



# Lecture about Design Thinking

08.06.2017 / University Frankfurt / Michael Pachmajer & Jennifer Kint

## What is Design Thinking?

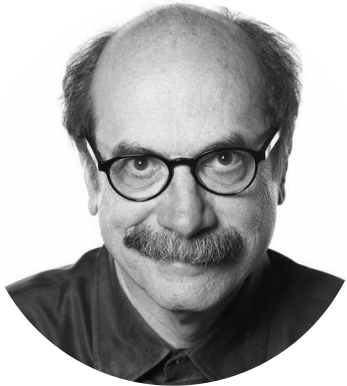
A photograph of Tim Brown, CEO of IDEO, sitting in a workshop. He is a middle-aged man with grey hair and a goatee, wearing a dark blue button-down shirt. He is smiling and has his hands clasped in front of him. In the background, a red bicycle is hanging on the wall, and various workshop tools and equipment are visible.

**Design Thinking** is a discipline that **uses the Designer's** sensibility and **methods** to match **people's needs** with what is **technologically feasible** and what a **viable business strategy** can convert into **customer value** and market opportunity.

Tim Brown (IDEO)



# Design Thinking is not a new innovation. It has a history of nearly 30 years



**IDEO**

1991



d. 

2005



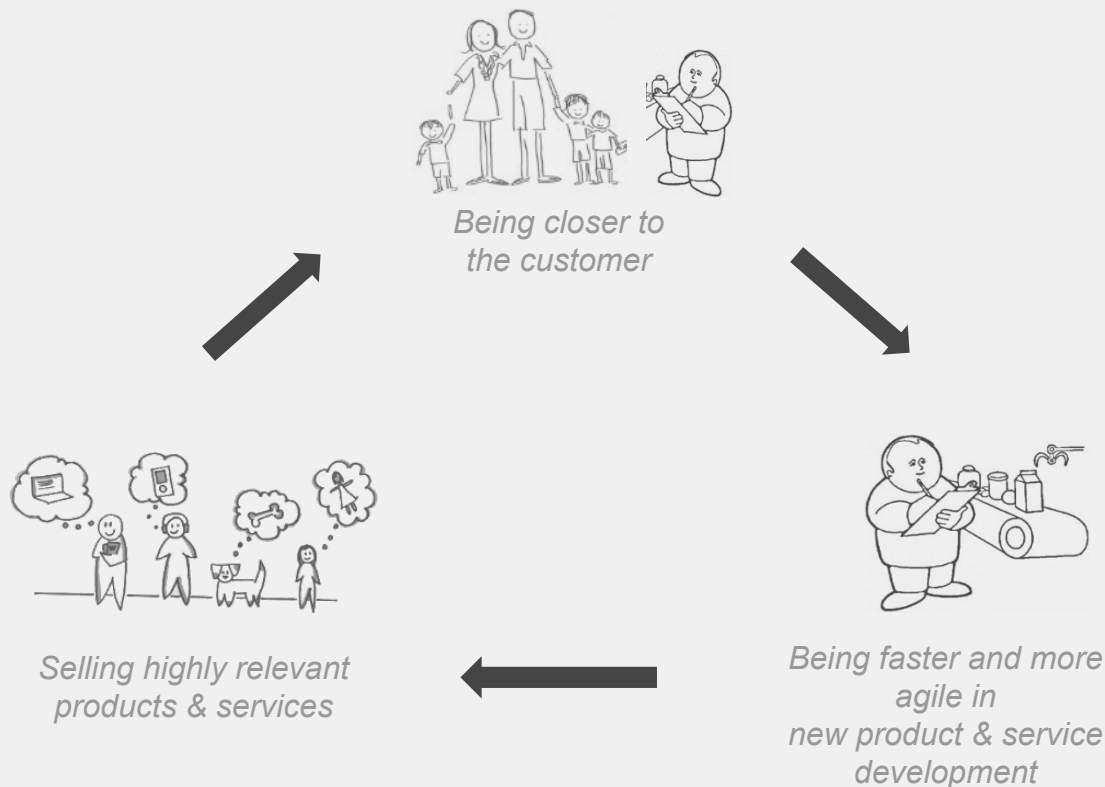
2007



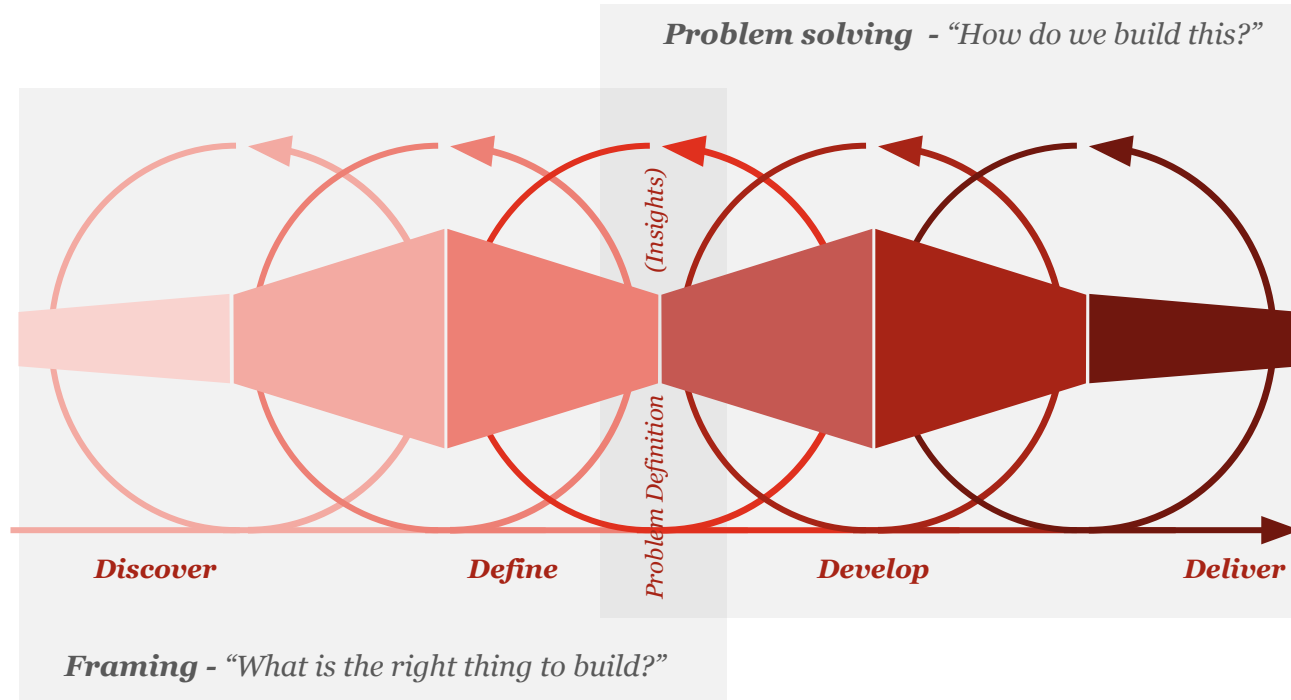
“Design thinking is an essential tool for simplifying and humanizing. It can’t be extra; it needs to be a core competence.”

Harvard Business Review. Design Thinking becomes of age. September 2015.

Design Thinking has an increasing relevance for corporate businesses



# The Design Thinking process can be divided into four phases, each with iteration loops



Design Thinking  
considers  
three lenses to create  
innovations.



In an increasingly digital world characterized by constant changes in markets, businesses and customers, product and service innovation must be fast and agile.

Design Thinking can enable this.

## Key benefits for companies using Design Thinking



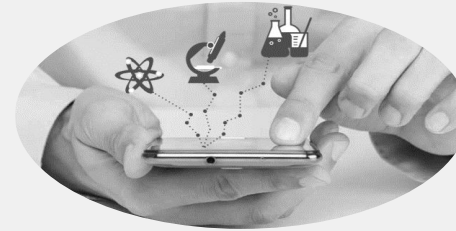
Fast Decision-Making



Interdisciplinary Teams



Relentless Innovation



End-to-End Ownership

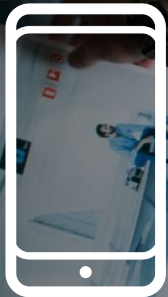


Entrepreneurial/  
Start-Up Spirit

# Design Thinking can be used in many areas of application



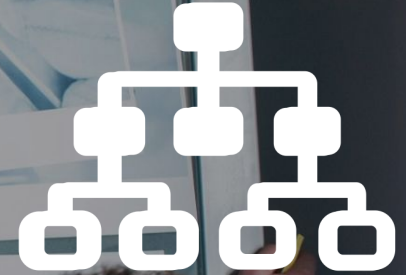
**Digital Products  
& Service**



**Processes**




**Spaces**



**Organizations  
(New Work)**





Instead of just telling you about  
***design thinking***,  
we want to immediately have you  
***jump right in*** and ***experience***  
it for yourself.

We are going to do a ***design  
project*** for about the next hour.

***Ready? Let's go!***



The most important part of designing for someone  
is to ***gain empathy*** for that person.  
Try to dig for ***stories, feelings, and emotions.***  
***Ask 'WHY?' often***

# Your mission: Design the recruiting experience of the future.

## Start by gaining empathy.

### 1. Interview

8 min. (2 sessions x 4 min. each)

Notes from your first interview

Switch roles & repeat Interview



### 2. Dig deeper

6 min. (2 sessions x 3 min. each)

Notes from your second interview

Switch roles & repeat Interview







# Observe & Understand

## Description

Gaining a clear understanding of the situation **from the perspective of current and potential customers/employees** of a digital product/service.

## Benefit

- Find the **true motivations** behind a customer's/employee's behavior
- Develop **empathy** as a basis for human-centered digital products or services

## Prerequisites

- Knowledge about ethnographic research methods
- Interview skills
- Access to customers and other potential stakeholders



**Contextual Interviews** –  
*Watch and listen as users act and behave in their own environment*



**Work Shadowing** – *By accompanying stakeholders implicit problems and wants are revealed*



**Journey Mapping** – *Create a visual representation of a customer experience of a service*




**Cultural Probes** – *Probes are given to research participants who can then document their daily experiences*




***Insights are discoveries*** that you might be able to ***leverage*** when creating solutions.



Take a stand by specifically stating the ***meaningful challenge*** you are going to take on.



This is the statement that you're going to ***address with your design***, so make sure it's ***juicy and actionable!***





# Your mission: Design the recruiting experience of the future.

## Reframe the Problem.

### 3. Capture findings

3 min.

#### Goals & Wishes:

What is your partner trying to achieve through recruiting?

(Use verbs)

#### Insights:

New learnings about your partner's feelings and motivations.  
what's something you see about your partner's experience that  
maybe s/he doesn't see? (Make inferences from what you heard)

### 4. Take a stand with a point-of-view

3 min.



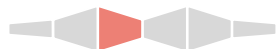
Partner's name/description

Needs a way to

User's need

Because (or „but...” or „surprisingly...”)

Insight



# Synthesize

## Description

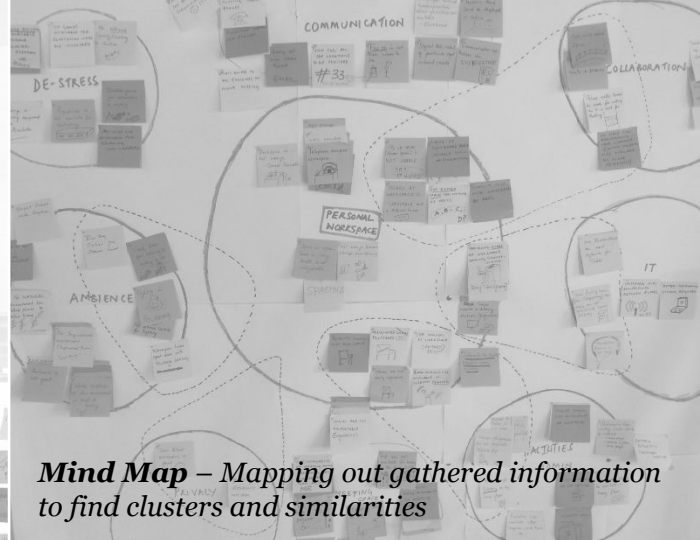
Drawing conclusions from research or prototype testing by sharing observations across the team, cluster the information and finally **condense to insights**.

## Benefit

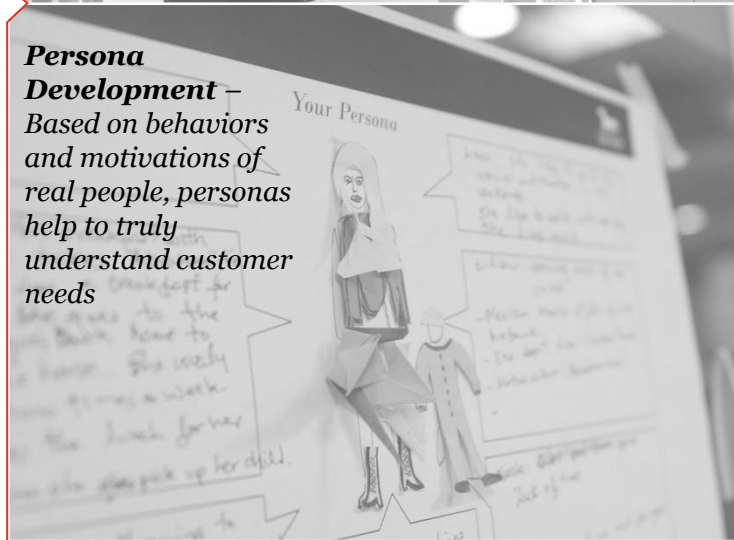
- **Simplify and frame** complex and intangible processes/problems
- Narrow down to **core content**

## Needed tools and outcome

- A lot of post-it notes to write down observations, findings, etc.
- Whiteboards
- Outcome: **Point-of-View statement**



**Mind Map** – Mapping out gathered information to find clusters and similarities



**Persona Development** – Based on behaviors and motivations of real people, personas help to truly understand customer needs

**Point-of-View statement formulated as hypothesis**

**USER  
+  
NEED  
+  
INSIGHT**



## ***GO FOR VOLUME!***

This is time for idea generation,  
***not evaluation*** — you can  
evaluate your ideas later.


## ***Be VISUAL!***

Spend the time ***listening*** to your partner's  
***reactions and questions.***

# Your mission: Design the recruiting experience of the future.

## Ideate: Generate alternatives to test.

5. Sketch at least 5 radical ways to meet your user's needs. 5 min.



Write your problem statement above

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6. Share your solutions & capture feedback. 10 min. (2 sessions x 5 min. each)

Notes

Switch roles & repeat Interview





# Ideate

## Description

Generating **various solution concepts** of potential digital products or services by combining gathered insights and **facts** with **imagination** and creativity.

## Benefit

- Quick and structured idea generation
- Get to know the **different perspectives** on one topic at once
- Go **beyond obvious** solutions

## Setting

- Space for creativity
- Clear rules
- Strict time management



***Ideation sessions** – Jointly develop a vast amount of potential solutions with different creativity techniques...*

“

“It’s not about coming up with the ‘right’ idea, **it’s about generating the broadest range of possibilities.**”

*... and subsequently rate them according to the **three lenses of design thinking***







Now, take a moment to ***consider*** what you have ***learned*** both ***about your partner,*** ***and about the solutions*** you generated.

From this ***new understanding*** of your partner and his or her needs, ***sketch a new idea.***

Try to provide as much ***detail and color*** around your idea as possible.

# Your mission: Design the recruiting experience of the future.

## Iterate based on feedback.

### 7. Reflect & generate a new solution. 3 min.

Sketch your big idea, note details if necessary!





Create a *physical prototype* of your solution.

If your solution is a service or a system, create a scenario that allows your partner to experience this innovation.”

When you test, **LET GO** of your prototype, physically and emotionally.

Your prototype is **NOT PRECIOUS**, but the feedback and new insights it draws out are!

# Your mission: Design the recruiting experience of the future.

## Build & test.

### 8. Build your solution.

7 min.

**Make something your partner  
Can interact with!**

[not here]



### 9. Share your solution & get feedback.

8 min. (2 sessions x 4 min. each)

**+ What worked...**

**- What could be improved...**

**? Questions...**

**! Ideas...**





# Prototype

## Description

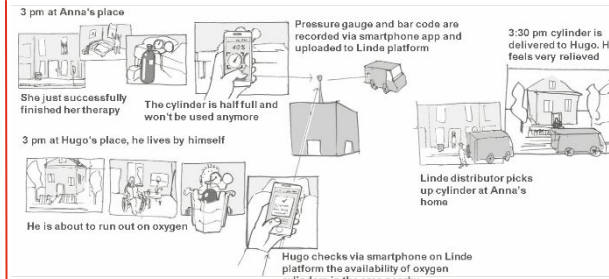
The prototype is an **early model or experiment** to rapidly create solutions to identified challenges and problems.

## Benefit

- Make any business model, product or service idea **tangible and visualized**
- **Test** it with the potential customers or employees

## Needed material

- Apps like Spark or LEGO® Movie Maker
- Paper & pencils
- Other arts & crafts material
- Divers physical artifacts like
- Others



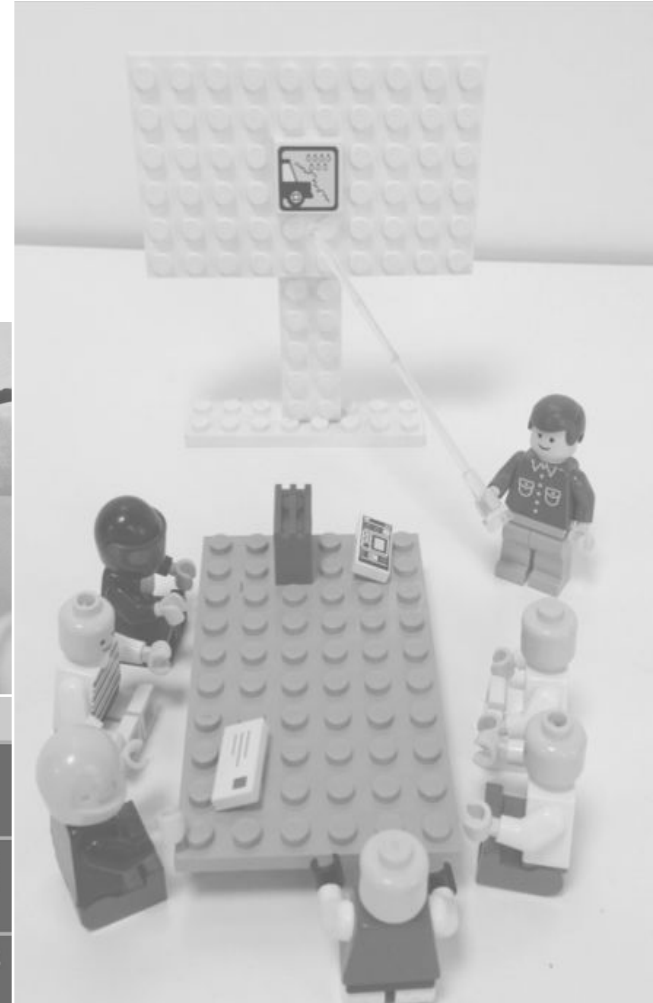
*Paper-based prototype – Customer journey*



*Paper-based prototype - Click dummy*



*Video prototype - LEGO® Movie Maker*



*Behavior prototype - Simulation with physical artifacts*





# Test

## Description

Bring prototypes and first ideas **in a context with stakeholders and their environment** for quick evaluations. The context (who and where) is very crucial.

## Benefit

- Get **feedback** from people inside/outside the development team
- Testing allows to find flaws early and improve them in **further iterations**

## Needed material/tools

- Create prototype to be tested (and device to show with)
- Create a test plan (what exactly to test and how)
- Stakeholders & location to test with

**In Context** – Prototypes that are presented to real users in context help to get more realistic feedback

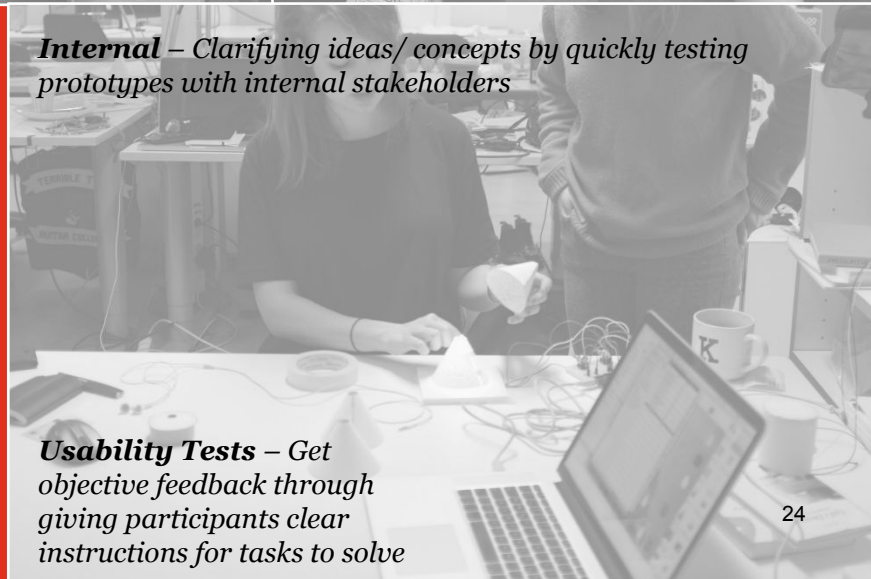


**User Experience Testing** – Walk through a digital service with users to get an understanding of their impressions

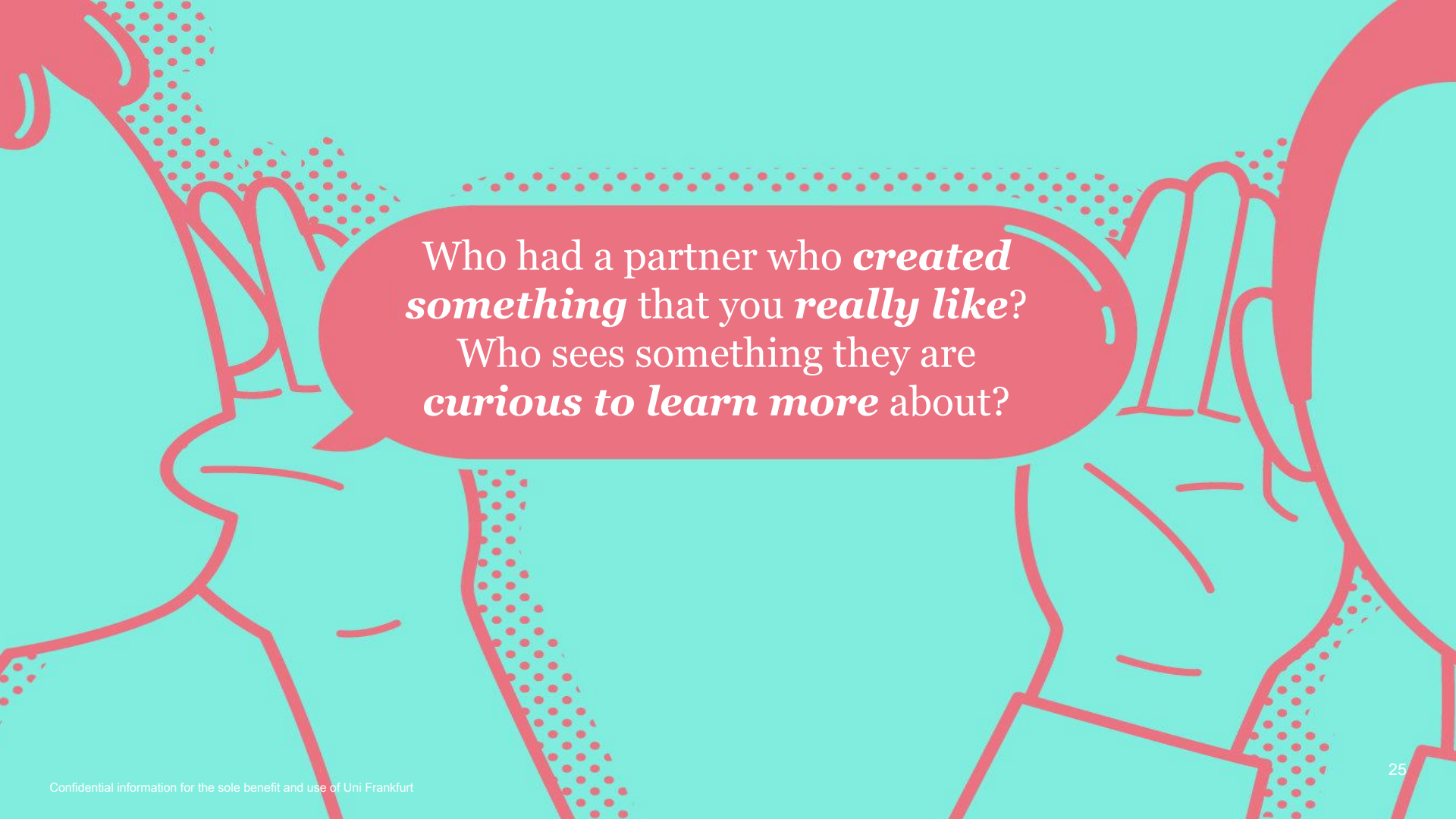
**Iterations** – Integrate test feedback into the generation of prototypes



**Internal** – Clarifying ideas/ concepts by quickly testing prototypes with internal stakeholders



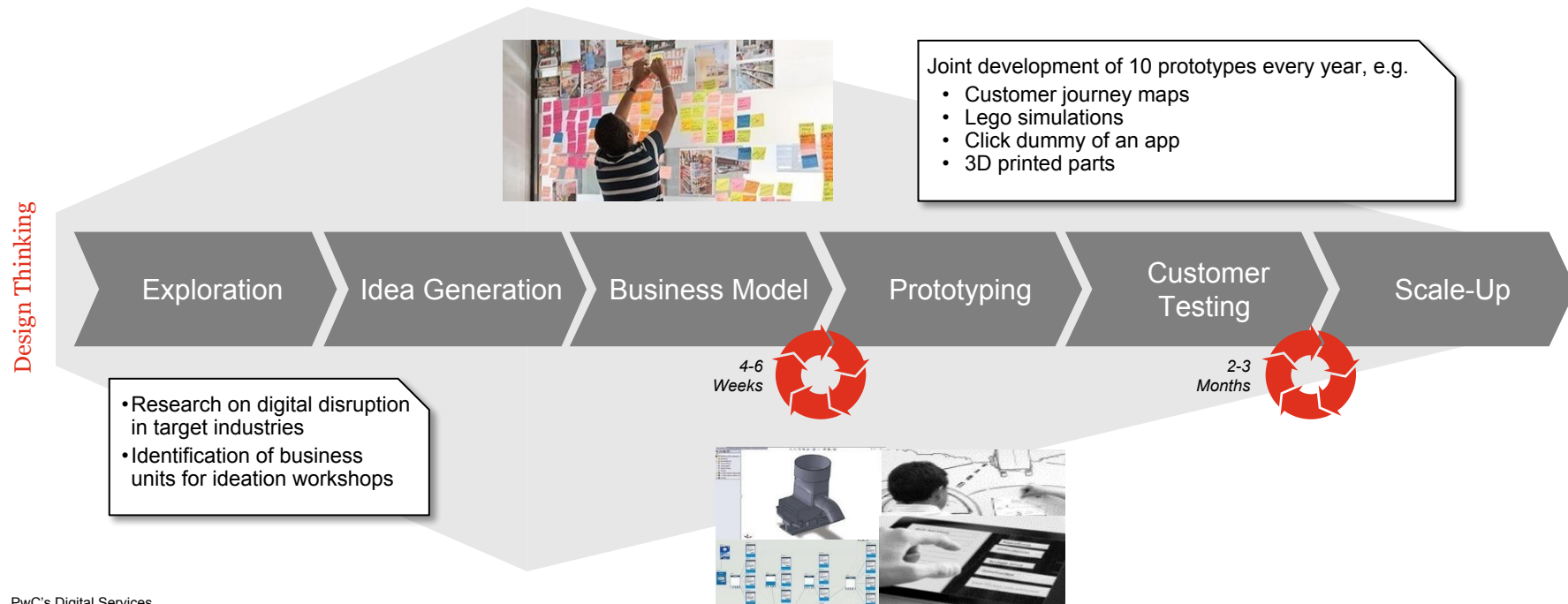
**Usability Tests** – Get objective feedback through giving participants clear instructions for tasks to solve

A stylized illustration of two hands, one on the left and one on the right, rendered in a dark teal color. The hands are positioned as if holding a large, rounded, light teal speech bubble in the center. The background is a solid light teal color. The hands have simple, bold outlines and some internal shading. The speech bubble has a small tail pointing towards the bottom left.

Who had a partner who ***created something*** that you ***really like***?  
Who sees something they are  
***curious to learn more*** about?

# An agile, iterative approach created the required momentum for digital business model innovation across the company

## Transformation Program Approach – Agile Business Development



# The ideation workshop concept is a proven, powerful tool for business model ideation

## Results Extract (1/2): Ideation Workshops

**Ideation Workshop Result Example: "Car Lifecycle Management App"**

**Platform**

- Establish standard
- Create marketplace that connects supply & demand of used transportation services (car and customer sharing)
- R&D sets standards in customer

**Search flow**

- Transportation as production process step, e.g. pizza baked during delivery to customer
- Intuitive and simple
- Self-destructive flows if cold chain not conserved

**Customer**

- Implement ecosystem that is flexible that customers does not have to respect "best practices" (best standard since flexibility)
- Automation and local detection. Certified RFID system to

**Business model canvas**

- Floating/dynamic management which (phases)
- Generate with USER in distribution of coded goods (play rate based)

**Value chain and structure**

- Increase reliability of the system
- The "best" and "lowest" integration. Act as low producer and take care for the whole shop

**Value proposition**

- Increase the data manager in cold chain logistics. Create the platform to share
- Higher transparency across the whole value chain / supply chain

**Revenue**

- Compensation of cold chain safety and packaging solutions
- Quality guarantee
- Insurance for temperature deviation

**Cost structure**

- Offer rental services in open platform
- Coded drop-off stations e.g. in houses
- Fast and direct unattended delivery
- Full control of packaging location, return and recycling
- Automation framework
- Data gathering and monitoring to ensure distribution compliance
- Capacity/flow dynamic pricing actions
- Materialize packaging for reverse logistics and inventory management
- Location awareness, inside warehouse
- Shortening of the value chain by working close to end-customer

**Key drivers**

- New "chain" reaction/learning
- New system (smaller, better, faster, cheaper, more flexible)
- Overcoming of packaging solution that produces evolution performance → evolution within the 2nd package
- Packaging based on innovation or fully biodegradable
- Active cooling box with independent energy supply
- Broad packaging design of items
- New "chain"
- Tailored new design to drug/wine
- "Quality" in packaging material to prevent unwanted leakage/contamination

PWC strategies  
Confidential information for the sole benefit and use of Uni Frankfurt

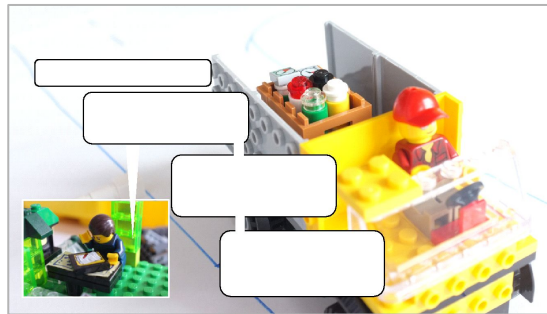
## Ideation Results

- 10+ ideation workshops across business units every year
- 100-150 business model ideas generated in each workshop
- 3-5 most promising ideas translated into detailed business model canvas

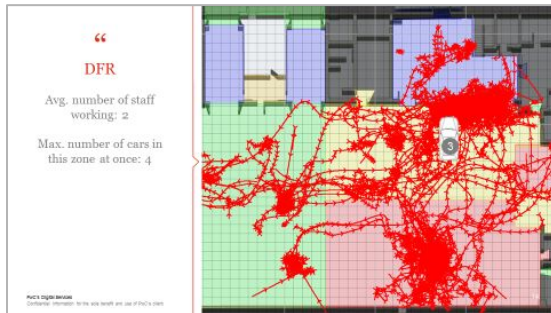
# Business models are rapidly validated in the market with multiple formats of digital and physical prototypes

## Results Extract (2/2): Selection of Prototyping Formats

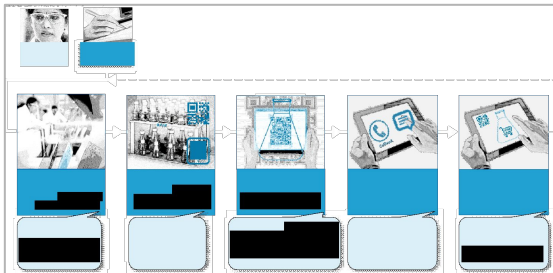
### LEGO® Simulations



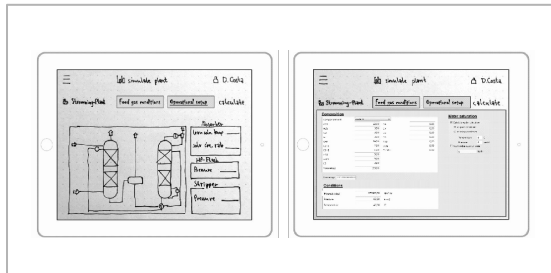
### Engineered Product Installations



### Customer Journeys



### App Click Dummies



## Prototyping & Testing

### Objectives

- Make the business model, product, or service idea **tangible**
- Get **feedback from people inside/outside** the development team
- Testing allows to find flaws early and improve them in **further iterations**

### Results

- 5-10 business models have been **validated every year**
- **Internal „make-or-break“ point:** Business unit commitment and technical feasibility
- **External „validation“:** Right Product-Market fit & customer acceptance



# Recent acquisitions and projects show the importance of Design Thinking



d.school founded in 2005  
at Stanford University



HPI D-School founded in 2007  
based in Potsdam



Accenture acquires Fjord  
(service design consultancy,  
London) in 2013



Deloitte acquires Flow  
Interactive (user experience  
agency, Cape Town) in 2014



The Experience Center

PwC sets up  
Experience Centers  
2015



McKinsey acquires Lunar  
(design company,  
San Francisco) in 2015



Acquisitions by IBM iX e. g.  
Aperto (digital agency, Berlin),  
Resource/Ammirati (marketing &  
creative agency, Columbus) in 2016



Ideo one of the world's largest  
design firm joins the creative  
collective kyu for collaboration  
in 2016