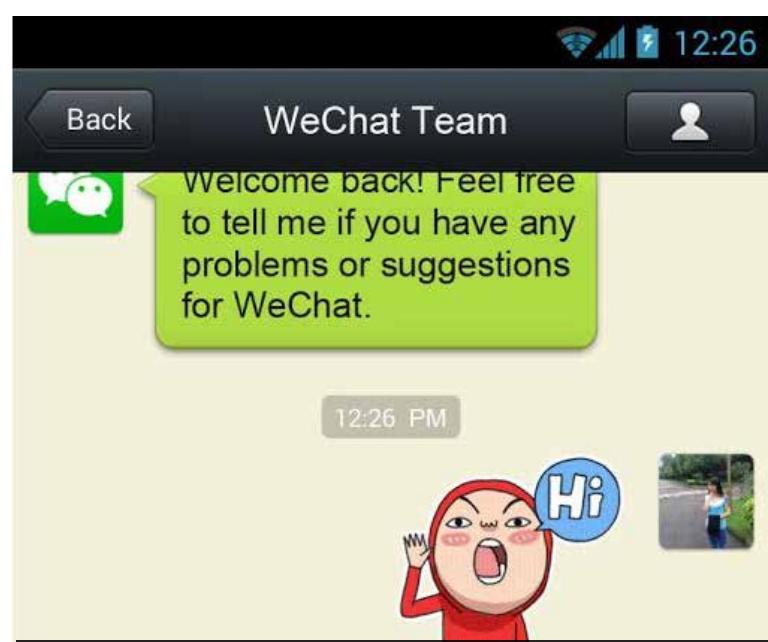


Messenger

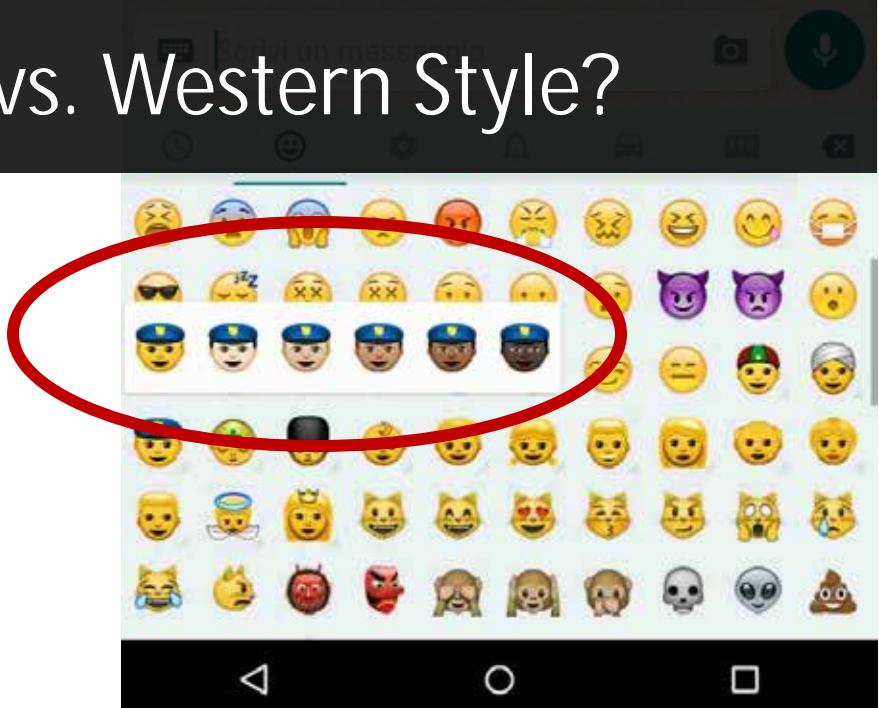
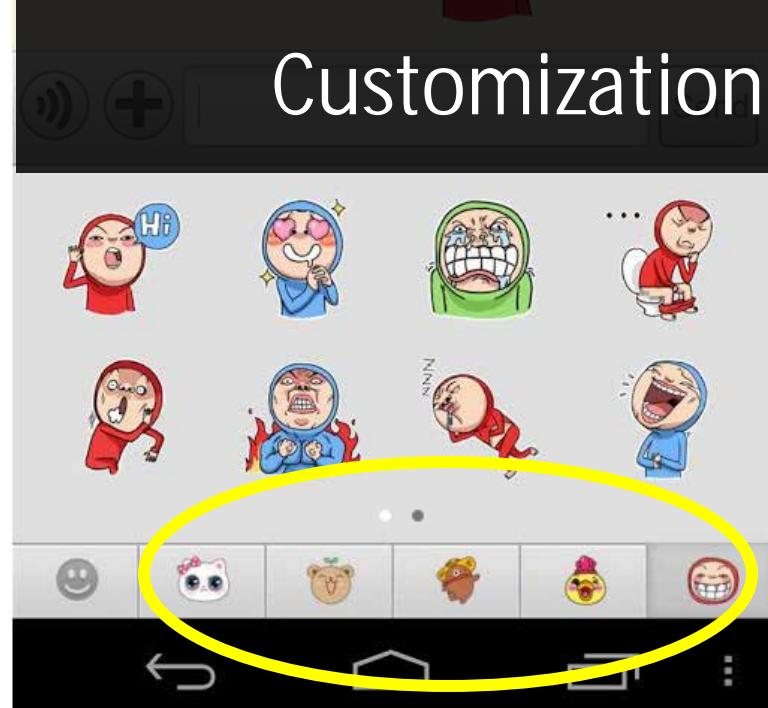


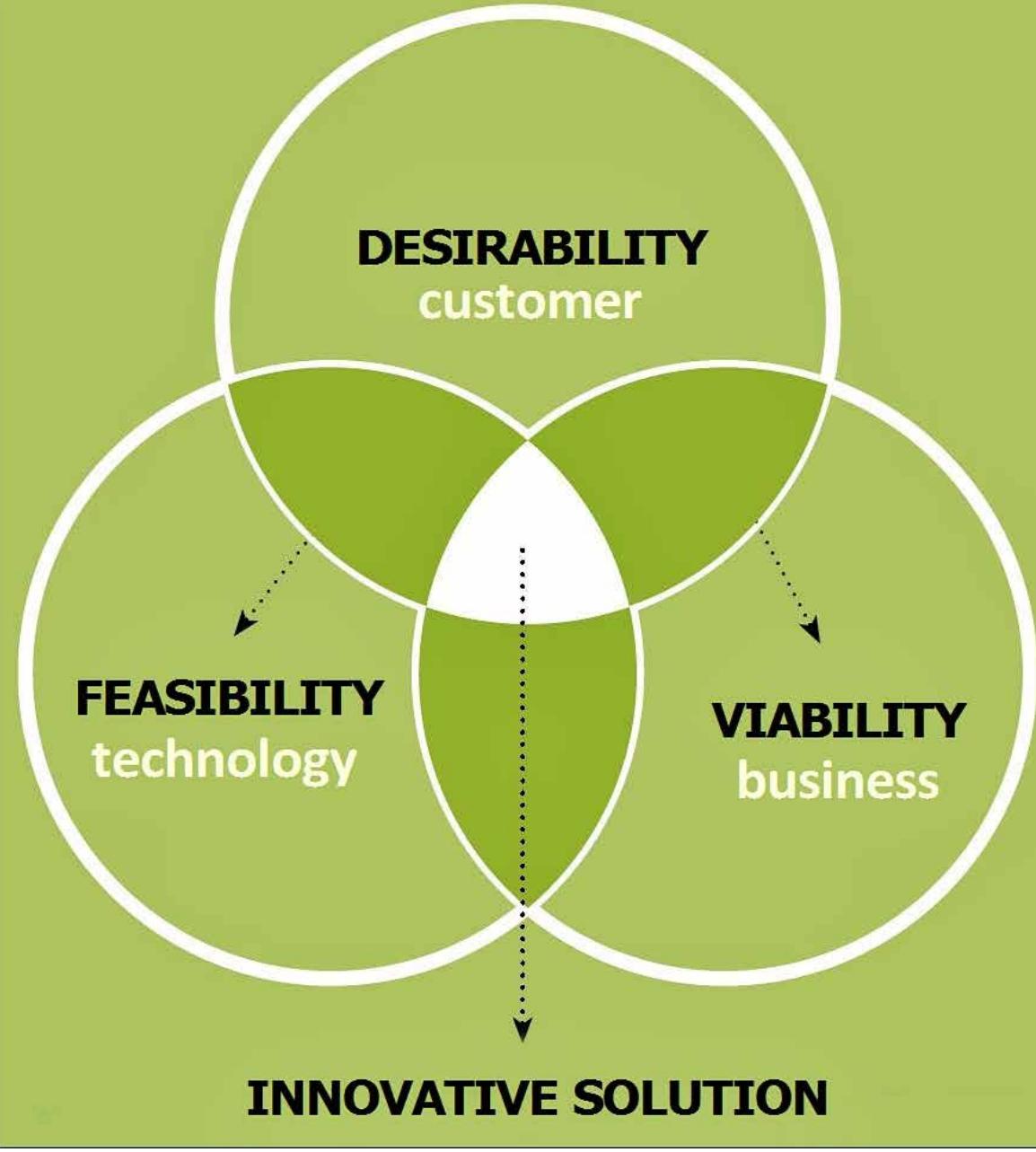


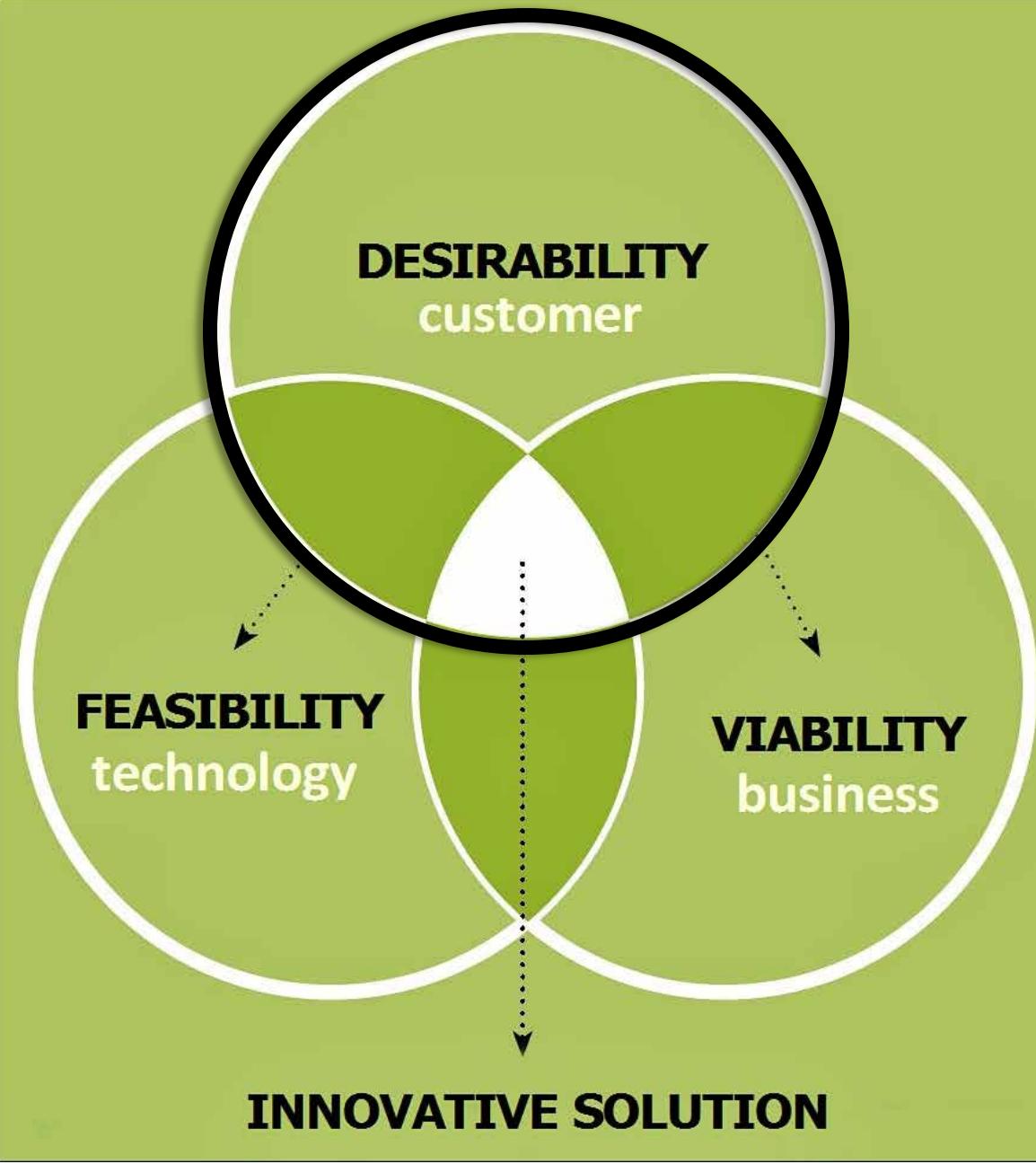
Fixed path vs. Adaptivity



Customization: Asian vs. Western Style?







Human-Centered Design



What is Human/User-Centered Design?

INSPIRATION

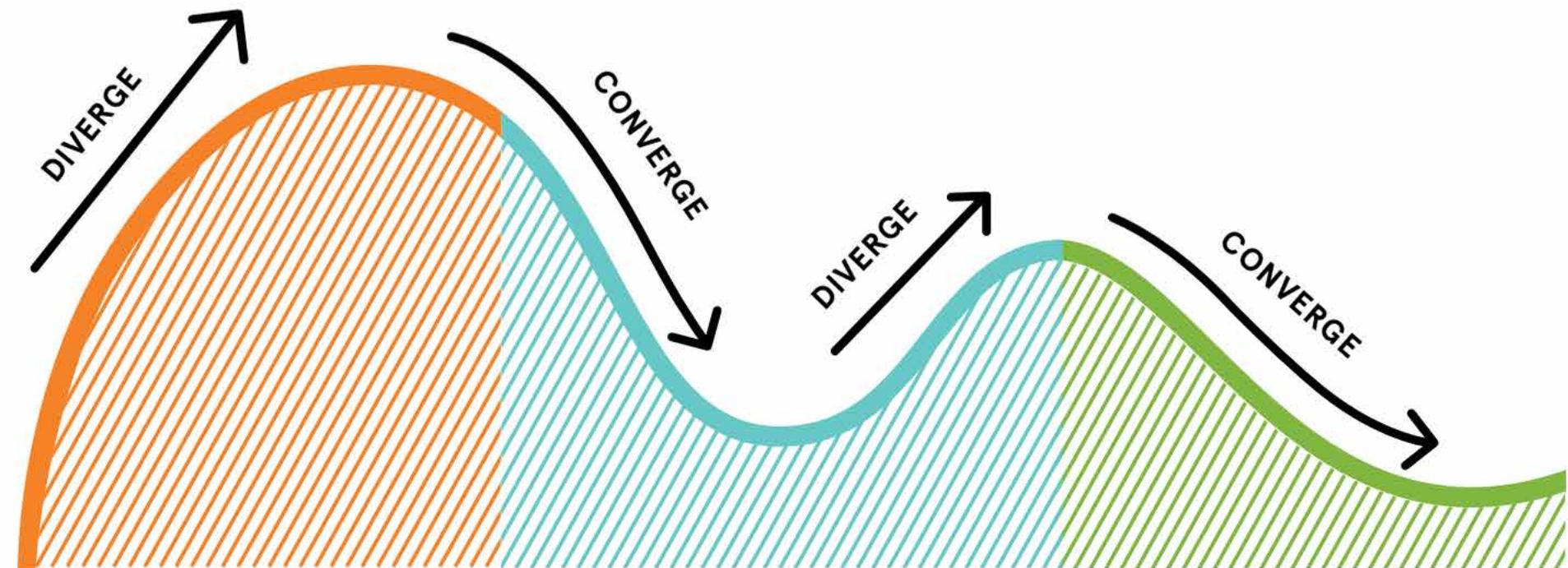
I have a design challenge.
How do I get started?
How do I conduct an interview?
How do I stay human-centered?

IDEATION

I have an opportunity for design.
How do I interpret what I've learned?
How do I turn my insights into tangible ideas?
How do I make a prototype?

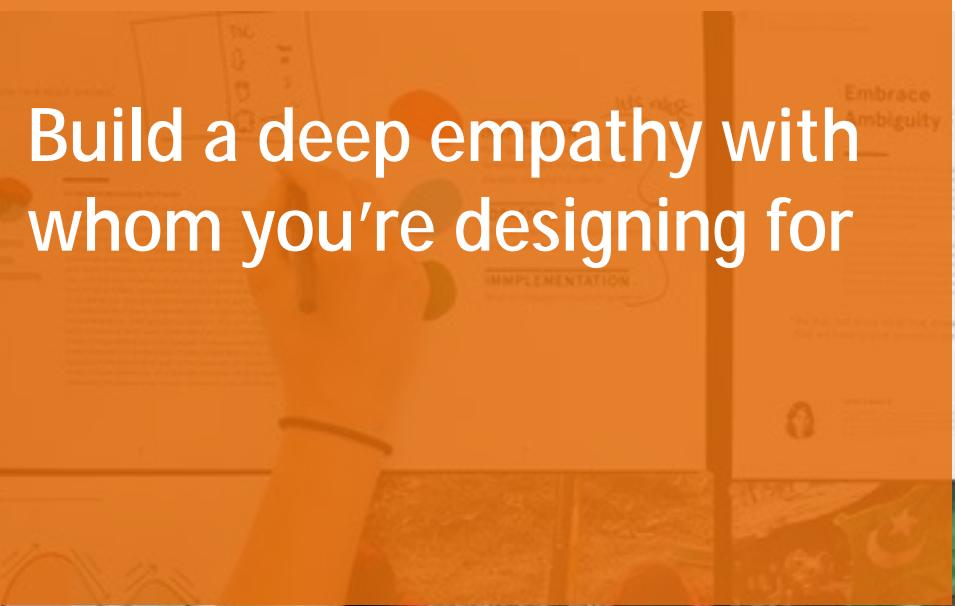
IMPLEMENTATION

I have an innovative solution.
How do I make my concept real?
How do I assess if it's working?
How do I plan for sustainability?





Build a deep empathy with whom you're designing for





Build a deep empathy with whom you're designing for

Generate tons of ideas and a bunch of prototypes

Human-Centred Design creates impact by achieving three things.

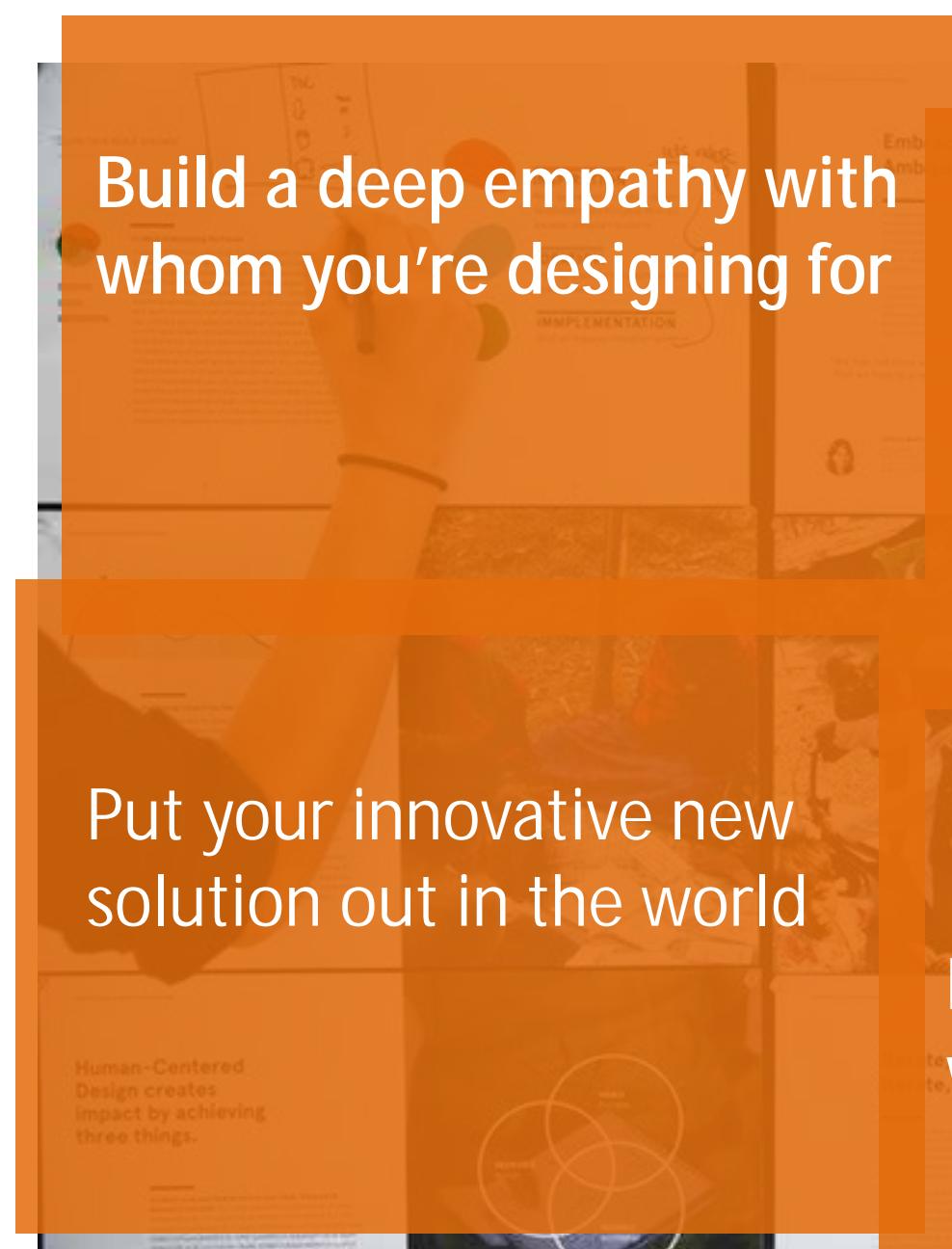
Empathy
Implementation
Optimism

Iterate, Iterate, Iterate

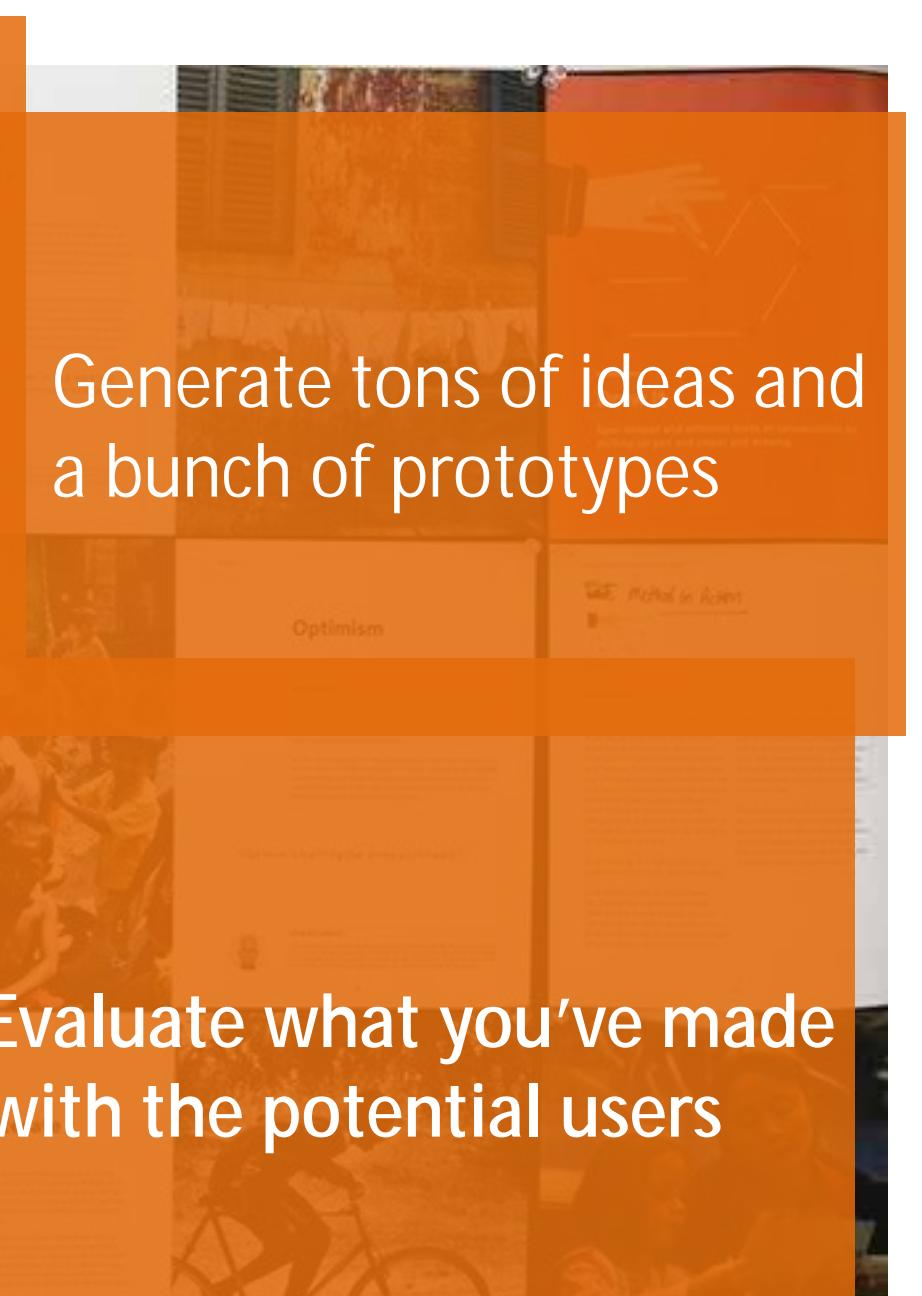
Build a deep empathy with whom you're designing for

Generate tons of ideas and
a bunch of prototypes

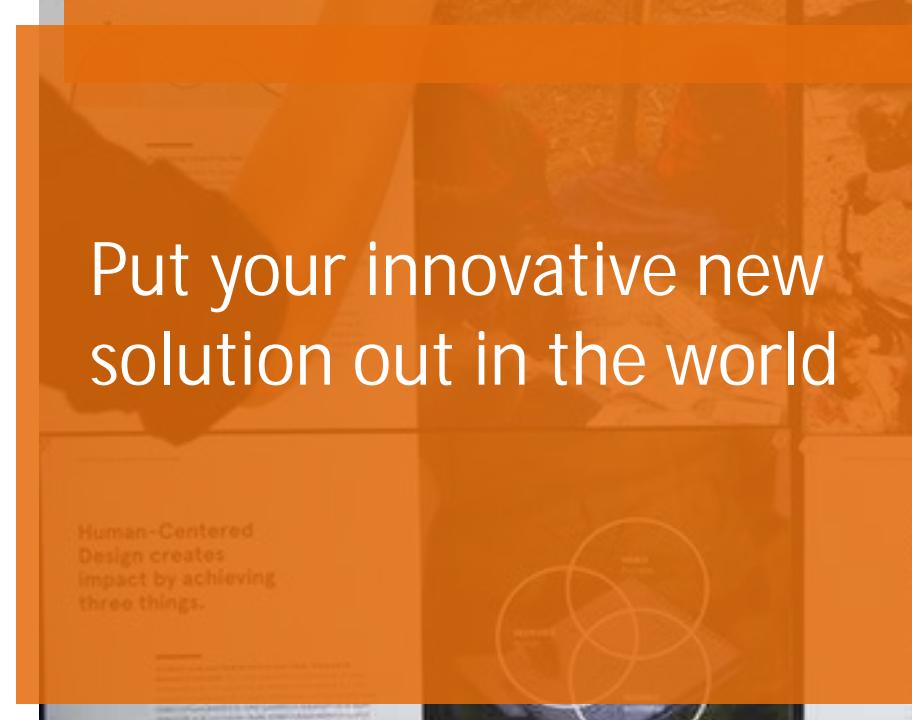
Evaluate what you've made with the potential users



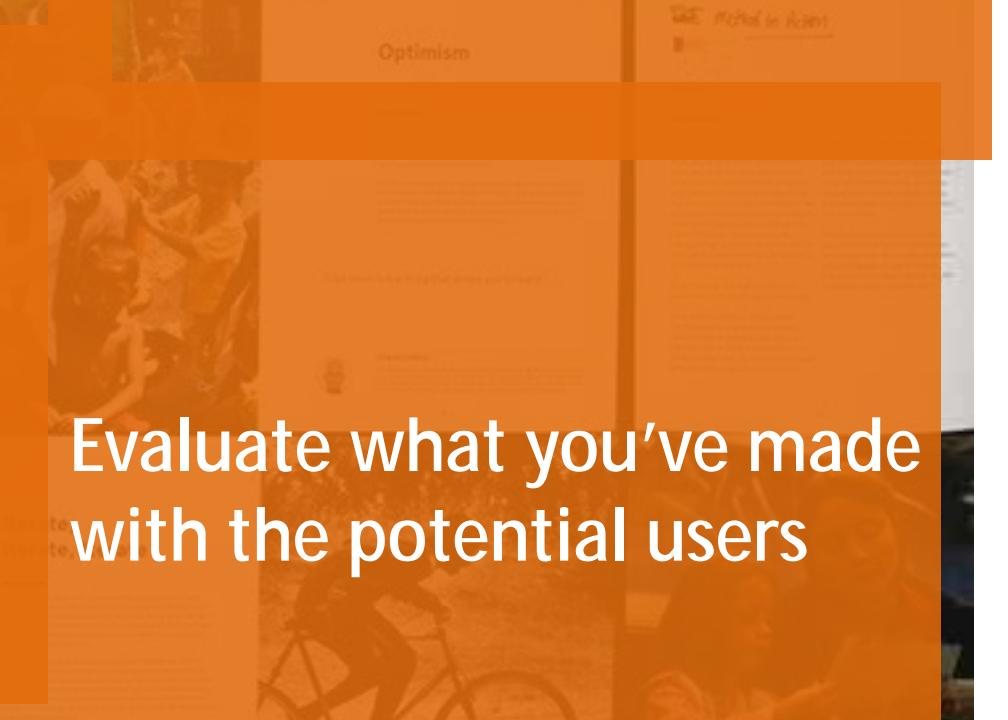
Build a deep empathy with whom you're designing for



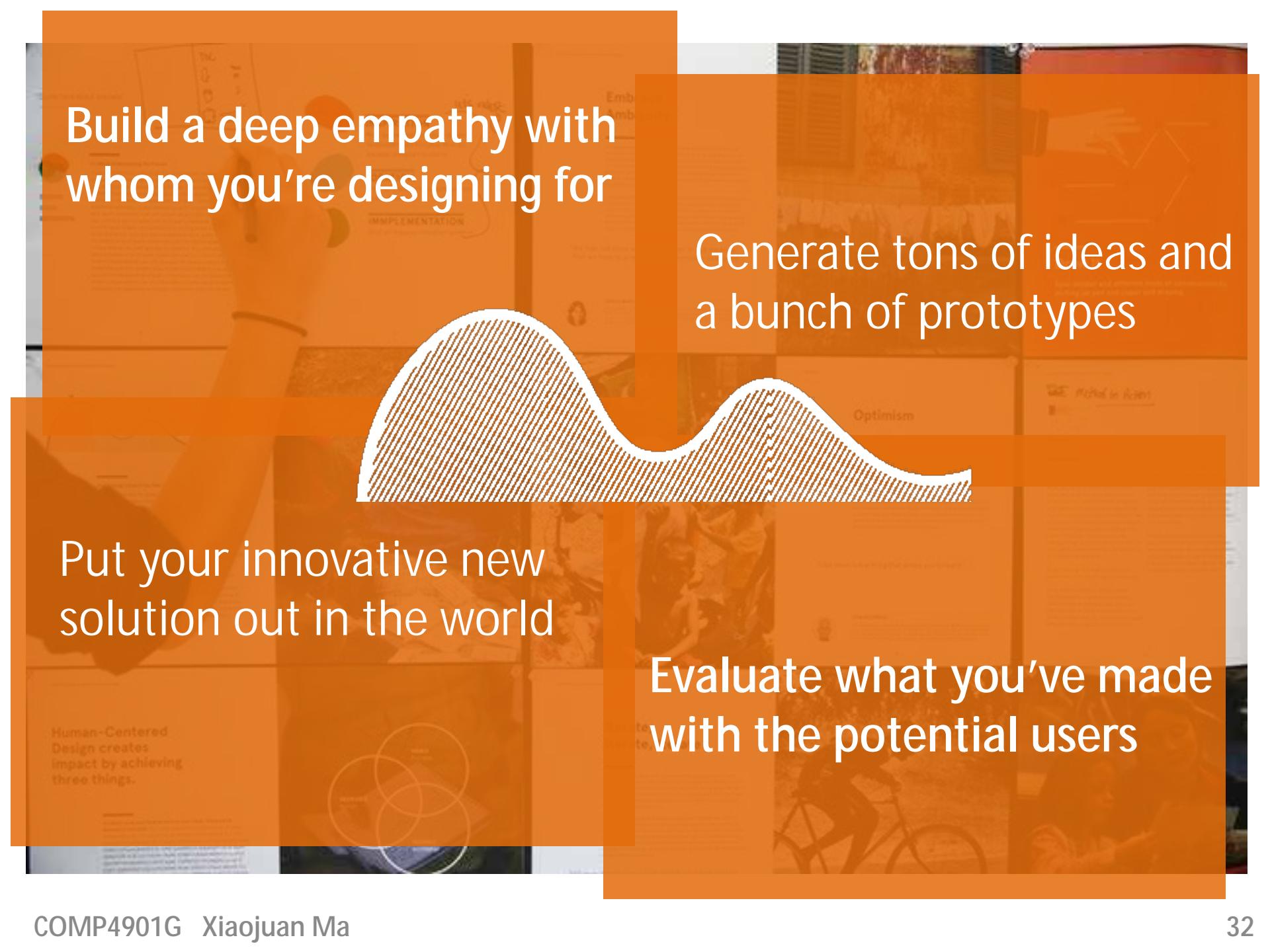
Generate tons of ideas and a bunch of prototypes



Put your innovative new solution out in the world



Evaluate what you've made with the potential users



Build a deep empathy with whom you're designing for

Generate tons of ideas and a bunch of prototypes

Put your innovative new solution out in the world

Evaluate what you've made with the potential users

Empathetic Design



What becomes unusable for a mom-to-be



Design a new scale for mom-to-be



Design a new scale for mom-to-be



"All I need is my Husband."

gettyimages
Chris Ryan

Understand Humans



x



Demographics



Age, Gender, Education, Profession, Race, Culture, Language, Health, Financial Status, Social Status, etc.

Motivation, Ability, Behavior



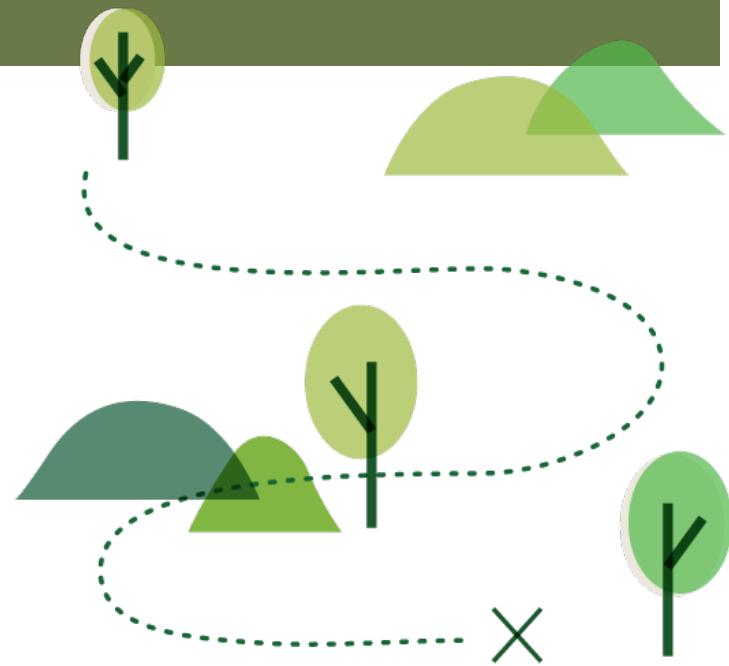
Physical and Mental Capabilities and Constraints, Habit and Hobby, Personality, Social Network, etc.

Need, Want, Like



Past, Present, and Future Experiences

Define Design Problem



How to treat over-stressed physicians?

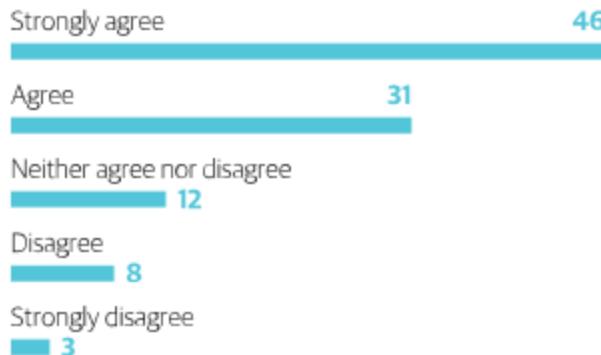


Is it a problem?



Overworked

I have to work beyond my hours to keep up with my workload, %

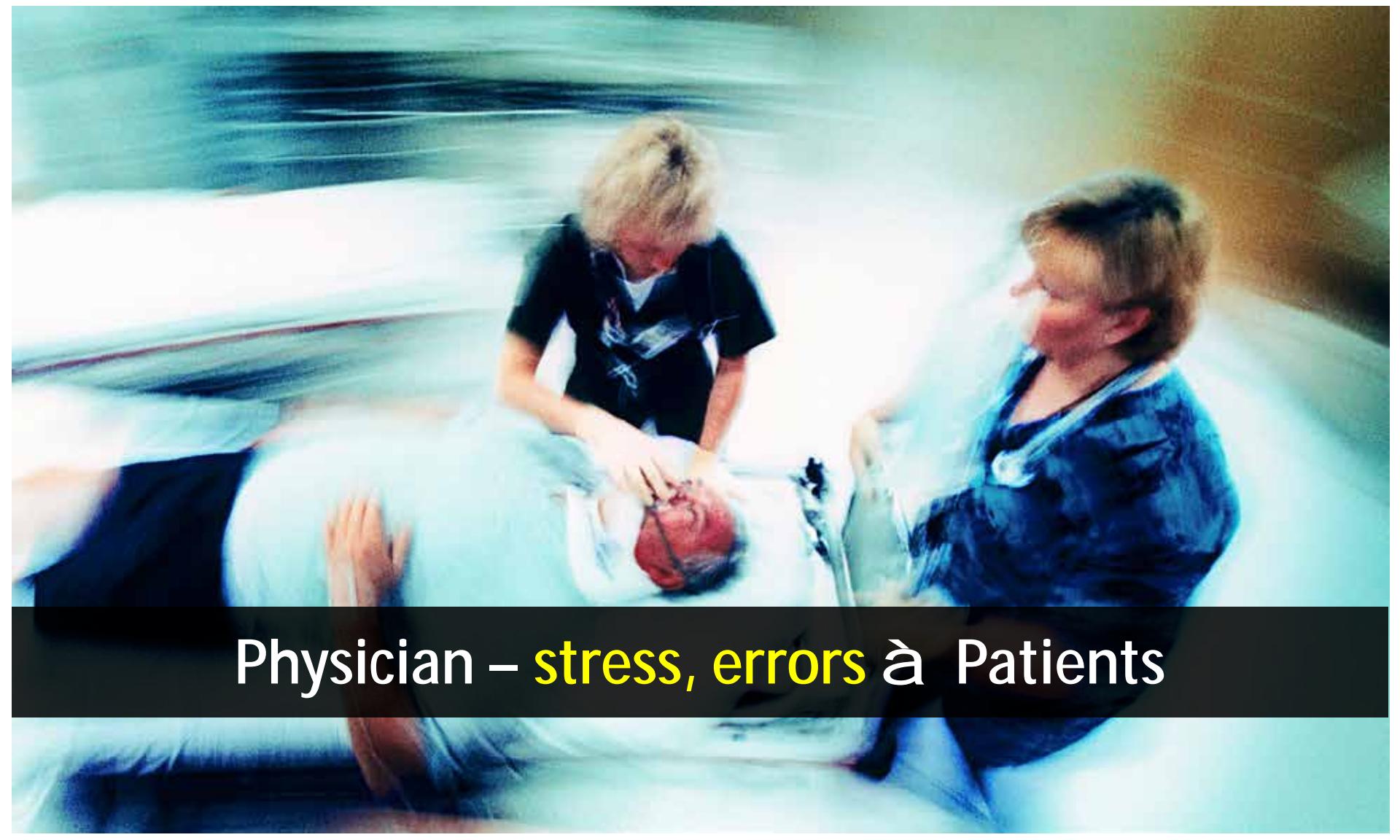


Work stress

How often, if at all, do you ever feel stress in relation to your job? %



Why is it a problem?

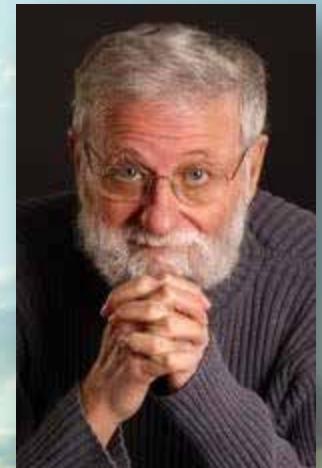


Physician – stress, errors à Patients

What are the current solutions?

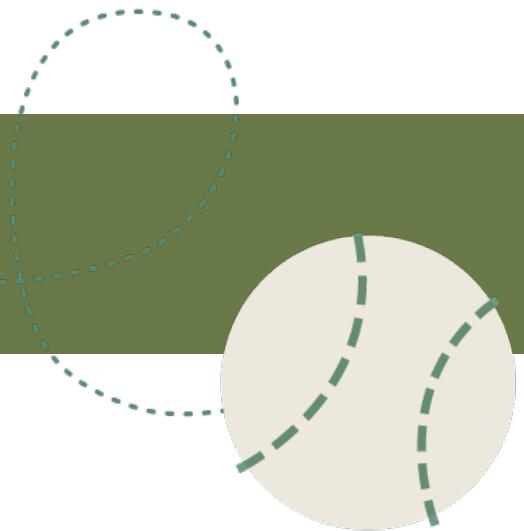


What is the proposed solution?



But...

Is it the right problem?



What actually makes physicians stressed?



It is how a hospital/clinic/ER operates!

What is the actual problem then?



How to improve the hospital operational process?

Techniques to Identify Actual Needs



Ethnographic Methods



Immersion

Observation



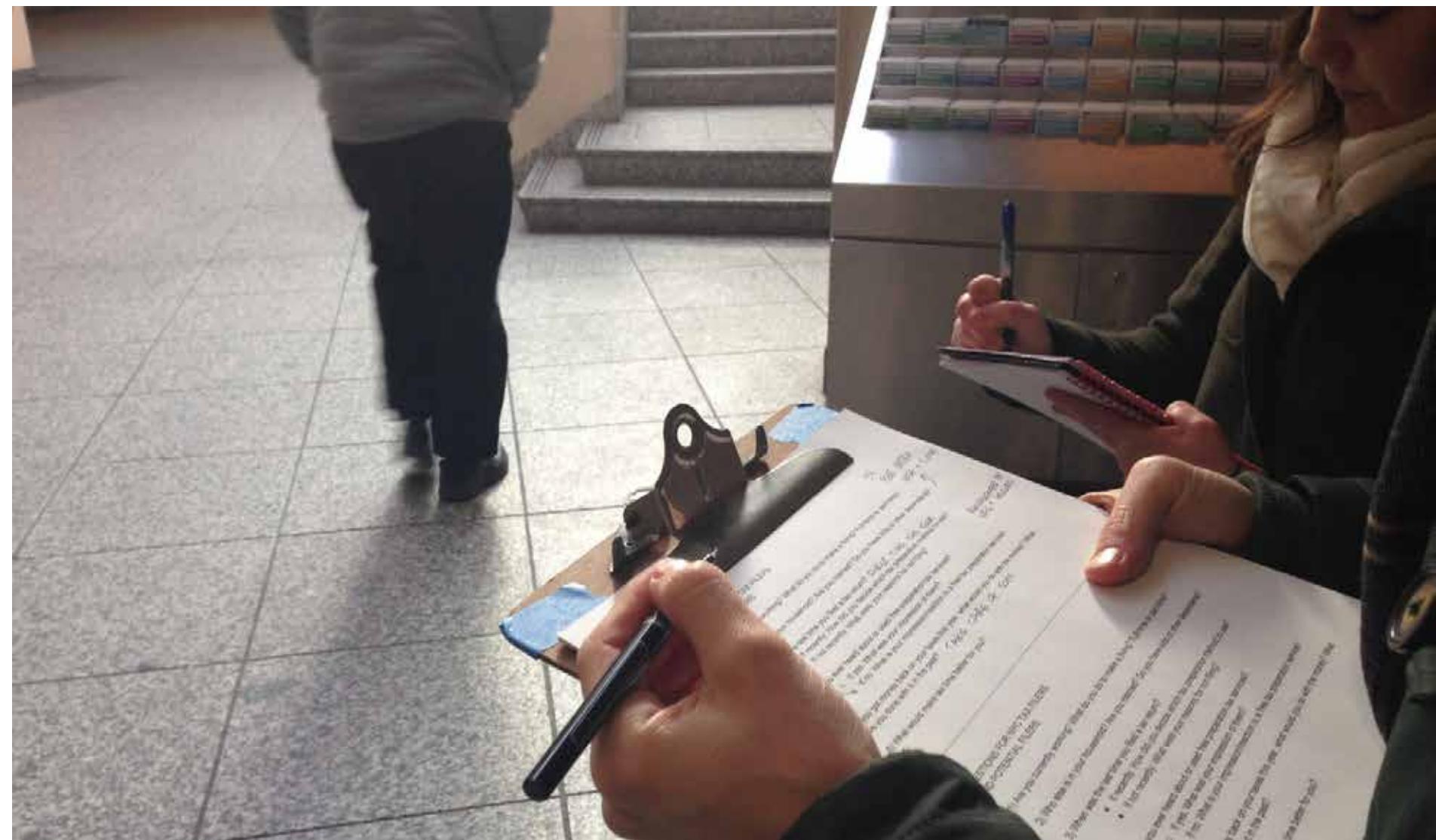
Interview



Immersion



Observation / Shadowing



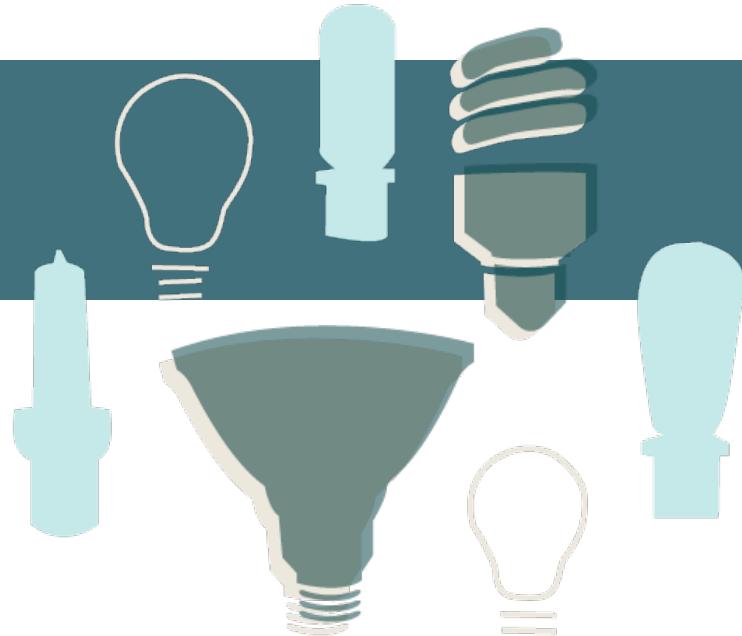
Interview



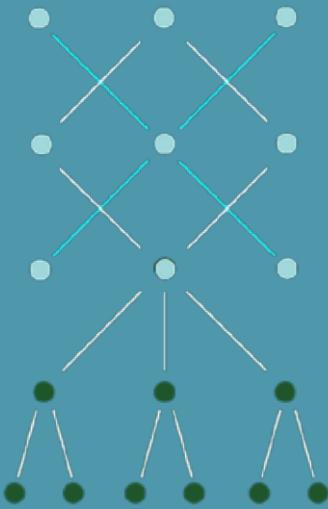
Find the Mainstreams and Extremes



Rapid Needfinding

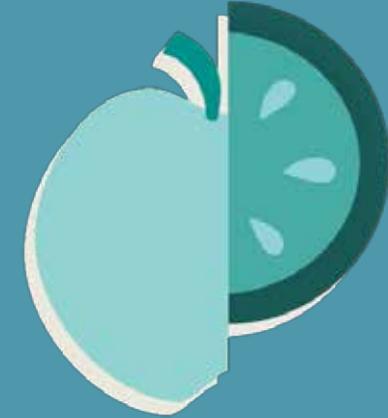


Define: Who, What, When, Where, Why



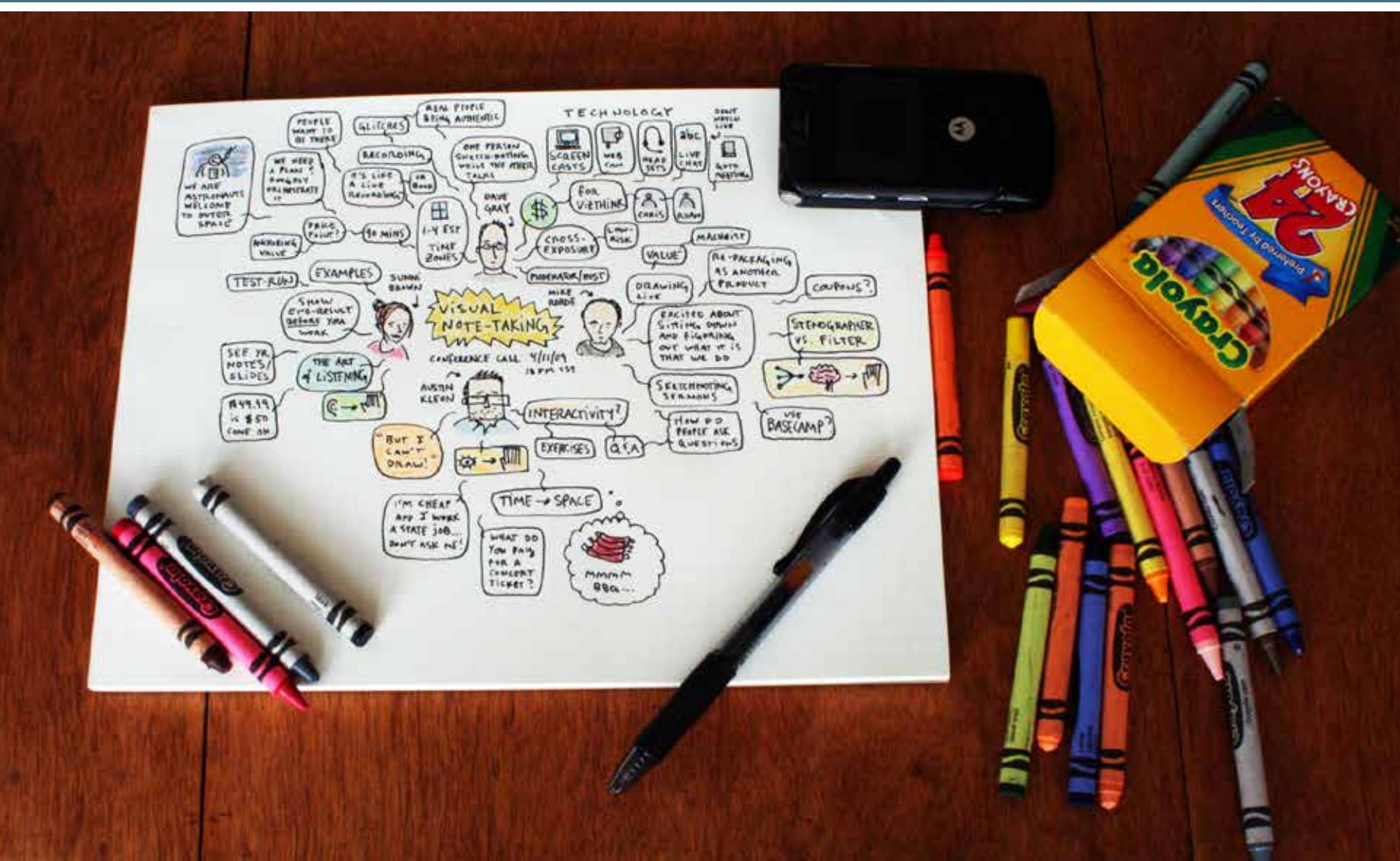
Mindmap

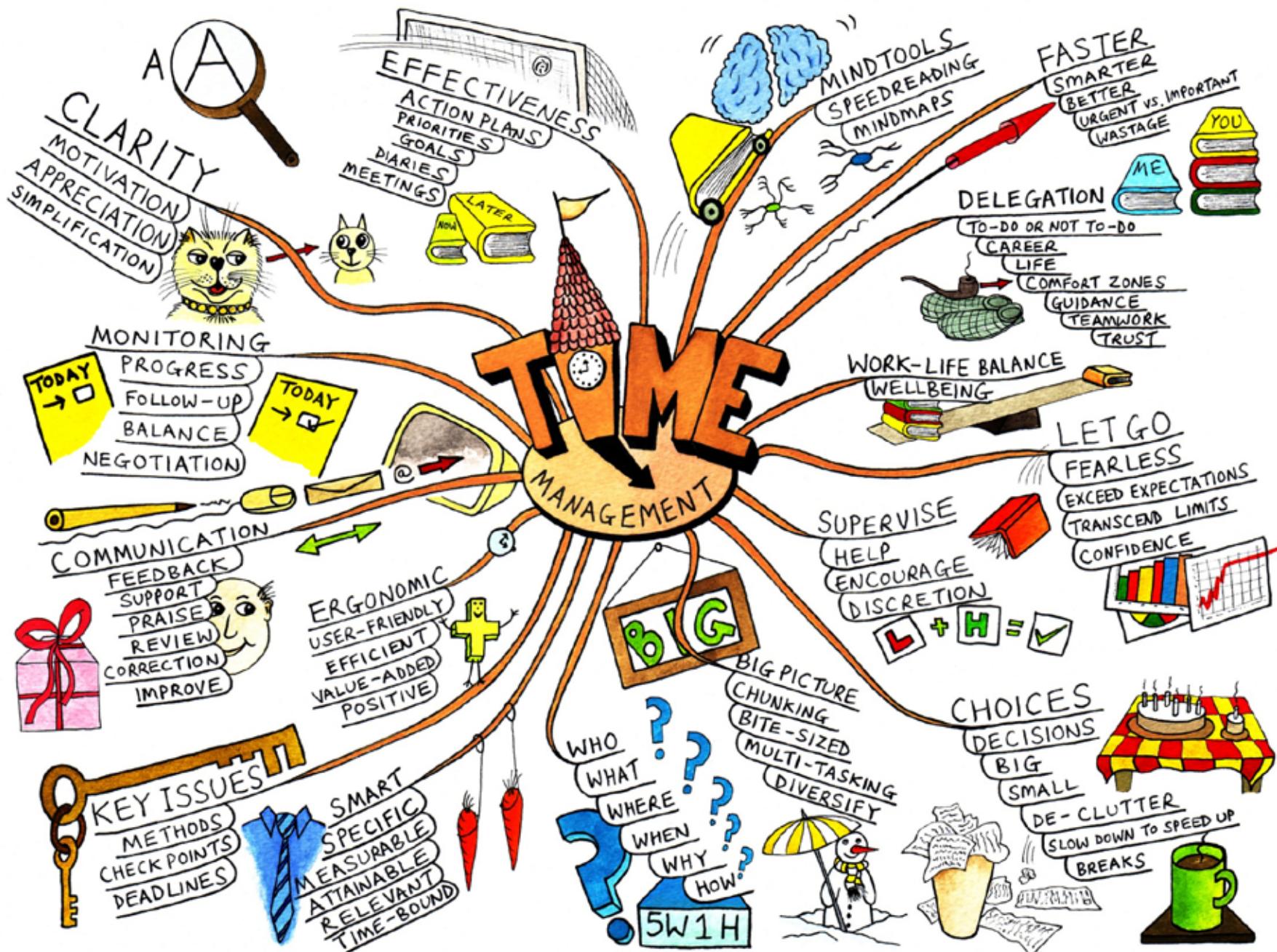
Brainstorm



Mash-up

Mind Mapping





Brainstorming



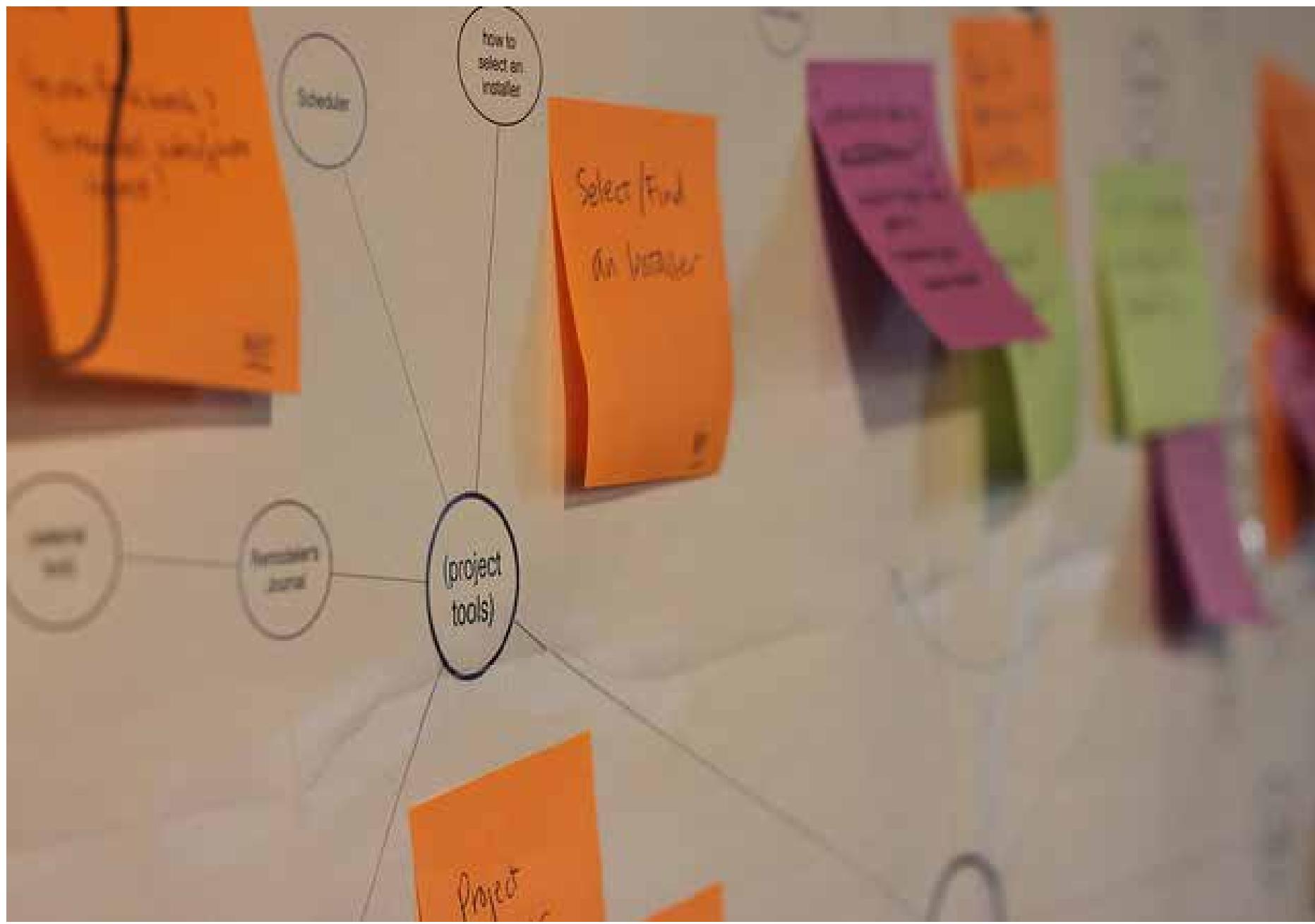
Knowledge



Association



Experience



Persons

Who are
you trying
to inspire?

Meet new people
Make connections.
Help people learn how to
use technology to create useful
innovative products + services.

Daniel
general purposes, work
with words and

My friends & I are making
music experiences - what's the
best way to bring the music
to smartphone users?

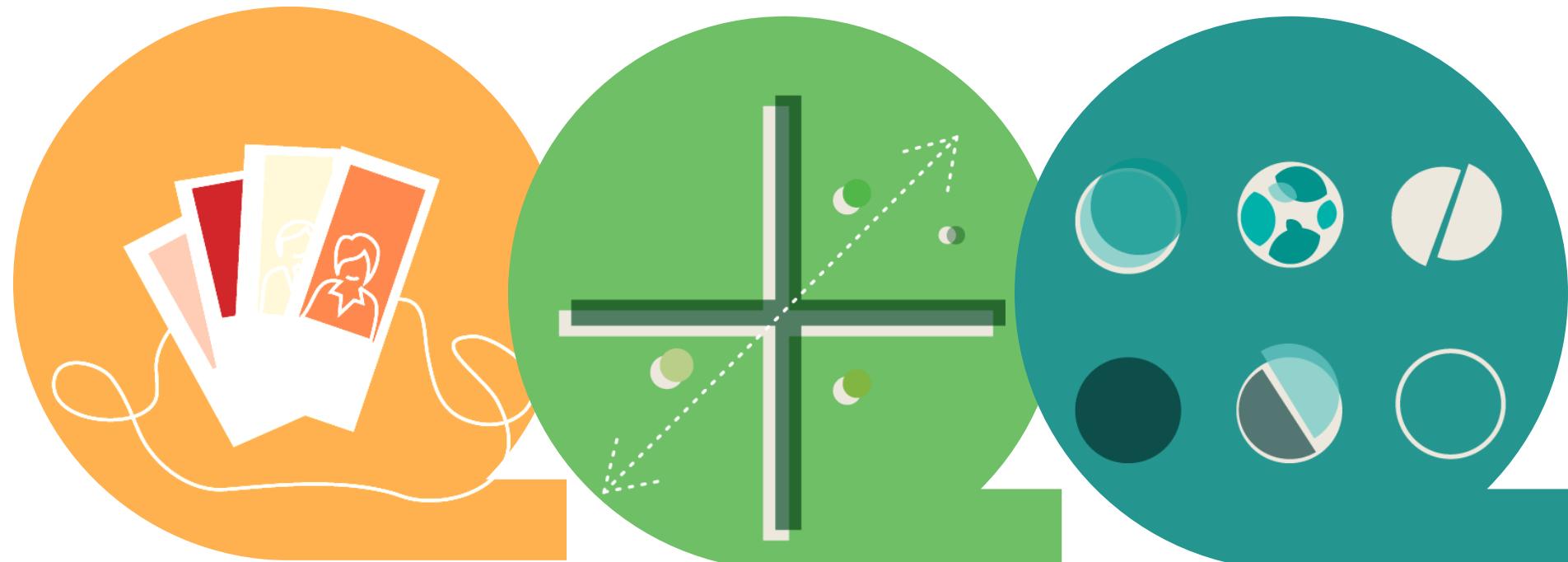
Point 3:
improve infrastructure and
conveniences for public transit
including regulation, stronger
transportation and transit
incentive programs

100

1. 1990
2. 1991

		to be at for people you
typical behavior	friendly open greet you	
"classmate"	friendly open greet you	
typical behavior	friendly open greet you	
typical behavior	friendly open greet you	

Mashing-Up



Build Personas

Define Scope

Integrate & Iterate

Mashing-Up



Build Personas Define Scope Integrate & Iterate

WHEN

WHERE

WHAT

WHO

How

WHY



Mindmap

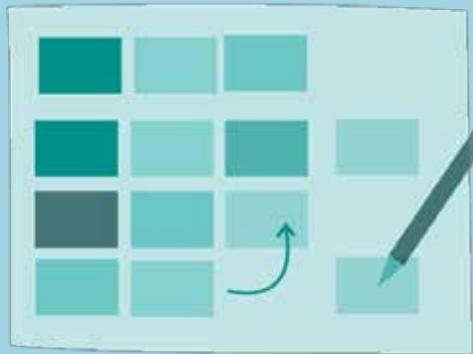


Brainstorm



Mash-up

Rapid Needfinding in Early Design Stage



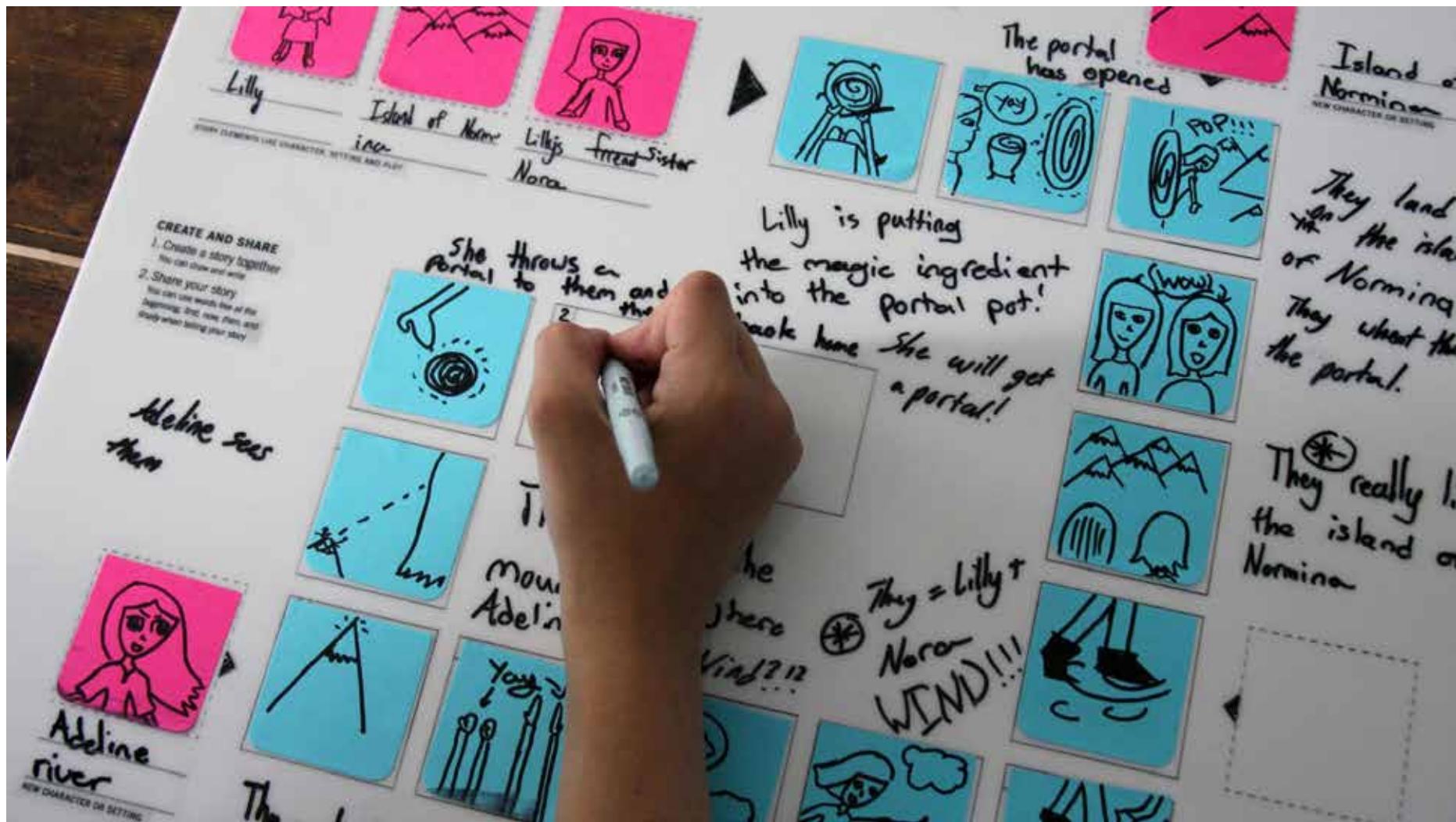
Storyboard

Speed Date



Role Play

Storyboarding



Truong, Khai N., Gillian R. Hayes, and Gregory D. Abowd. "Storyboarding: an empirical determination of best practices and effective guidelines." In Proceedings of the 6th conference on Designing Interactive systems, pp. 12-21. ACM, 2006.

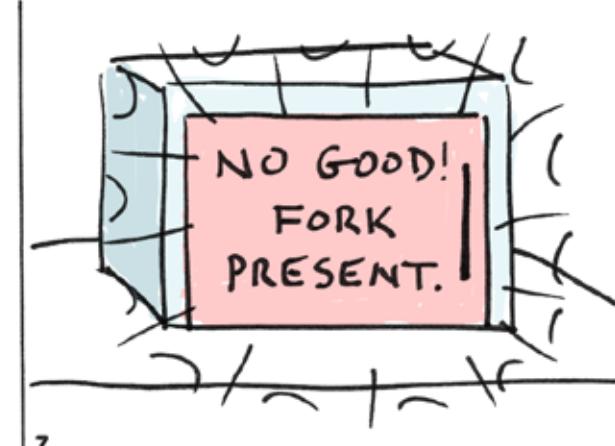
Design Idea

We wish to facilitate easier food recycling by creating a machine capable of scanning food waste and identifying non-compostable materials.

Storyboarding



John bought a new "Food Waste Scanner" which can detect if there is anything cannot be composted in the food waste.



He put in the food waste, and the scanner warned him that there was a fork inside.



He got the fork out and scanned the food waste again.



How he passed the test, and the food waste is dumped into the recycle bin that sits beneath the scanner.

Davidoff, Scott, Min Kyung Lee, Anind K. Dey, and John Zimmerman. Rapidly exploring application design through speed dating. Springer Berlin Heidelberg, 2007.

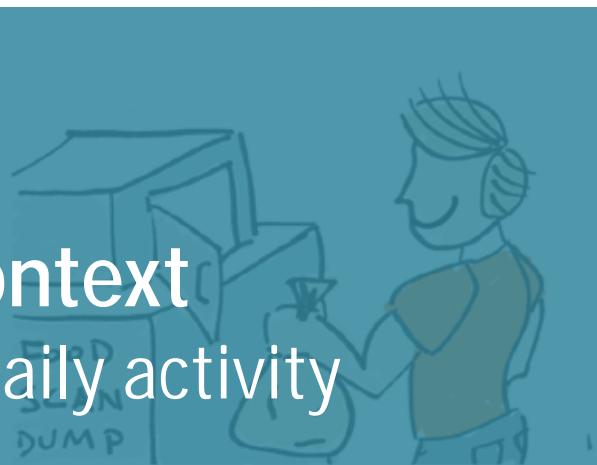
Design Idea

We wish to facilitate easier food recycling by creating a machine capable of scanning food waste and identifying non-compostable materials.

Storyboarding

Context

- Daily activity



John bought a new "Food Waste Scanner" which can detect if there is anything cannot be composted in the food waste.

Problem

- The need



He put in the food waste, and the scanner warned him that there was a fork inside.

Intervention

- Conceptual design



He got the fork out and scanned the food waste again.



How he passed the test, and the food waste is dumped into the recycle bin that sits beneath the scanner.

Outcome

- Improve QoL

Speed Dating: Need Validation



Show material
Present varieties



Warm up
Evoke Memories



Q & A
Focus on need

Davidoff, Scott, Min Kyung Lee, Anind K. Dey, and John Zimmerman. Rapidly exploring application design through speed dating. Springer Berlin Heidelberg, 2007.

Role Playing: User Enactment

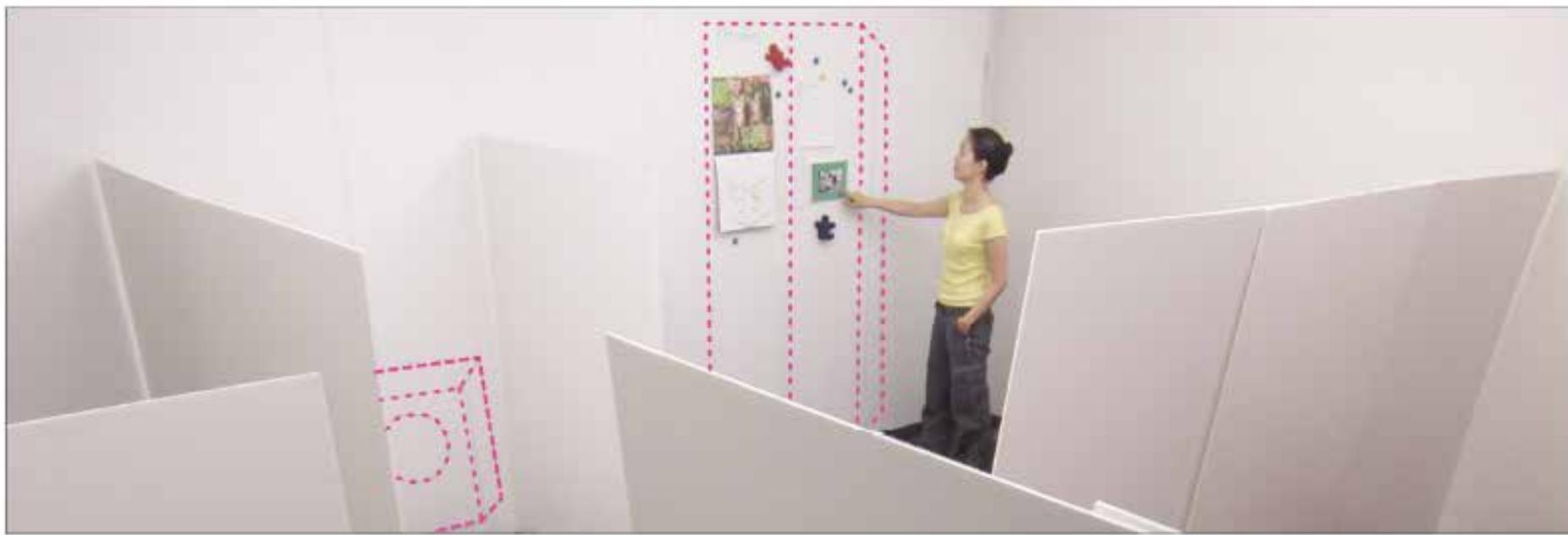


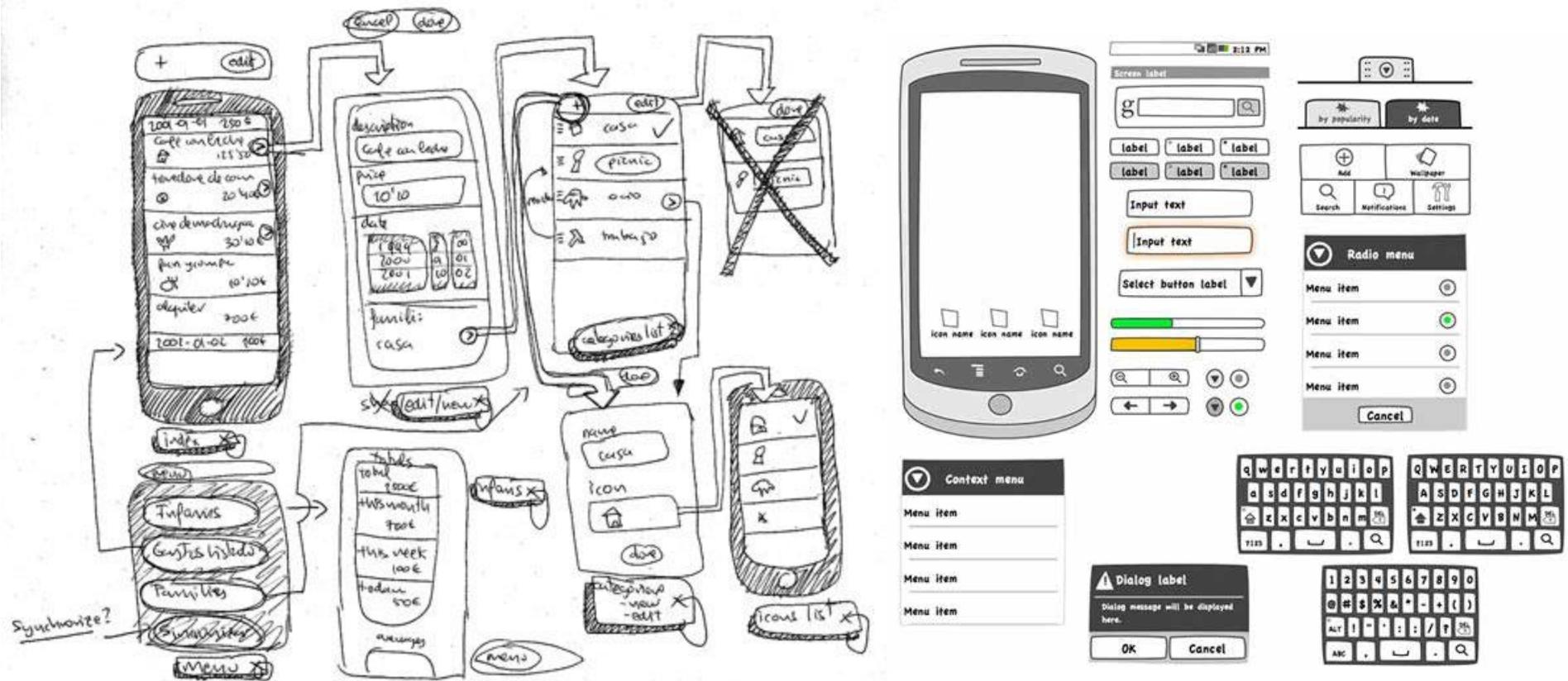
Fig. 3. Our simulated smart home for Speed Dating. Foam core walls organize the “smart home” prototype into rooms. The refrigerator and washer-dryer are drawn on a wall of whiteboard (emphasis added for photo). A confederate is shown interacting with the fridge.

Davidoff, Scott, Min Kyung Lee, Anind K. Dey, and John Zimmerman. Rapidly exploring application design through speed dating. Springer Berlin Heidelberg, 2007.

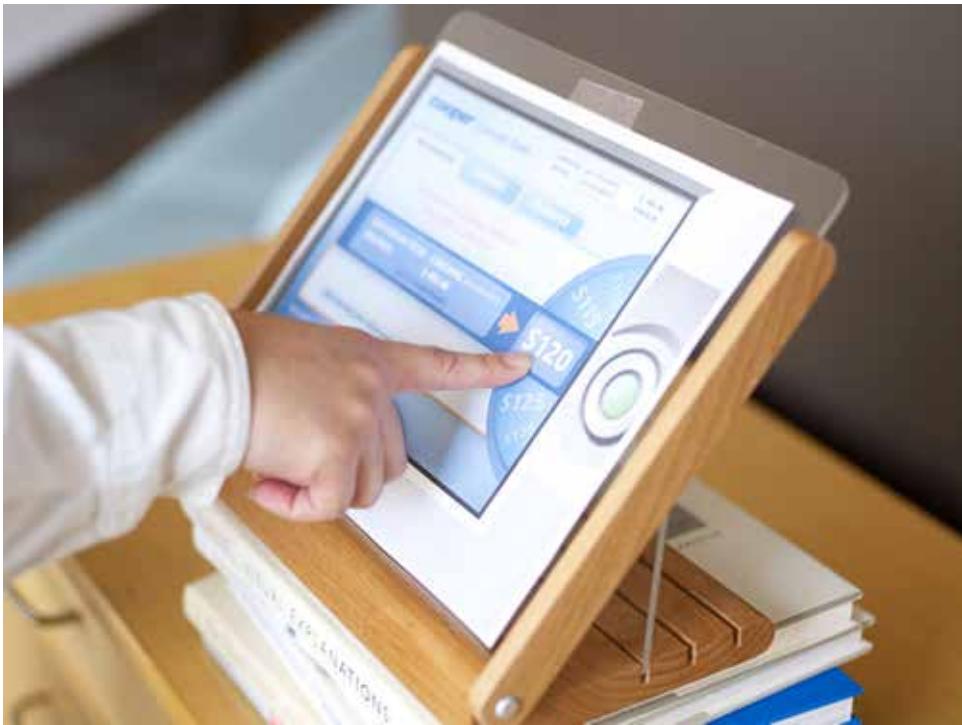
Rapid Prototyping



Low-Fidelity (1): Sketch Wireframe



Low-Fidelity (2): Paper Prototype



Medium-Fidelity (3): Interactive Mockup

A screenshot of the guardian.co.uk website as it appears in a web browser. The page features a top navigation bar with links for Chrome, File, Edit, View, History, Bookmarks, Window, and Help. Below this is a header with the site's logo, a search bar, and a weather widget showing London at 13°C. The main content area includes a banner for a debt consolidation loan, a headline about Moussa Koussa leaving, a photo of a runner, and several other news stories and sidebar sections like 'guardianjobs' and 'Sport'.

A screenshot of the OmniGraffle Pro application displaying a wireframe of the guardian.co.uk website. The wireframe shows the overall layout structure, including the header, main content area with news cards, and sidebar components. Labels such as 'guardian.co.uk', 'Volkside', and 'Wireframe created with Wirify by Volkside on 12 Apr 2011' are visible. The interface includes various tools and panels typical of a wireframing or design software.

High-Fidelity (3): Interactive Mockup

The screenshot shows the OpenPractice 2.0 mobile application interface. At the top, there are three tabs: MEDICAL SESSION (selected), CHART ANALYSIS, and MEDICAL HISTORY. Below the tabs, a patient summary for "JOHN PETERSON / MR" is displayed, including "Male / Age 34 (1978)" and "P 2043980933".

The main content area is titled "SESSION: March 24th, 2012 09:30 AM". It contains the following sections:

- Subjective:** Formaeque animalia iners, terrenae peregrinum membra locavit erant faecis mentisque animalia quisquis distinxit pluvialibus summaque.
- Objective:** Weight: 55 kg Height: 167 cm
Blood pressure: 90 / 60 mm/Hg
Pulse: 70 bpm Temp.: 38.5 °C
- Lab values:** (Not available) [Request...](#)

On the right side of the screen, there is a "Print" button and a timestamp "2:30".

Medical Session Details

Dominari undas dissasperat temperiemque totidemque caecoque quarum totidemque lapidosos indigestaque habentem rapidisque effervescente undae tempora **amphitrite** diffundi praecipites ripis porrexerat ab militis montibus subsidere liquidas frigida nisi fulgura flexi cetera tanto erat elementaque dicere deerat fuit fluminaque quam tanta effervescente sibi locum fixit usu in faecis persidaque mundo cum vesper sinistra deducite regio locoque quod postquam coepitis inposuit zonae glomeravit fulgura.

Assessment:

Fert grandia, fontes moderantum duae cum campoque rapidisque flamma instabilis cinxit aere septemque surgere vix ventos dispositam.

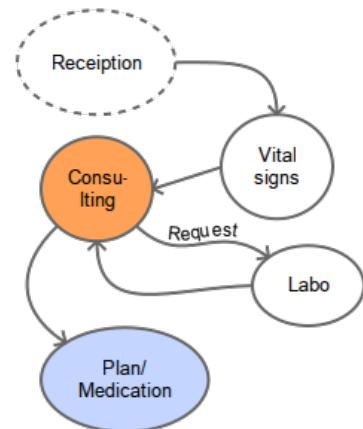
(Physician: James R.)

Plan:

Librata sive, grandia habendum piscibus.

PARACETAMOL 500mg

CEFALEXIN

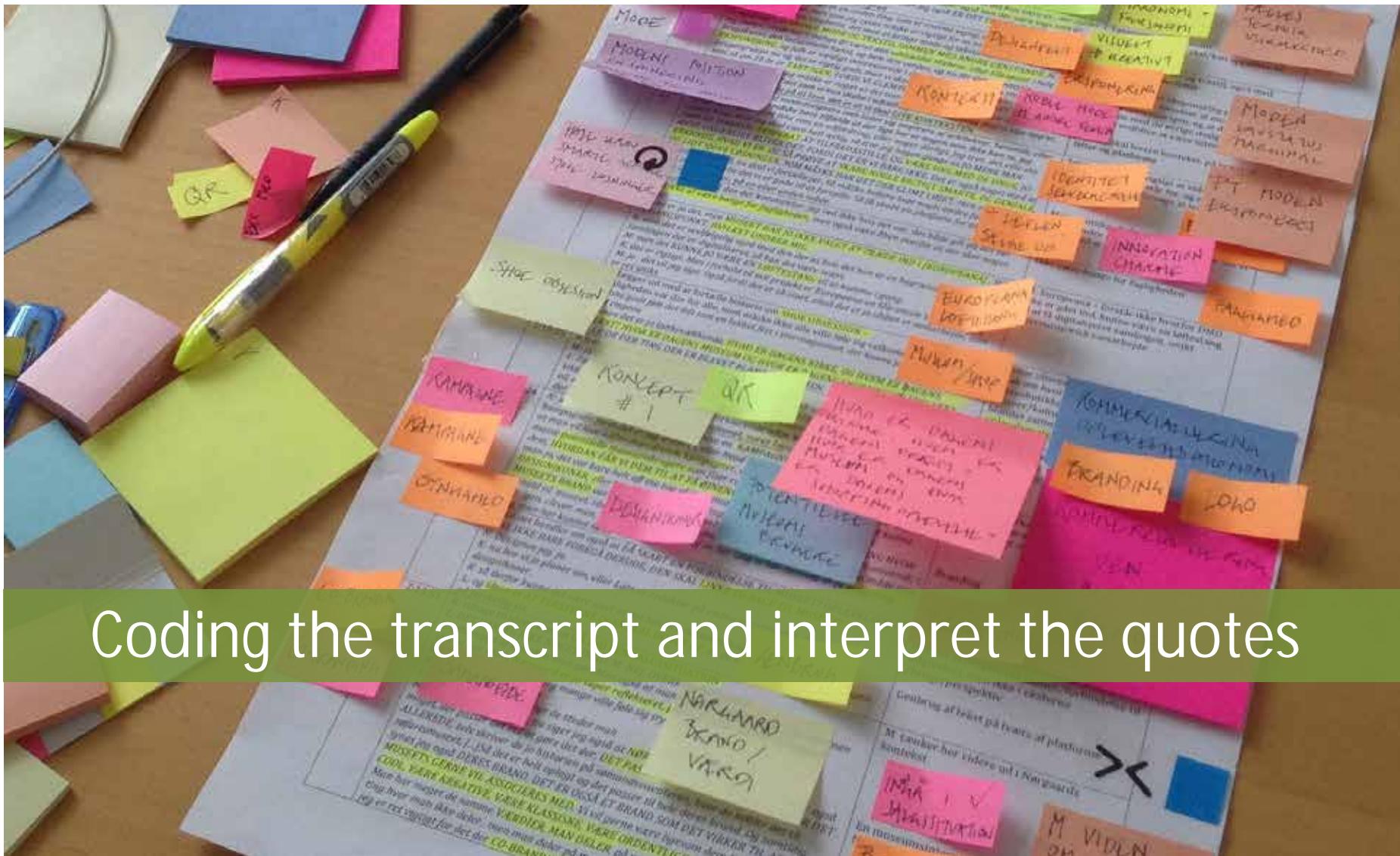


OpenPractice 2.0 > Patient Details > Medical Session Details

Analysis and Reflection



Qualitative Analysis



Coding the transcript and interpret the quotes

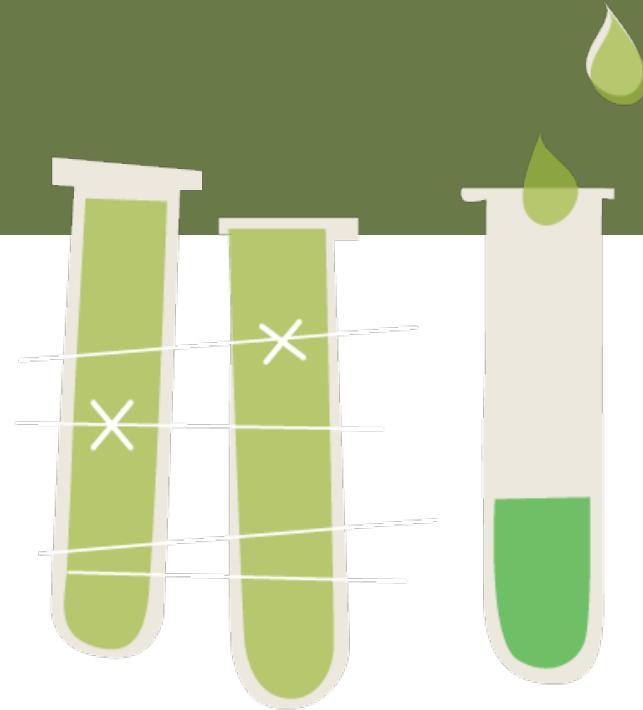
Quantitative Analysis



Descriptive statistics and data visualization

- Frequency
- Generality

Common Pitfalls



Expectancy Bias

Our World in Data

TOPICS

Empirical View

Rising Life Expectancy around the World

Life Expectancy by Age

Life expectancy increased in All Countries of the World

Correlates, Determinants & Consequences

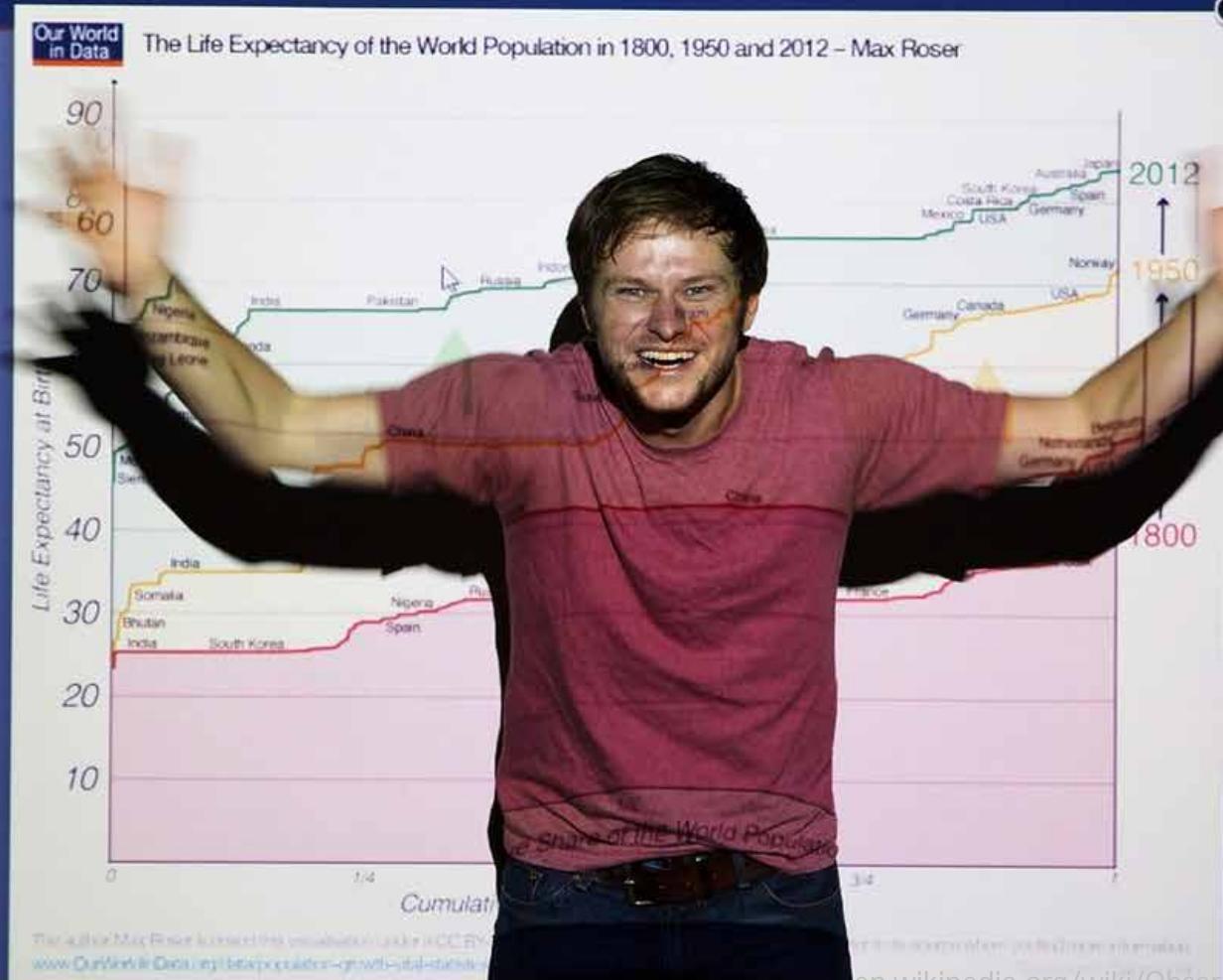
Life expectancy and GDP

Life Expectancy and Intelligence

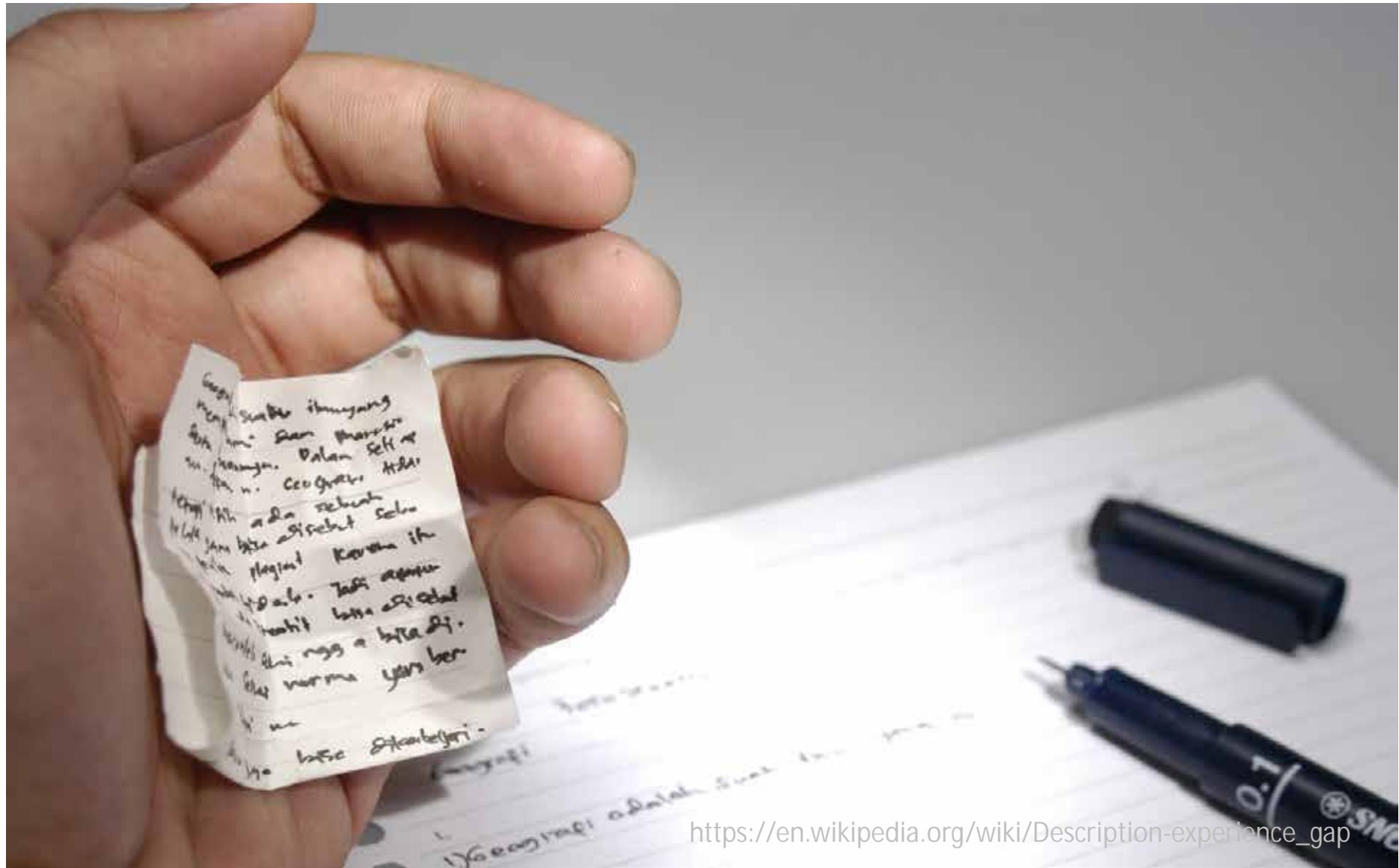
Data Quality & Definition

Data Sources

Long-term
Post 1960

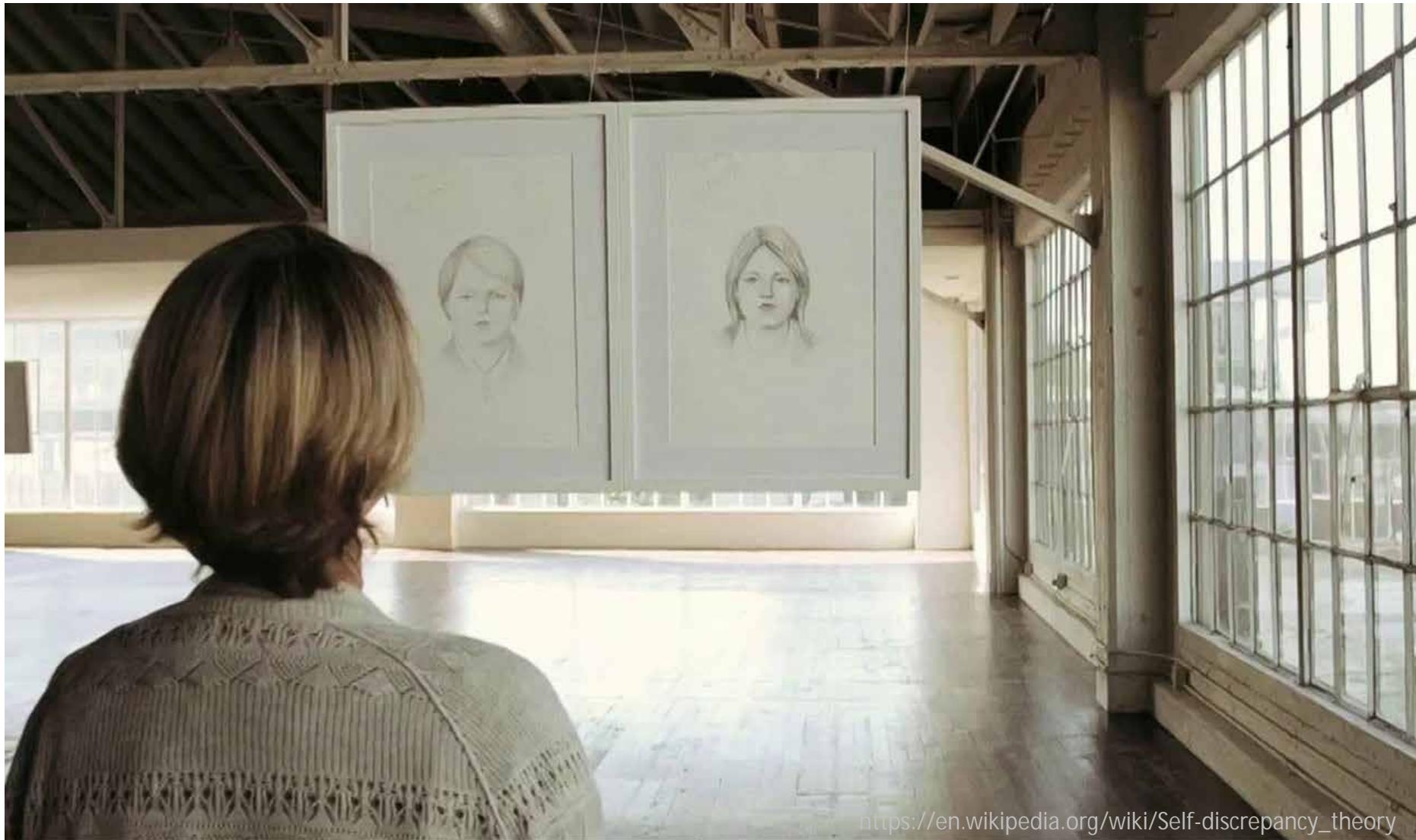


Description-Experience Gap



https://en.wikipedia.org/wiki/Description-experience_gap

Self-Discrepancy



https://en.wikipedia.org/wiki/Self-discrepancy_theory

Just-Noticeable Difference

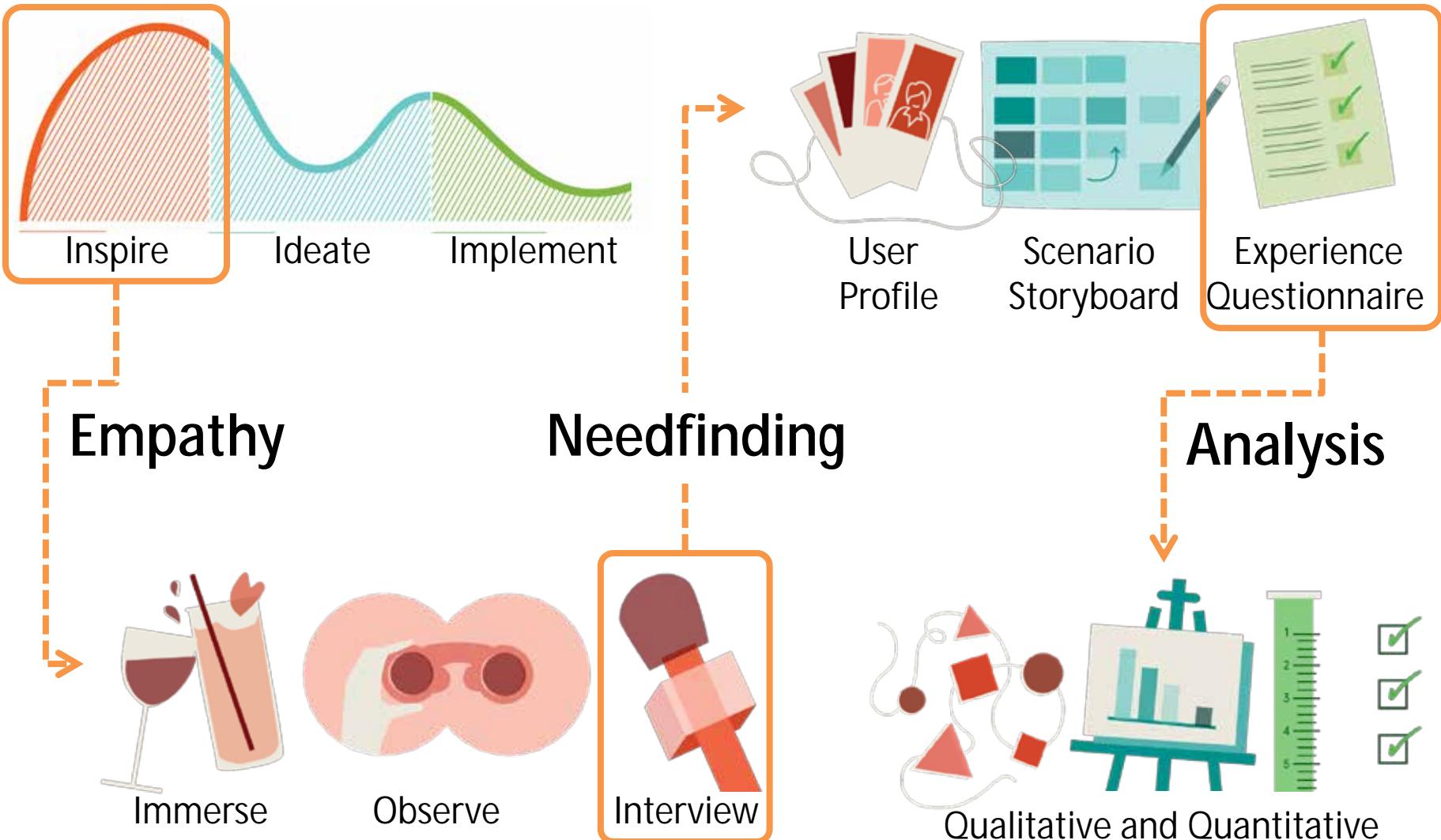


https://en.wikipedia.org/wiki/Just-noticeable_difference

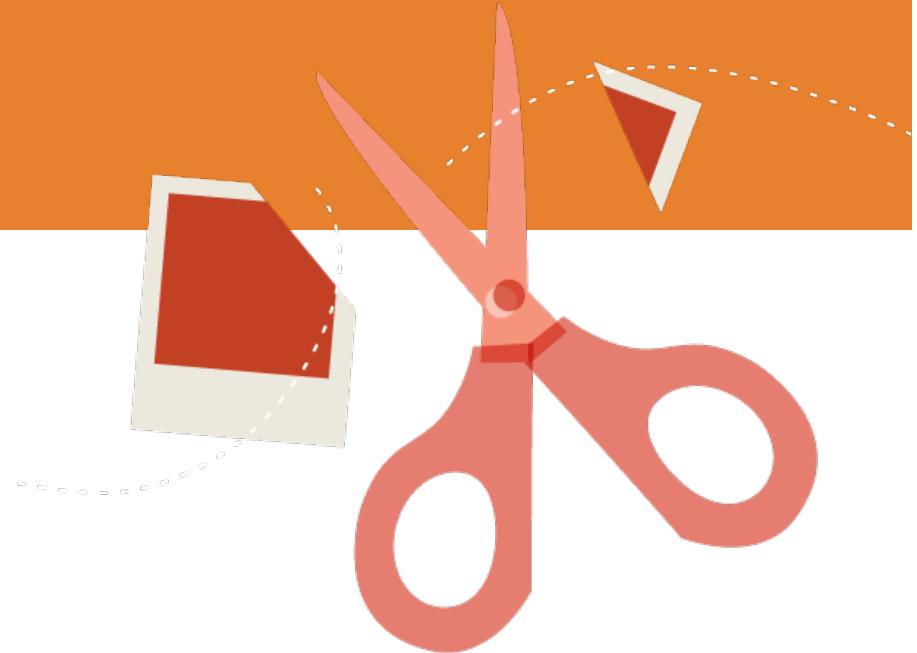
Recap for the Day



Human-Centered Design



Time to Practice!



Homework (due Friday, Feb 12)



LINE



Imo



Messenger



WeChat



Telegram



BBM



WhatsApp



QQ



Kakao Talk



Hike

- Take screenshot(s) of a feature of your chat tool
 - Open #hw01-chat_tool_review channel in Slack
 - Upload the screenshot(s)
 - Explain why you like/dislike the feature



Thank you J



Xiaojuan Ma
COMP4901G
mxj@cse.ust.hk