

IDBM CHALLENGE 2021

Design thinking: fundamentals and the first iterations

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Agenda

- Design thinking: Surface perspective
- Design thinking: Dominant paradigms
- Design thinking: Deep dive
- Task: stakeholder mapping
- Task: breaking conventions
- Task: five whys
- Next steps?

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Design thinking is

**...the way designers think, work, and
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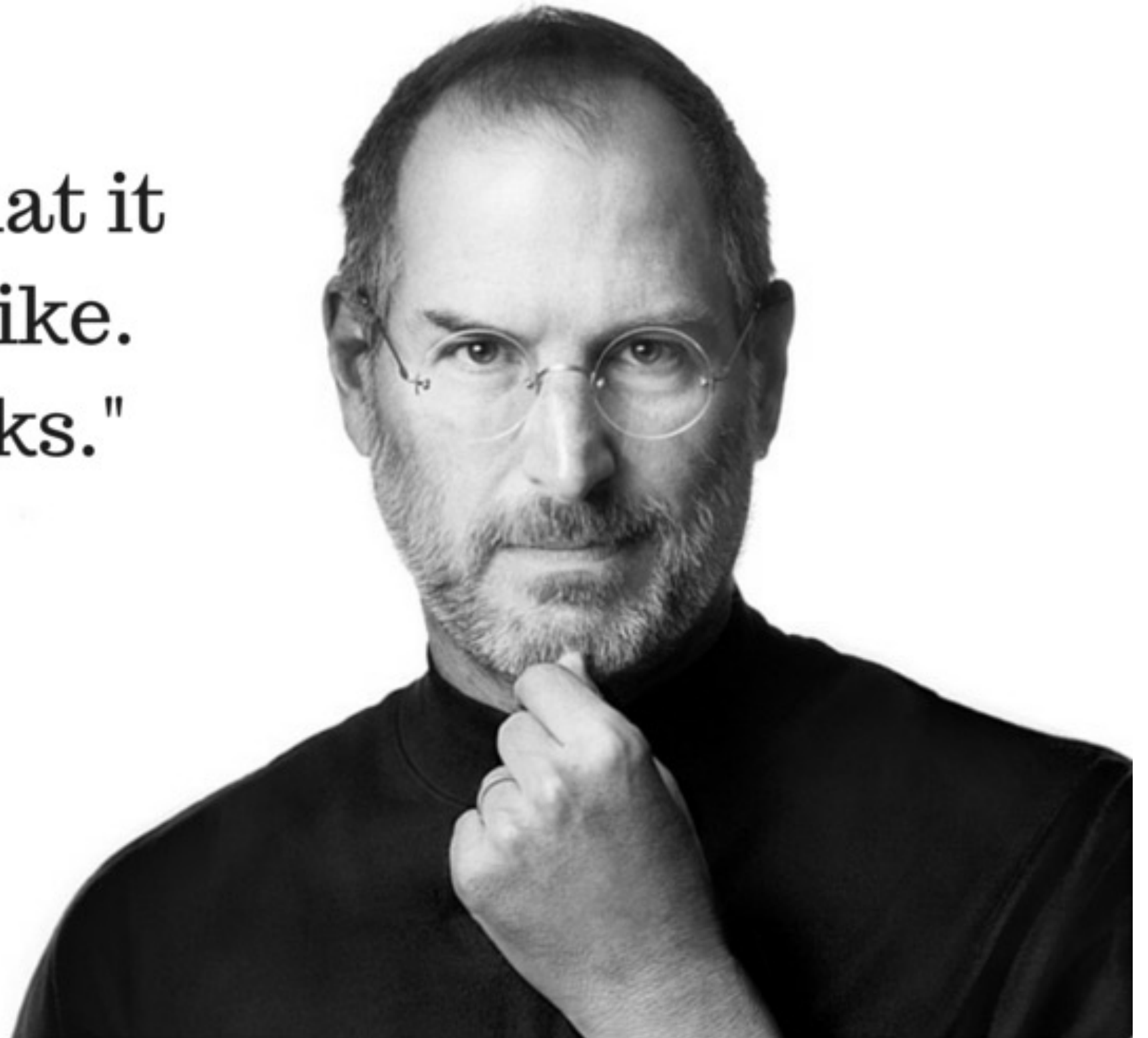
&

**...using design approaches and tools
outside of their traditional realm**

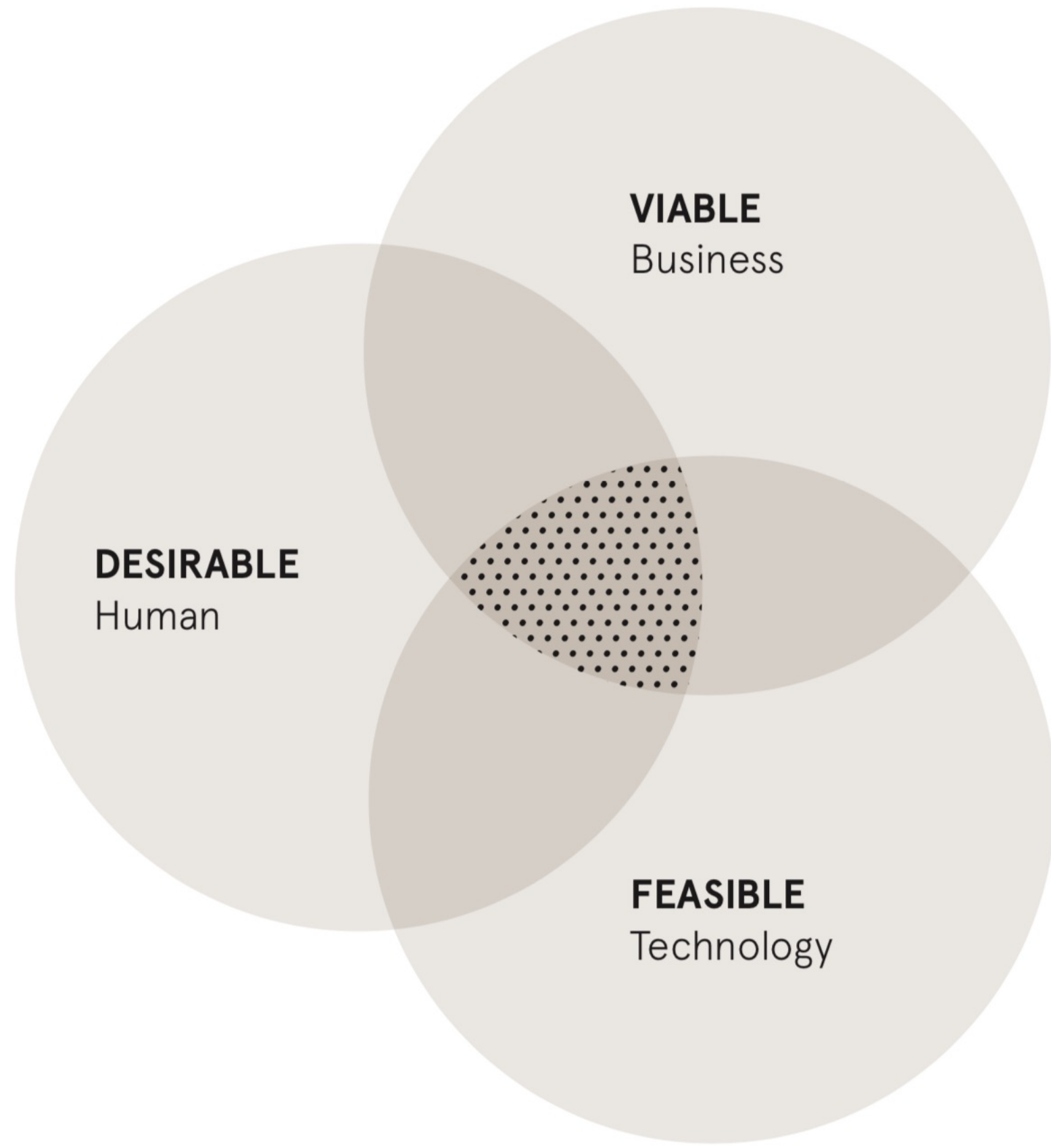
"Design is not just what it looks like and feels like. Design is how it works."

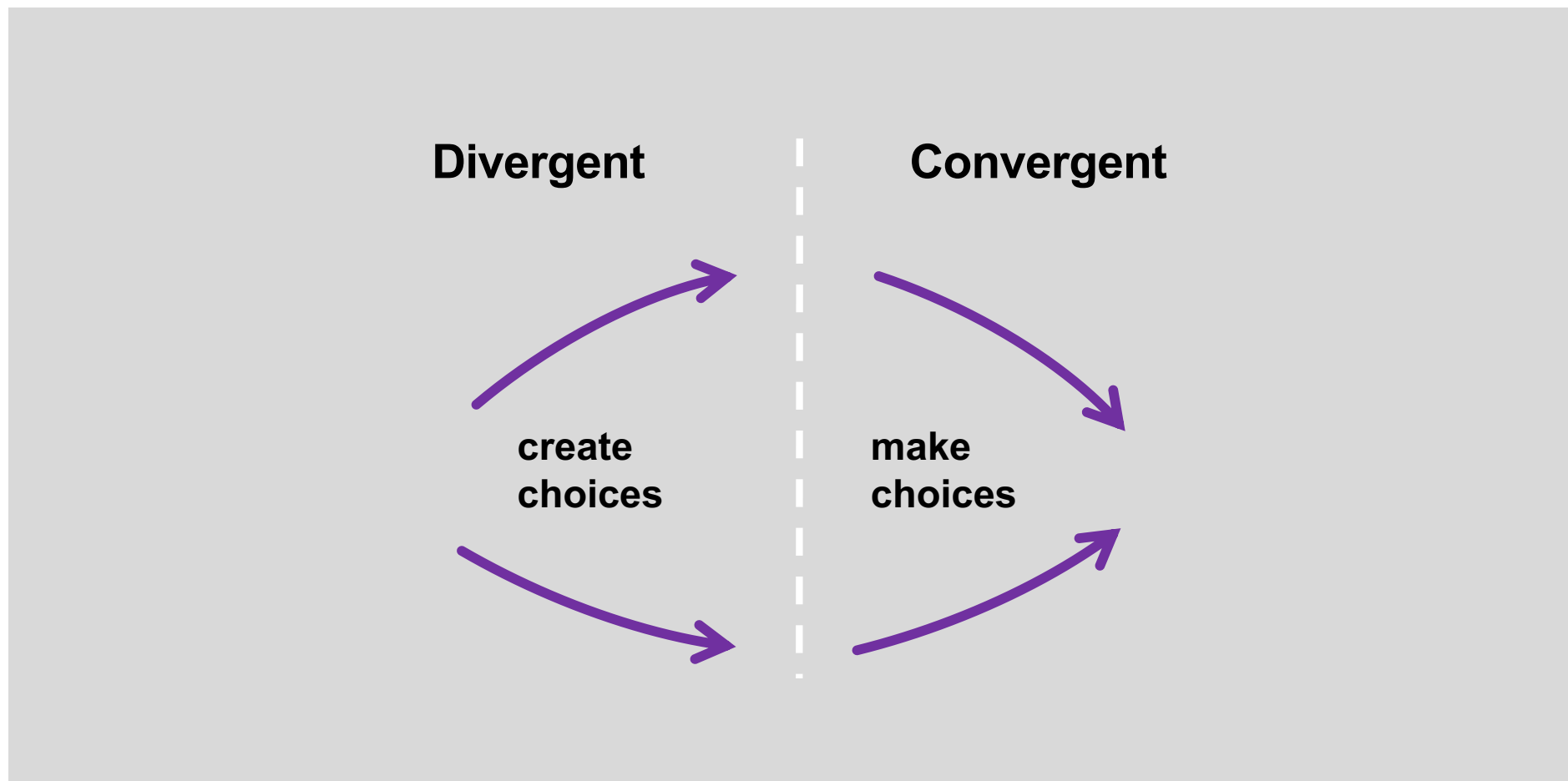
Steve Jobs

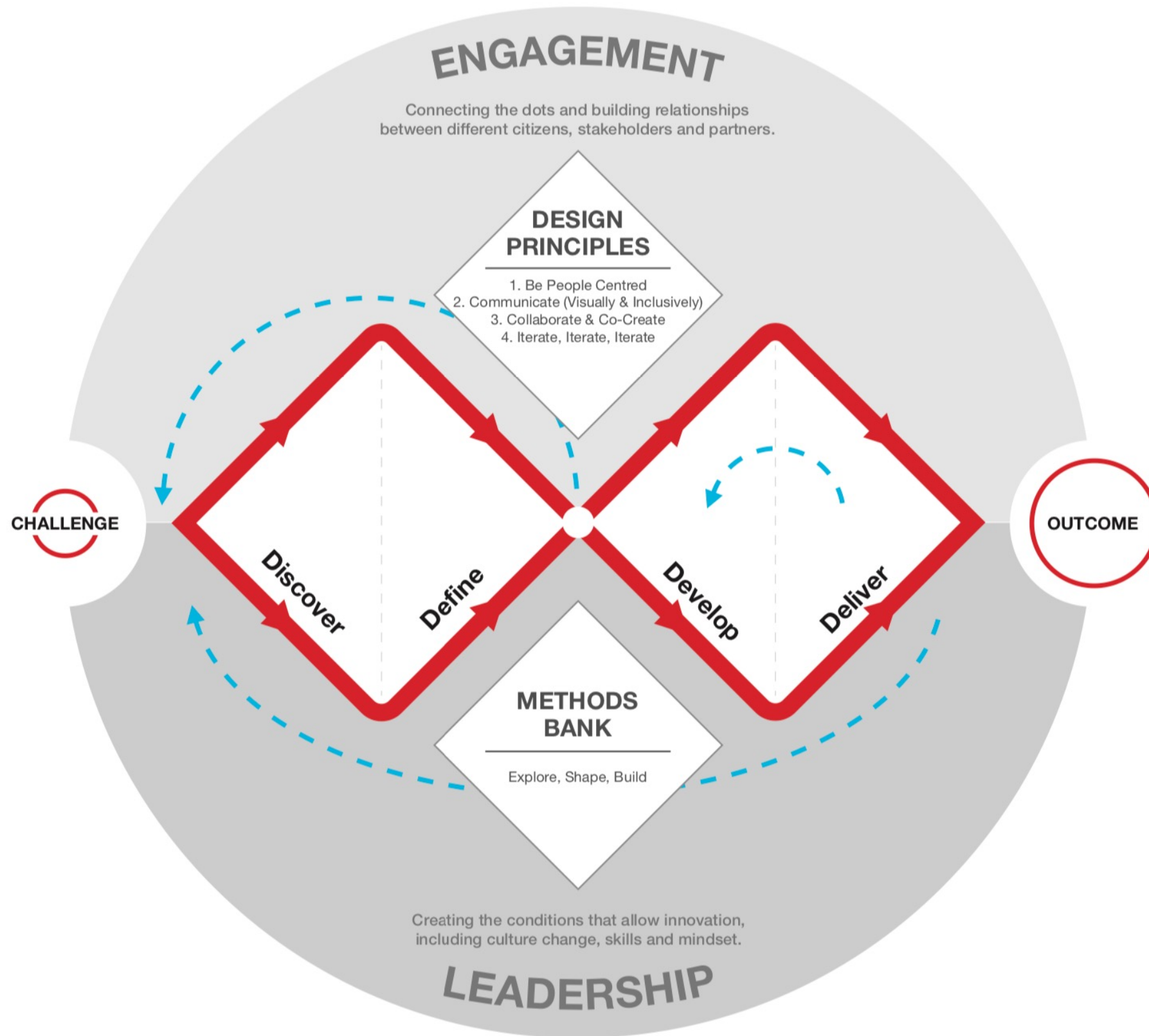
1955-2011

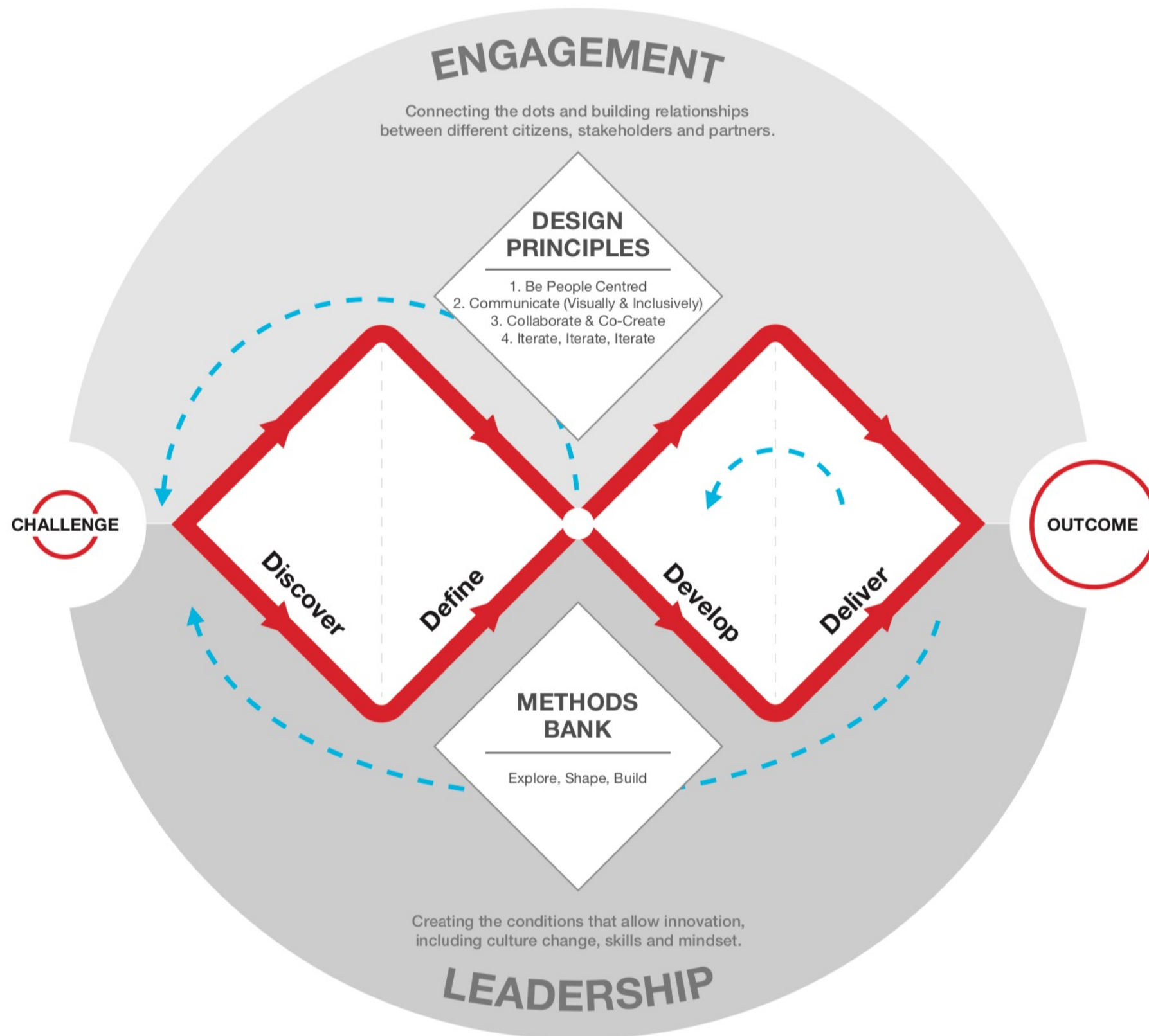


Start here









- **Discover.** The first diamond helps people understand, rather than simply assume, what the problem is. It involves speaking to and spending time with people who are affected by the issues.
- **Define.** The insight gathered from the discovery phase can help you to define the challenge in a different way.
- **Develop.** The second diamond encourages people to give different answers to the clearly defined problem, seeking inspiration from elsewhere and co-designing with a range of different people.
- **Deliver.** Delivery involves testing out different solutions at small-scale, rejecting those that will not work and improving the ones that will.

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Table 2. Most Influential Applied Models of Design Thinking

Proponent	Main Stages of Design Thinking
IDEO	Inspiration, ideation, implementation
Stanford Design School	Empathy, define, ideate, prototype and test
IBM	Understand, explore, prototype, evaluate



INSPIRATION

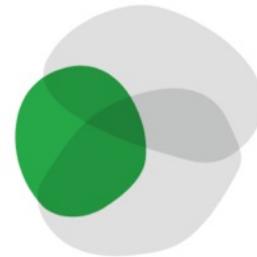
The Inspiration phase is about learning on the fly, opening yourself up to creative possibilities, and trusting that as long as you remain grounded in desires of the communities you're engaging, your ideas will evolve into the right solutions. You'll build your team, get smart on your challenge, and talk to a staggering variety of people.



IDEATION

In the Ideation phase you'll share what you've learned with your team, make sense of a vast amount of data, and identify opportunities for design. You'll generate lots of ideas, some of which you'll keep, and others which you'll discard. You'll get tangible by building rough prototypes of your ideas, then you'll share them with the people from whom you've learned and get their feedback. You'll keep iterating, refining, and building until you're ready to get your solution out into the world.

IDEO



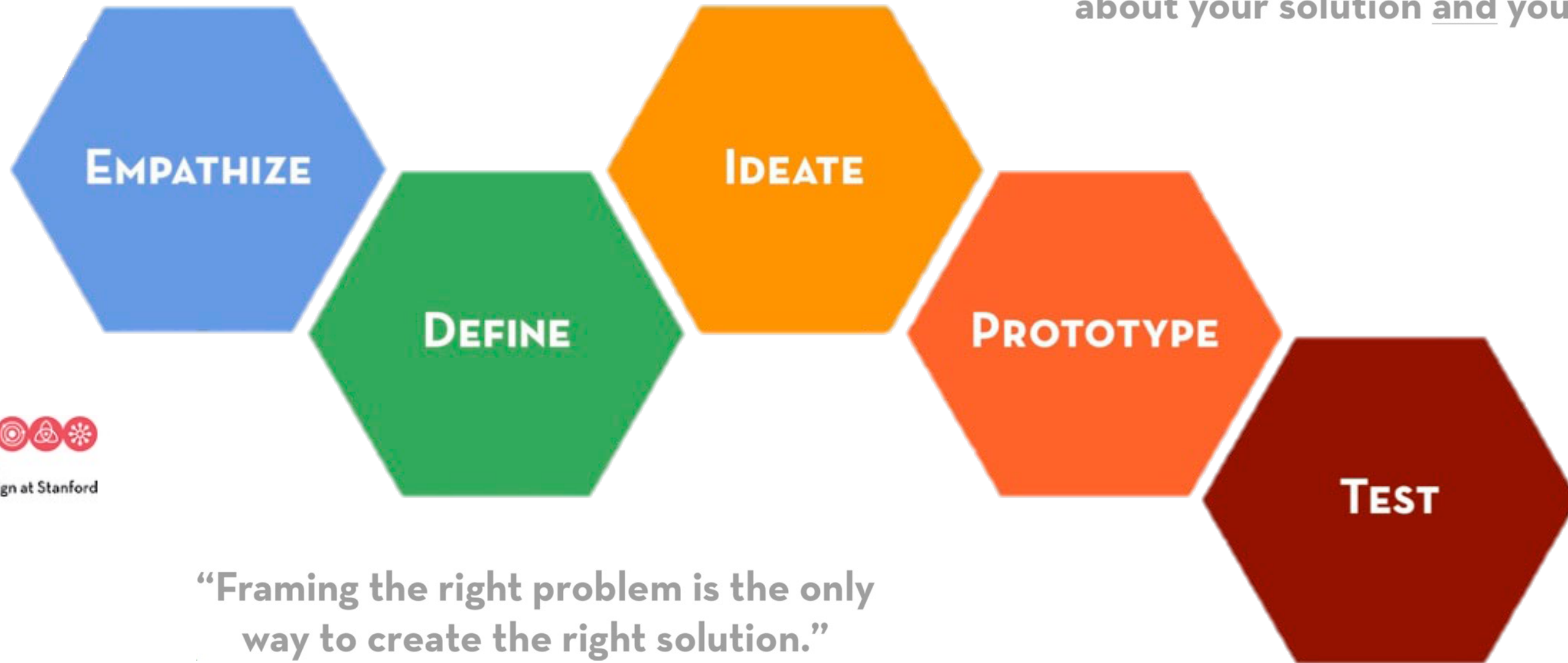
IMPLEMENTATION

In the Implementation phase you'll bring your solution to life, and to market. You'll build partnerships, refine your business model, pilot your idea, and eventually get it out there. And you'll know that your solution will be a success because you've kept the very people you're looking to serve at the heart of the process.

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

“To create meaningful innovations, you need to know your users and care about their lives.”

“Testing is an opportunity to learn about your solution and your user.”



“Framing the right problem is the only way to create the right solution.”

“Build to think and test to learn.”



The Loop drives us

Understand the present and envision the future in a continuous cycle of observing, reflecting, and making.



Observe >

Immerse yourself in the real world.

Reflect >

Come together and look within.

Make >

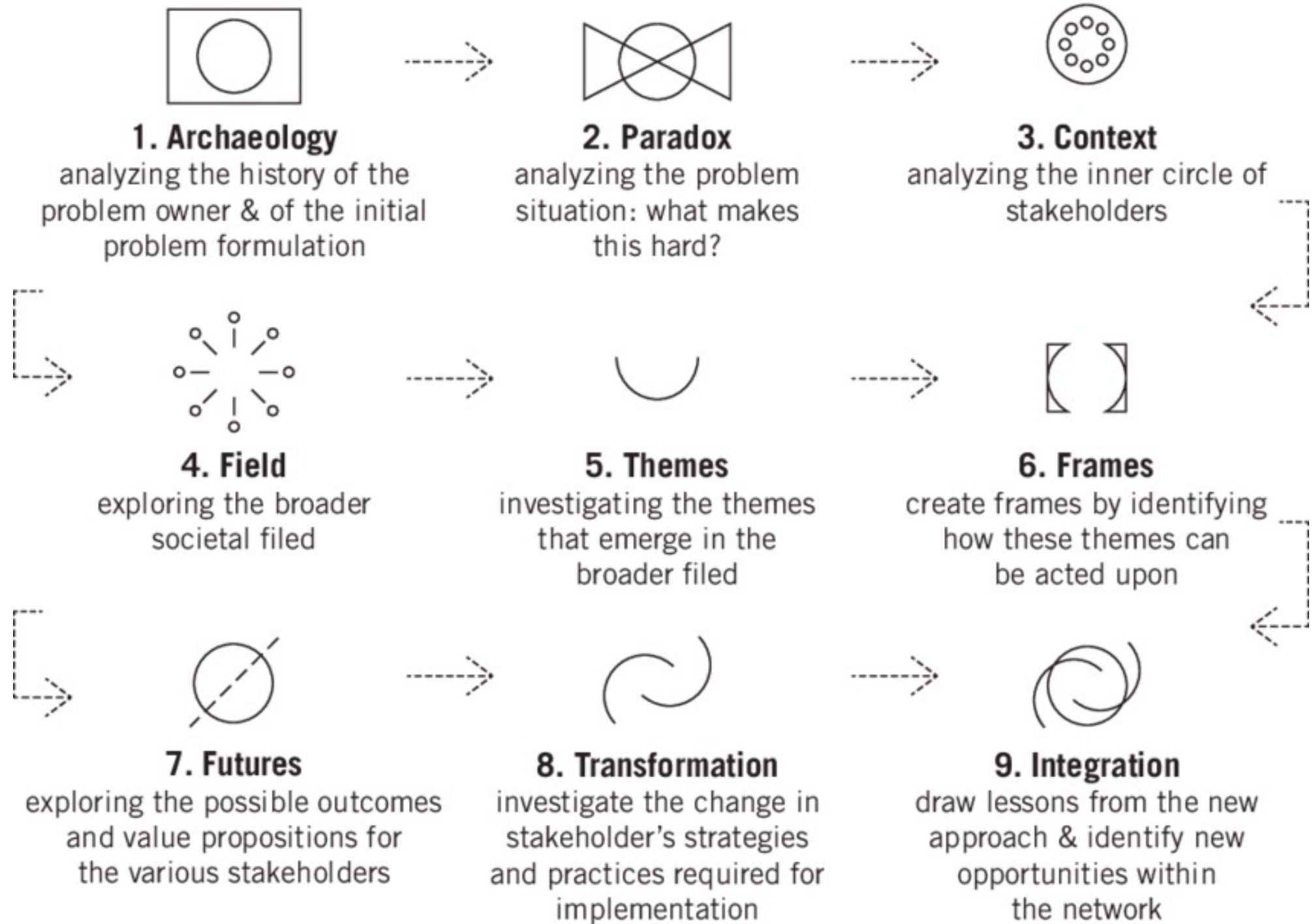
Give concrete form to abstract ideas.

FRAME INNOVATION

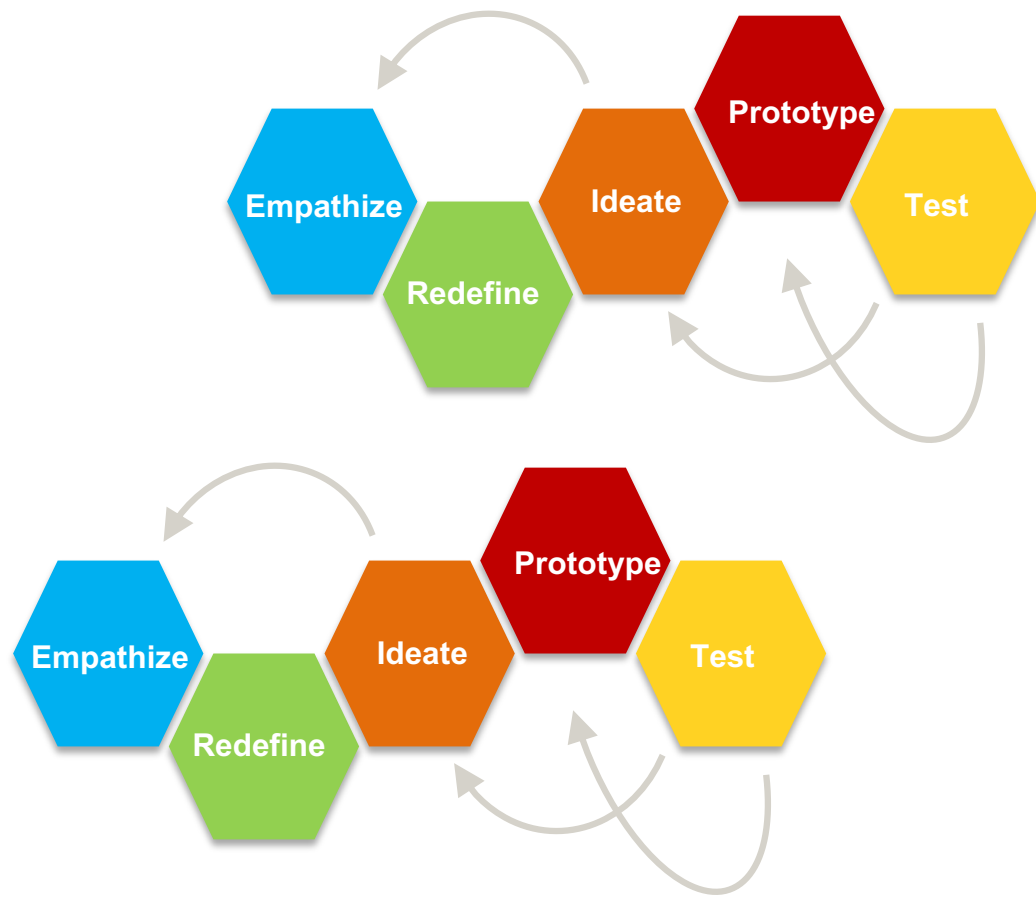
CREATE
NEW THINKING
BY DESIGN

KES DORST

Frame creation

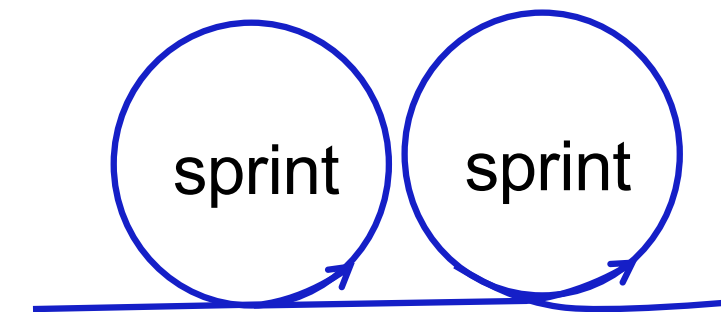
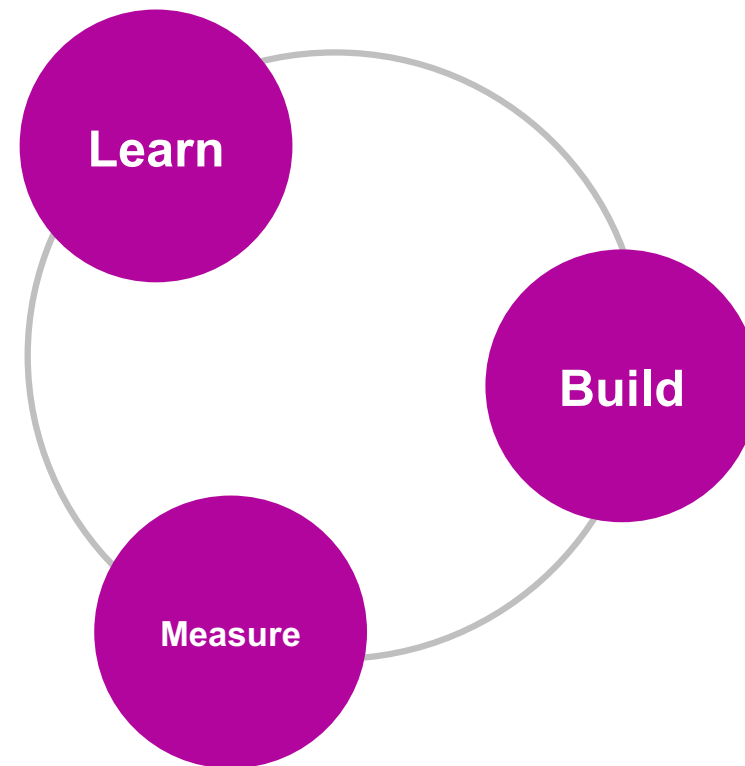


**Many paradigms,
shared premises?**



Problem space

Finding and defining the right problem



Solution space

Finding and fine-tuning the right execution

PRACTICES

Human-centered

Collaborative

Thinking by doing

Visualizing

Divergent and convergent

THINKING STYLES

Abductive reasoning

Reflective reframing

Holistic view

Integrative thinking

MINDSET

Experimental & explorative

Ambiguity tolerant

Optimistic

Future-oriented

DESIGN THINKING

Componential view of Design Thinking in the Management discourse - Hassi & Laakso 2011

Is the world ready?

**80% of companies report
providing a superior
customer experience**



8% of their clients agree

Bain and Company

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Doing Design Thinking: Conceptual Review, Synthesis, and Research Agenda

Pietro Micheli , Sarah J. S. Wilner, Sabeen Hussain Bhatti, Matteo Mura, and Michael B. Beverland

**Iteration and
experimentation**

**Problem
solving**

**Interdisciplinary
collaboration**

**Ability to
visualize**

**Gestalt
view**

**Abductive
reasoning**

**Tolerance of ambiguity
and failure**

**Blending rationality
and intuition**

**Design tools
and methods**

**Creativity and
innovation**

**User centeredness
and involvement**

**Themes in
design thinking
literature
(1985-2017)**

Table 3. Codes, Attributes, and Occurrence Frequency

Attributes	Frequency in the Data Set	Codes	Example Quote
Creativity and innovation ^a	104	Innovation Creativity Idea creation Discovering opportunities	Design thinking “is an approach that addresses product, process, and business model innovation” (Liedtka, 2011, p. 13).
User centeredness and involvement	83	User/customer involvement Human-centeredness Working with extreme users End-user profiling Empathy	“You have to know your customers not as statistics but as human beings” (Zaccai, interviewed in Lockwood, 2010a, p. 19).
Problem solving	73	Problem solving Wicked problem solving Constraints as inspiration Decision-making Challenge the norm Reframing Optimism	“If design methods and tools are well suited to addressing wicked design problems, then it would be logical to assume that these methods and tools could be useful for wicked problems outside the traditional design domain. It is this element of design practice that, when separated from the tangible and applied to intangible problems, is often termed Design Thinking” (Collins, 2013, p. 36).
Iteration and experimentation	64	Iteration Experimentation Prototyping Reflexivity Reflective practice	“Design thinking is characterized by trial-and-error learning through iterative forms, prototyping, and trials that test a range of possible solutions with end-users and other project stakeholders” (Beverland et al., 2015, p. 593)
Interdisciplinary collaboration	58	Collaboration Stakeholder involvement Multidimensional team Conflict negotiation Interactive process Involvement of outsiders Participatory design Persuasion and communication	“Collaboration is perhaps the most overlooked experience that is essential to design thinking. ... Cross-disciplinary collaborative teams are more likely to create innovative solutions than focused groups of like minded people since varying opinions and sources of expertise can lead to valuable insight” (Davis, 2010, p. 6536).

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Ability to visualize	41	Aesthetics Ability to visualize Elegance Style	“The act of moving from abstract thinking to visualizing ideas and then thinking on top of those visualizations is at the heart of design for innovation.” (Boni, Weingart, and Evenson, 2009, p. 409).
Gestalt view	35	Holistic approach Embrace complexity Integral intelligence Synthesis Systemic model Systems thinking	“Designers would think about the system as a whole and thereby envisage the consequences of their actions” (Dunne and Martin, 2006, p. 520)
Abductive reasoning	30	Abductive reasoning Emergent Generative	Abductive reasoning is “in opposition to deductive (from the general to the specific) and inductive (from the specific to the general) reasoning... [it is a] ‘logical leap of the mind’ or an ‘inference to the best explanation’ to imagine a heuristic for understanding the mystery” (Martin, 2010, pp. 40–41).
Tolerance of ambiguity and failure	30	Acceptance of failure Ambiguity Handle uncertainty Low risk behavior (opposite) Risk taking Tolerant of mistakes	“Facilitating the design thinking process involves helping teams develop a greater tolerance for, and ways of working through, this ambiguity” (Glen, Suci, Baughn, and Anson, 2015, p. 189)

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Blending rationality and intuition	25	Balance between declarative and modal logic Balance between exploration and exploitation Balance between intuitive and analytical thinking Balance between reliability and validity Divergent and convergent thinking Emotional and rational	“Design thinking balances exploitation and exploration, reliability and validity, analysis and intuition, and declarative logic and modal logic” (Lafley et al., 2013, p. 10)
Design tools and methods		37 different types, including personas, journey maps, brainstorming, prototypes, sketching and storytelling	“Both scholarly and practitioner literature have exhibited widespread interest in the application of design methods for promoting innovation, often referred to as the use of ‘design thinking’” (Seidel and Fixson, 2013, p. 19).

Table 4. Essential Design Thinking Tools and Methods

Tools	Frequency in the Sample
Ethnographic methods	37
Personas	9
Journey map	11
Brainstorming	32
Mind map	4
Visualization	40
Prototyping	41
Experiments	33

Key takeaways:

- 1. Design thinking IS NOT one method**
- 2. Design thinking IS NEVER a linear process**
- 3. There ARE many good tools and methods, but you HAVE TO know their constraints**
- 4. All this ambiguity IS SUPER GREAT because it gives you a lot of freedom! :)**
- 5. Design thinking IS ALWAYS about managing tensions (of course we can't “productize” design or designers)**

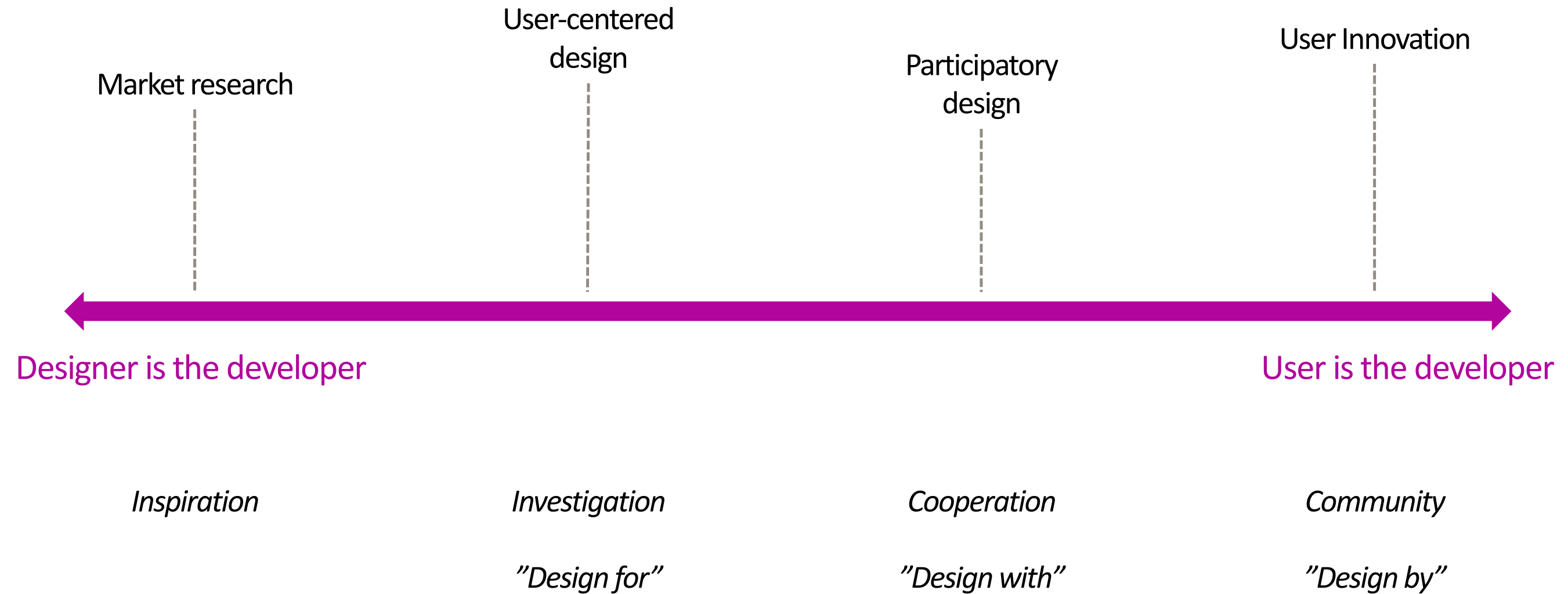
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Why start with the users?



Degrees of interaction



The problem of putting people into boxes?

Male

Born in 1948

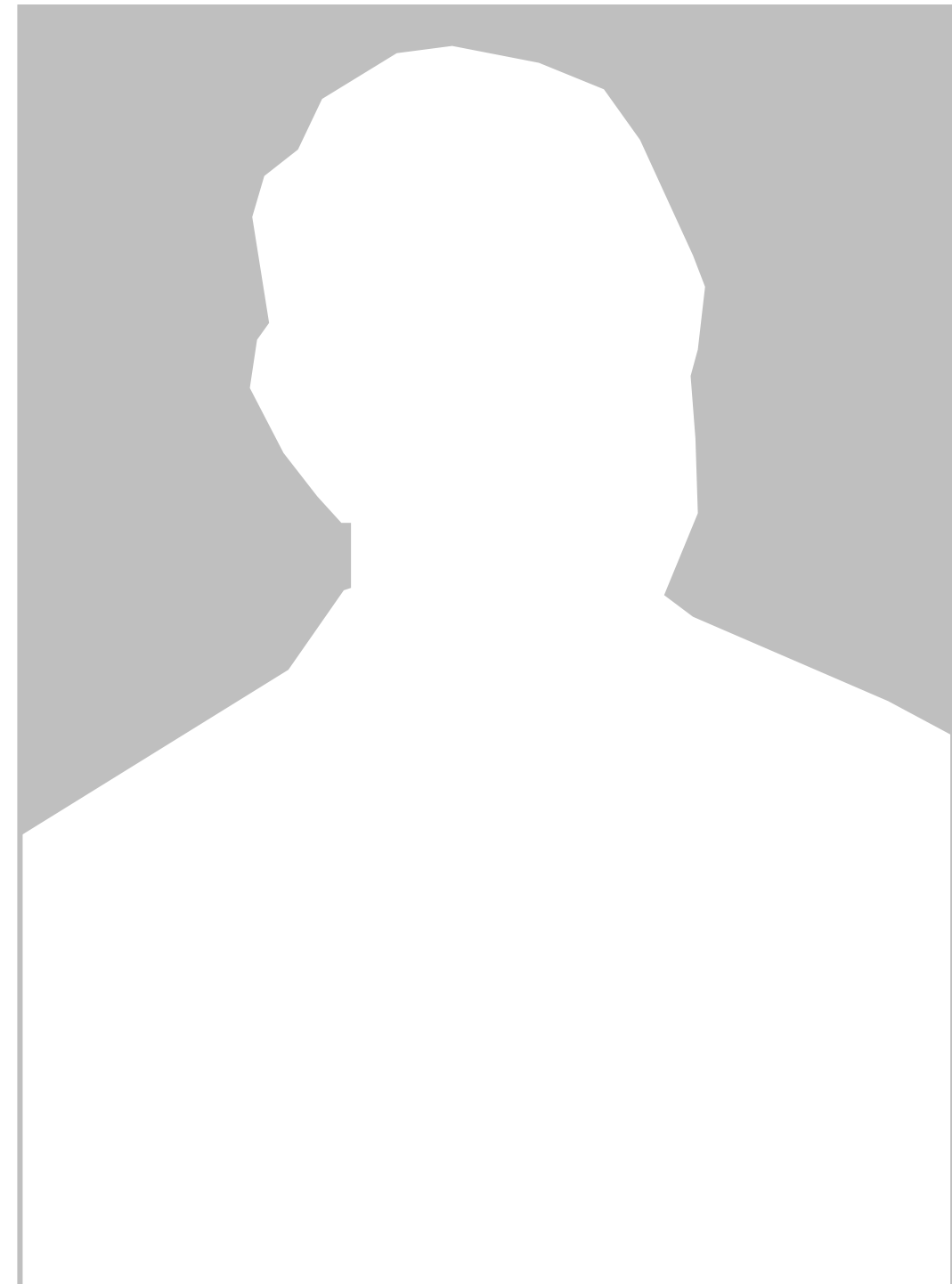
Grew up in Great Britain

Married with children

Successful and wealthy

Likes dogs

Spends his winter holidays in the Alps



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Task: Map the stakeholders who are connected to your problem statement

- Identify stakeholders that are directly (primary) and indirectly (secondary) connected to your problem statement

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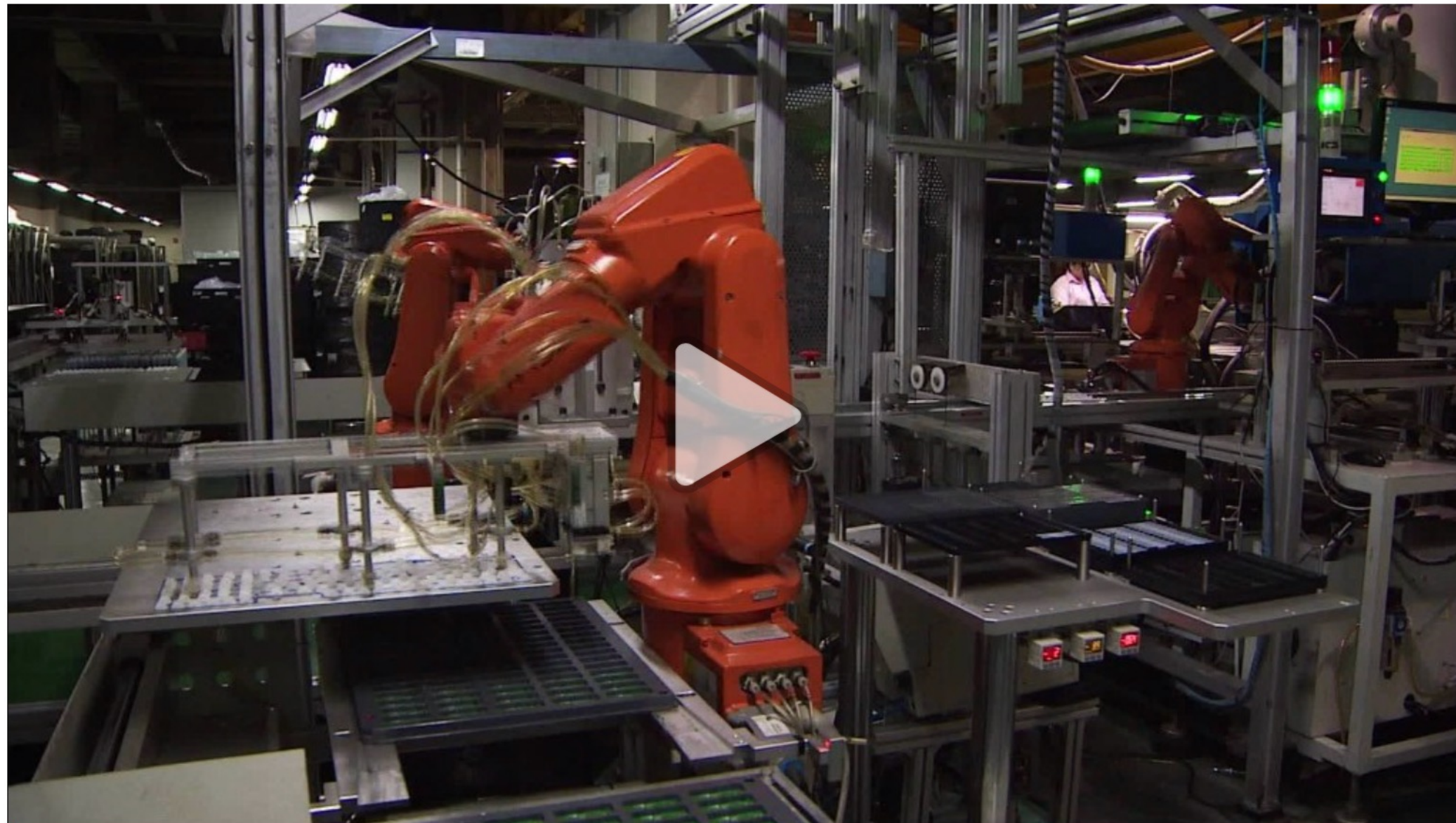
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Internet of Things

Smart robots could soon steal your job

by Ivana Kottasova @ivanakottasova

🕒 January 15, 2016: 1:33 PM ET



Robots are taking over China's factory floors

Task: List generally accepted assumptions

- As a group, use post-its to list 10-20 generally accepted assumptions related to your problem statement.
- The assumptions can be abstract or concrete. Use the identified stakeholders as help

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Superpower of a 7-year-old

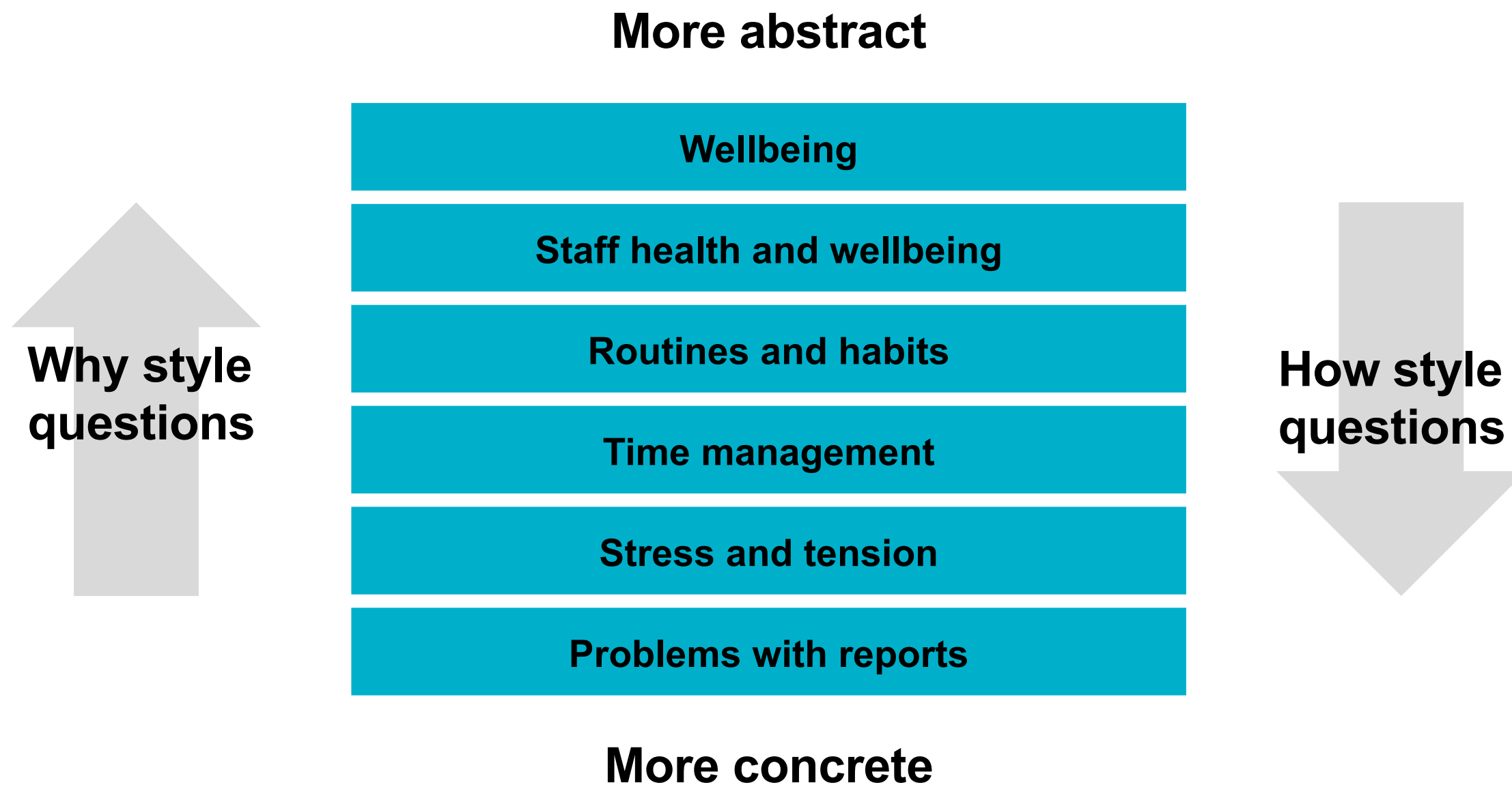
The Five Whys

Simple way of getting to the root causes of an issue.

"I want to own my own business"

- 1. Why? – It will allow me to have greater control over how I spend my time*
- 2. Why? – I can have more flexibility in my life*
- 3. Why? – I will be able to work from home*
- 4. Why? – I will be able to spend more time with my son and daughter*
- 5. Why? – For me, family comes first*

The ladder of abstraction



Task: Progress toward right level of analysis with 5 whys

- First, individually, select an assumption/other statement related to your problem area. Do the 5 whys exercise
- Then, share your answers with the group. Analyze, which whys (and which level of whys) seem most promising in terms of developing your design?

5 WHYS

Goal/need/observation: _____

Why is this? Because

Why is this? Because

Why is this? Because

Why is this? Because

Why is this? Because

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Q&A

MORE INFORMATION

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