



ASSOLOMBARDA

# Design Thinking & Design Doing: il nuovo ruolo del prodotto in un contesto mutevole

Interviene **Venanzio Arquilla** Professore associato del Dipartimento di Design del Politecnico di Milano e Coordinatore Experience Design Academy

# Introduzione

- *Il ciclo di incontri «Ripartire dall'innovazione»*
- *Il webinar di oggi:*
  - *i temi che tratteremo e il relatore che ci accompagnerà*
  - *alcune informazioni organizzative*

## Venanzio Arquilla

**Associate Professor of the Politecnico di Milano  
POLIMI Design School / Secretary of the Bachelor Degree  
on Product Design and the Master Degree on Integrated  
Product Design**

My research activities deal with UX Design, design innovation tools and methodologies, service design, design policies, including different research on innovation and technological transfer of design at national and international levels. Founder of Politecnico di Milano's Laboratorio Co.Meta - Design for Autism. Founder and Director of the Experience Design Academy - POLI.design.

Venanzio Arquilla - 2020  
#UXDpolidesign  
venanzio.arquilla@polimi.it

A group of people are shown from a low angle, holding onto a thick black rope that stretches across the frame. The background is a clear, light blue sky. The people are wearing casual summer clothing. The text "Do you copy?" is overlaid in a white, cursive font across the center of the image.

*Do you copy?*

# DI COSA PARLEREMO

1. Design
2. Design Thinking & Creative Problem Solving
3. Lean UX
4. Creative Confidence

# DESIGN?

*An open issue.*

“Industrial Design is a **strategic problem-solving process** that drives innovation, builds business success, and **leads to a better quality of life** through innovative products, systems, services, and experiences.

Industrial Design bridges the gap between what is and what’s possible.

It is a **trans-disciplinary profession** that harnesses creativity to resolve problems and co-create solutions with the intent of making a product, system, service, experience or a business, better. At its heart, Industrial Design provides a more optimistic way of looking at the future by **reframing problems as opportunities**.

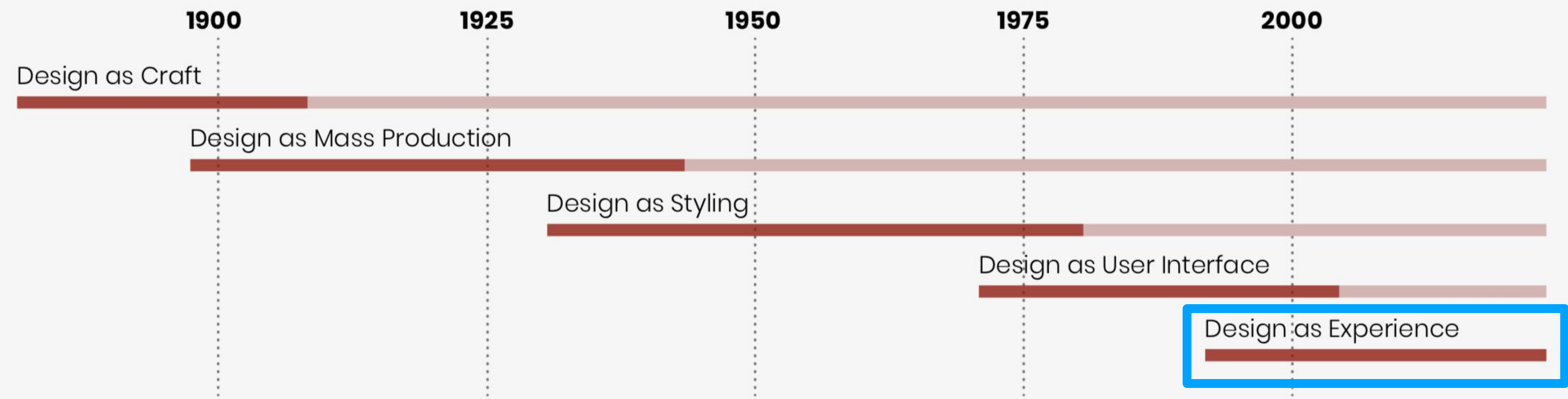
It links innovation, technology, research, business, and customers to provide new value and competitive advantage across economic, social, and environmental spheres.”

# DESIGN EVOLUTION

**An evolving discipline in relation to the context (historical, technological, cultural, social ...).**



# DESIGN EVOLUTION



1850



1945



1962



2007



2016

David Laituri in *The Industrial design reference + specification book*, Rockport (2013)

# Thonet

**Michael Thonet (1796-1871)**

Vienna

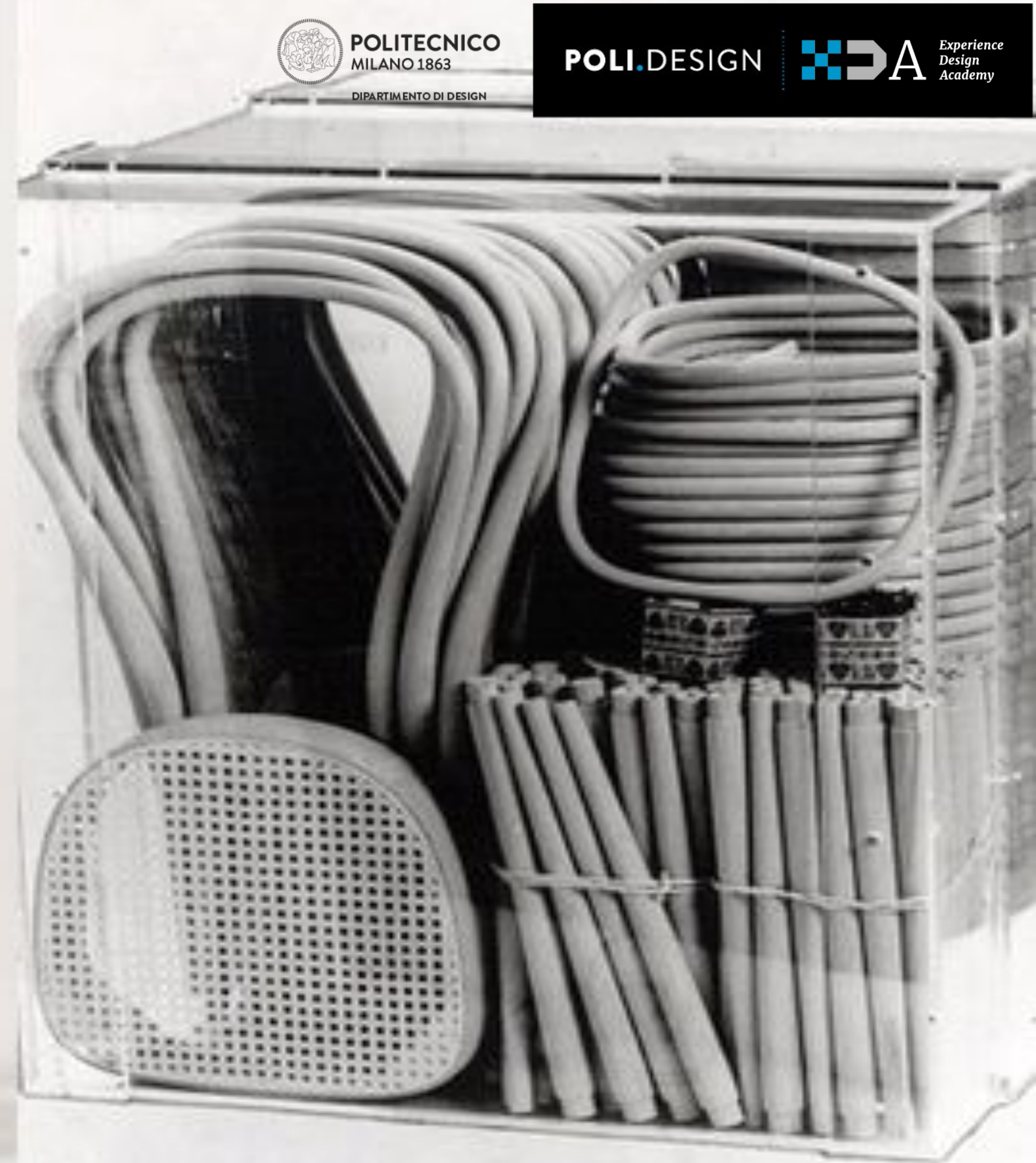
**Patent on Bended Wood**

1841 France, UK, Belgium

1842 Austria

**Chair n.14**

50,000,000 pieces sold over 40 years



POLITECNICO  
MILANO 1863

DIPARTIMENTO DI DESIGN

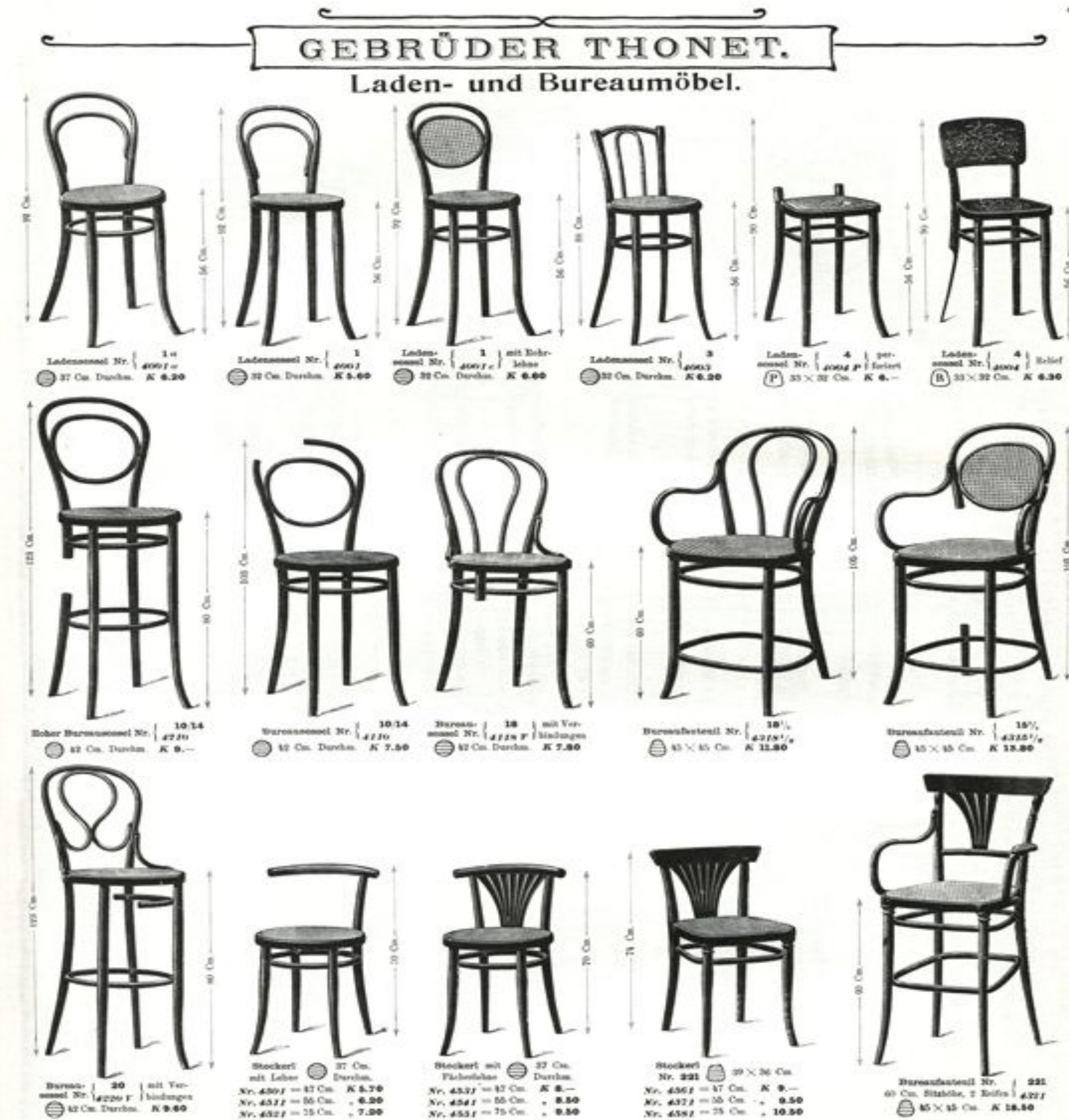
POLI.DESIGN



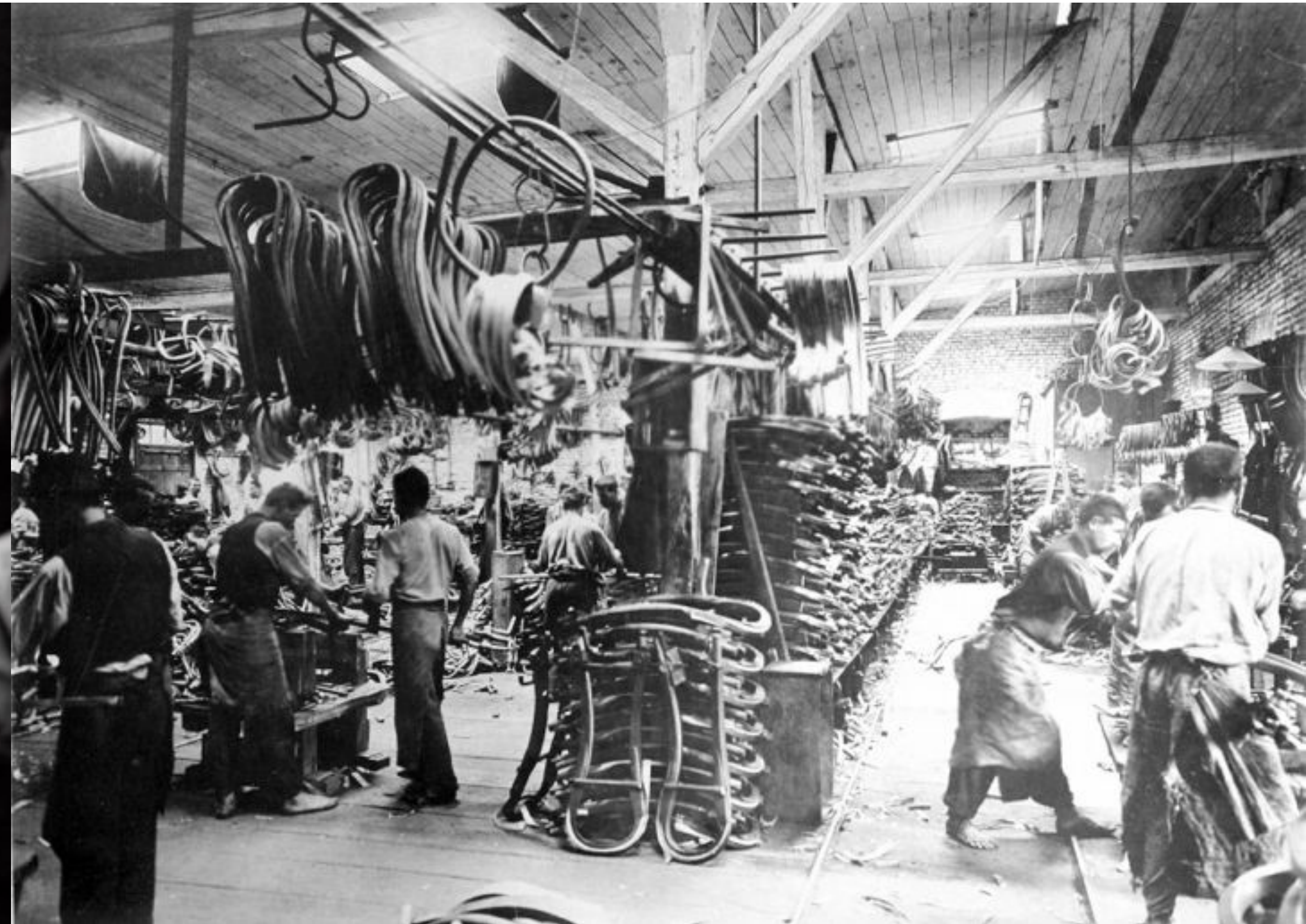
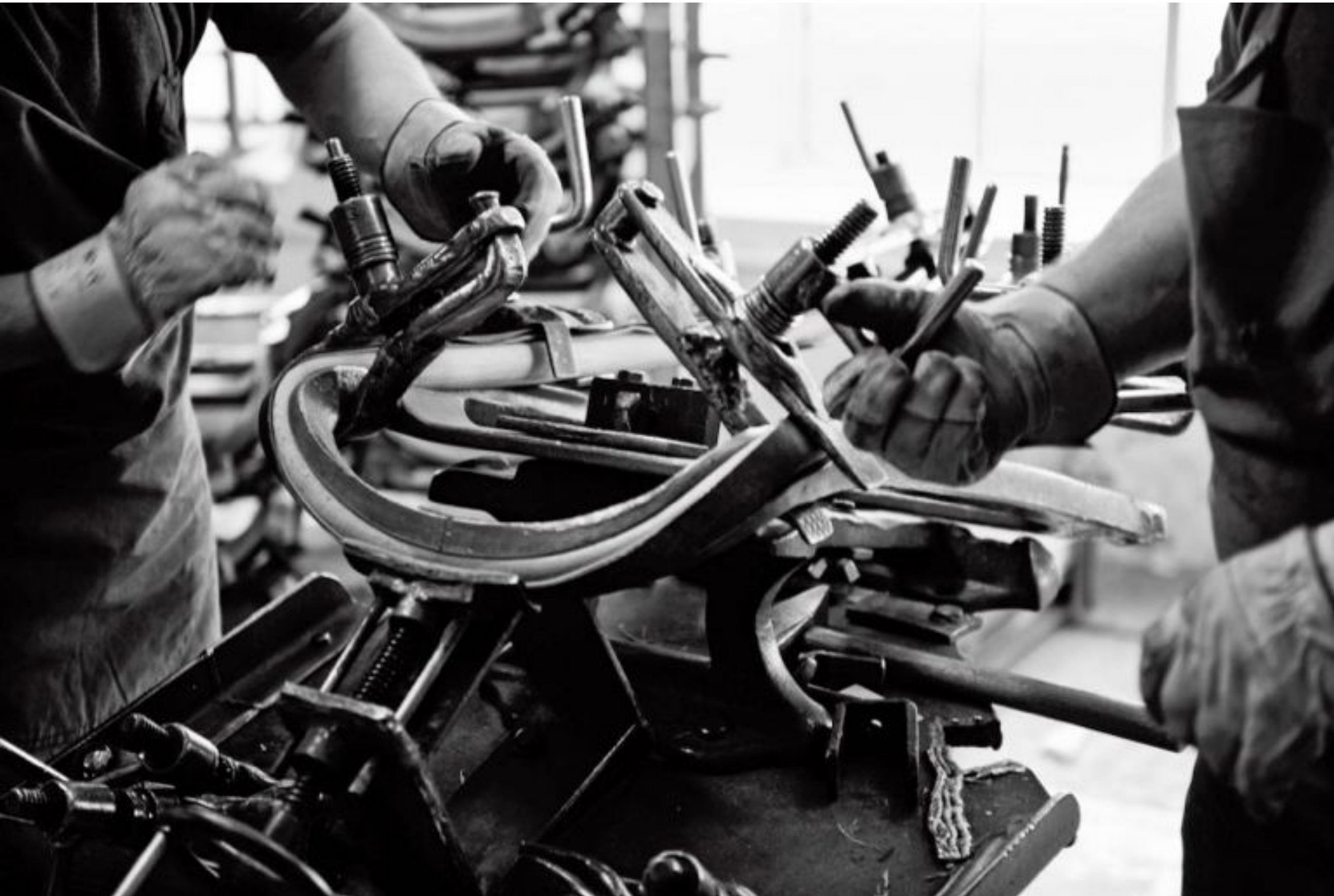
Experience  
Design  
Academy

1853 Gebruder Thonet  
1856 The first workshop for mass production of furniture

Chair n.14  
50,000,000 pieces sold over 40 years



# technology and production

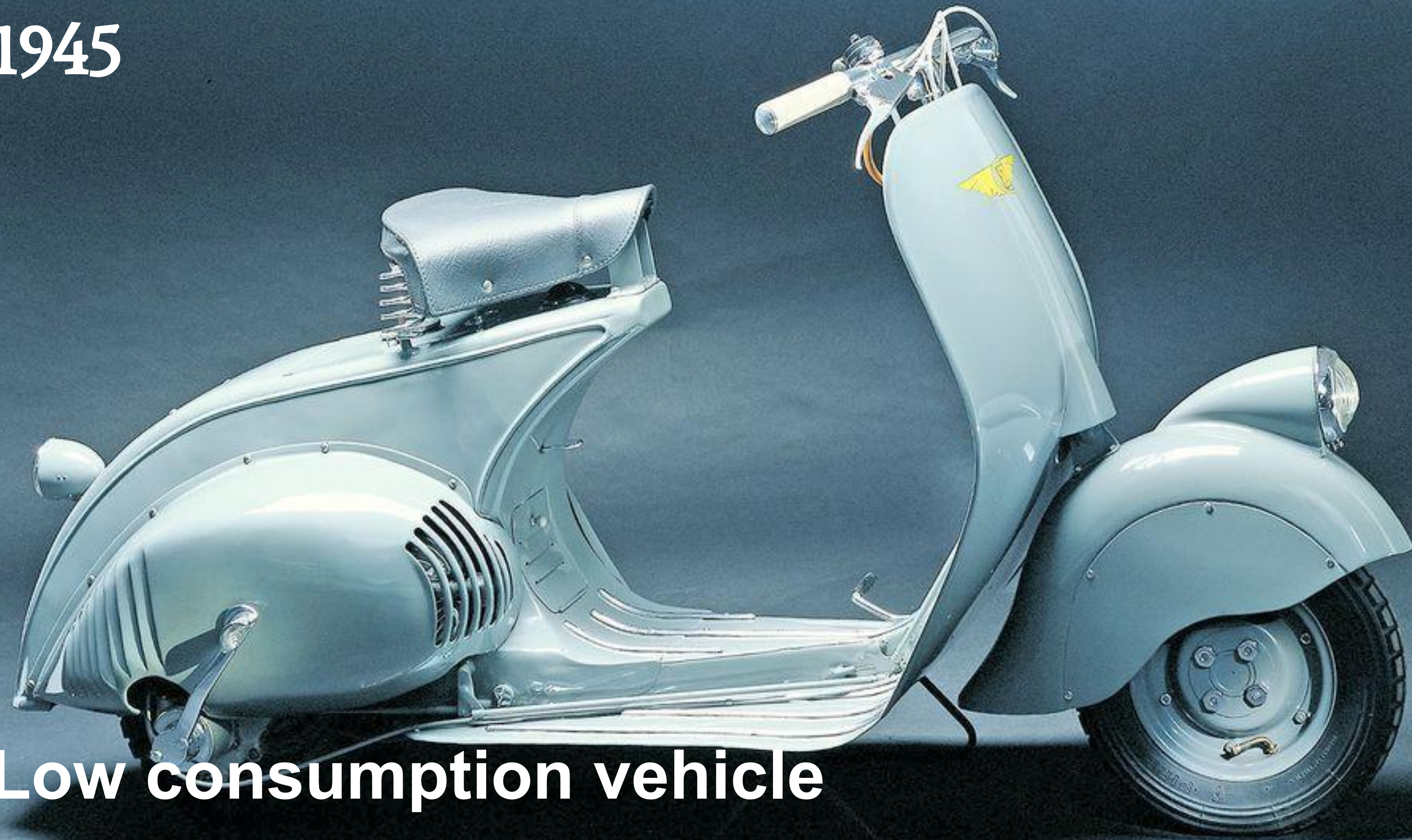


Estensione della serie, le sedie a dondolo. Esperienza utente massimizzata verso il sistema prodotto



# VESPA PIAGGIO

1945



Low consumption vehicle

Unisex, suitable for every kind of streets



# VESPA PIAGGIO

## 1945

T. IX TELAIO — CHASSIS — FRAME — FAHRGESTELL — CHASIS

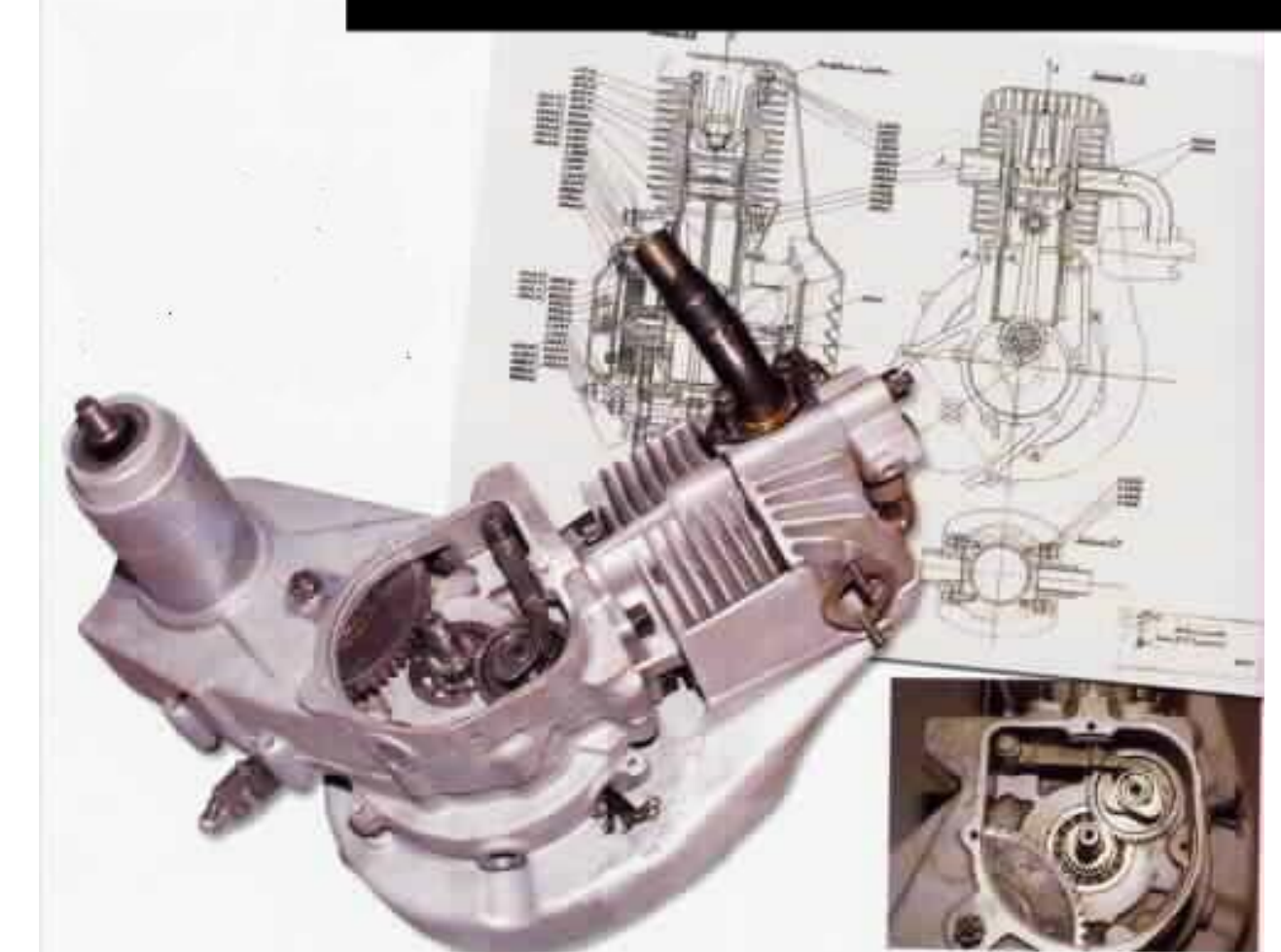
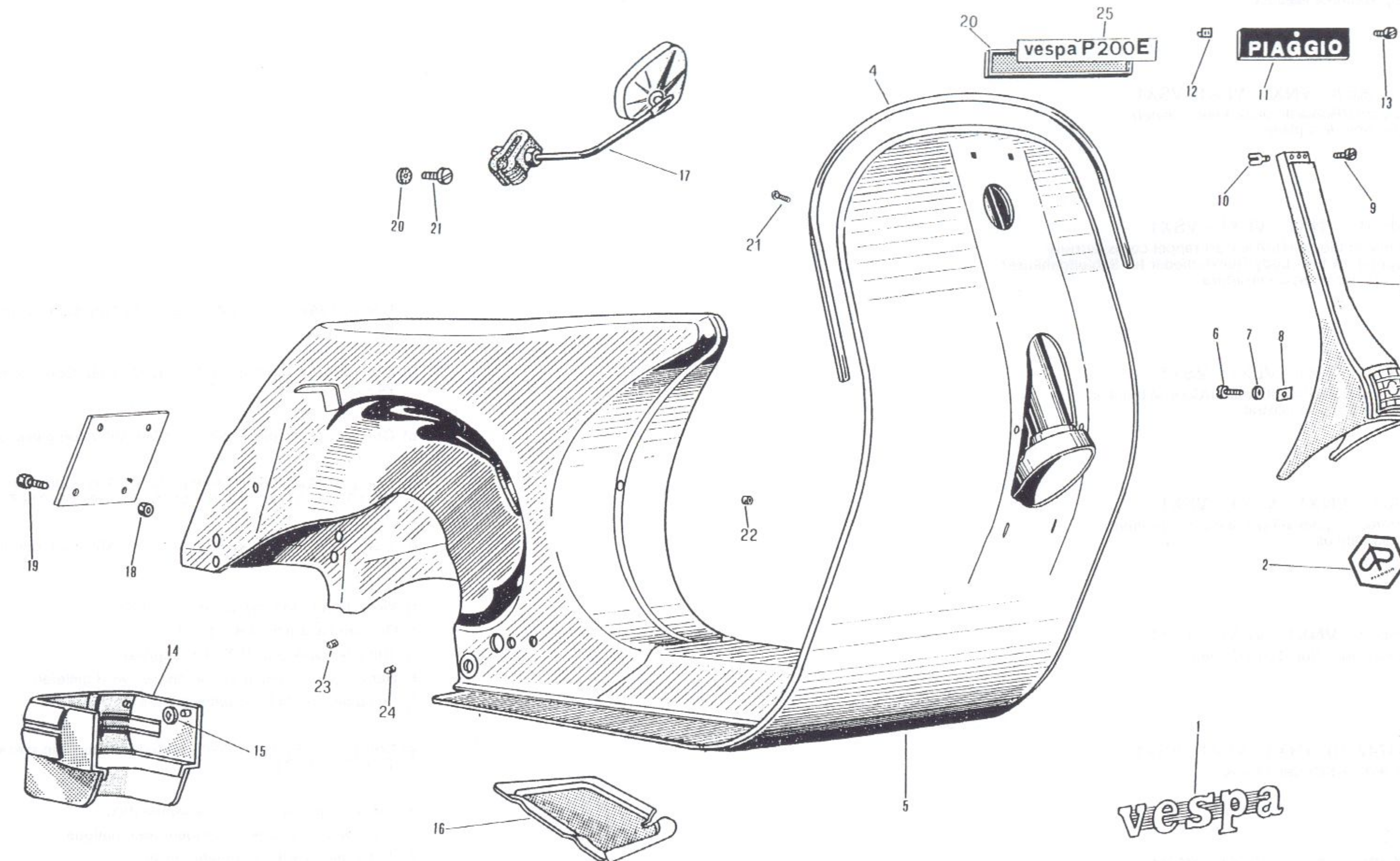


POLITECNICO  
MILANO 1863  
DIPARTIMENTO DI DESIGN

POLI.DESIGN



Experience  
Design  
Academy



# RADIO BRIONVEGA TS 502

1962

ZANUSO & SAPPER

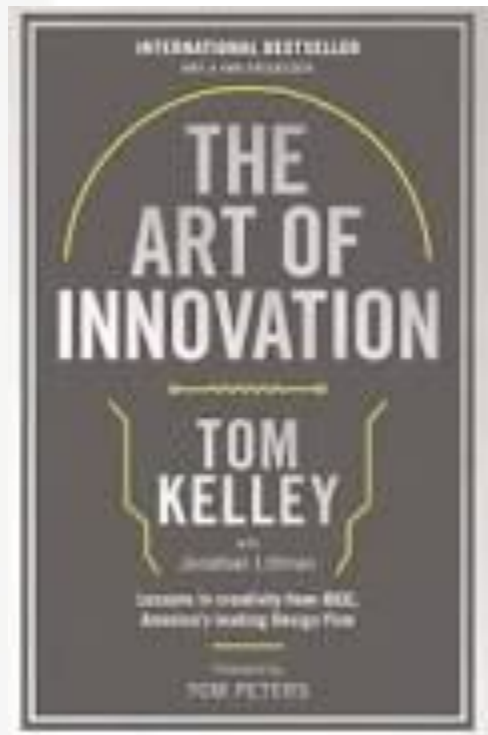
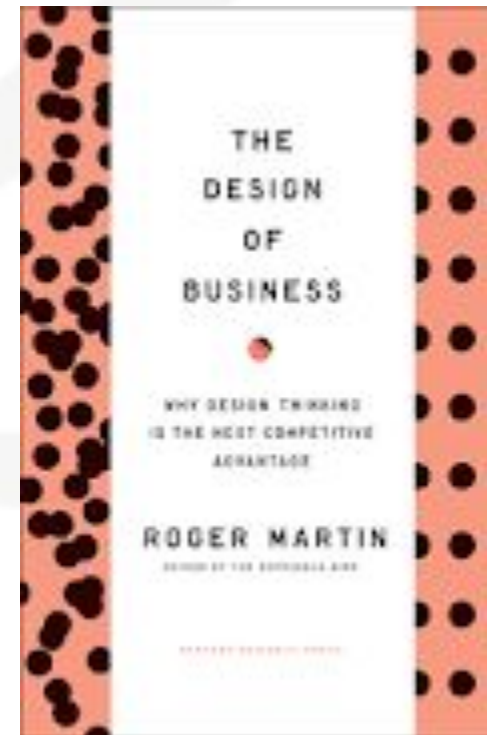




# DESIGN & BUSINESS

Design as a crucial innovation driver

# DESIGN & BUSINESS



## The large consulting firms are the major M&A driver

21 new acquisitions of creative agencies or designer-founded startups noted in 2017.

2017 JAN - FEB	MARCH	MAY	JUNE	JULY	AUGUST	OCTOBER	SEPTEMBER	DECEMBER
<b>Idean</b> acquired by Capgemini  <b>Unity&amp;Variety</b> acquired by Salesforce  <b>Sequence</b> acquired by Salesforce  <b>Dribbble</b> acquired by Tiny  <b>DeviantArt</b> acquired by Wix	<b>JWalk</b> acquired by Shiseido	<b>The Monkeys and Maud</b> acquired by Accenture	<b>Market Gravity</b> acquired by Deloitte  <b>Intrepid</b> acquired by Accenture	<b>Maya</b> acquired by BCG  <b>Clearhead</b> acquired by Accenture	<b>Wire Stone</b> acquired by Accenture  <b>Acne</b> acquired by Deloitte	<b>Cooper</b> acquired by Designit/Wipro  <b>Telepathy</b> acquired by ServiceNow (CEO: John Donahoe)  <b>Brand.ai</b> acquired by InVision  <b>YARD</b> acquired by Kyu Collective.	<b>Matter</b> acquired by Accenture  <b>VLT Labs</b> acquired by McKinsey & Co  <b>TandemSeven</b> acquired by Genpact.	<b>Rothco</b> acquired by Accenture

2018

We're excited to join Verizon in their quest to put customers in control of their connectivity and create breakthrough live and digital experiences.

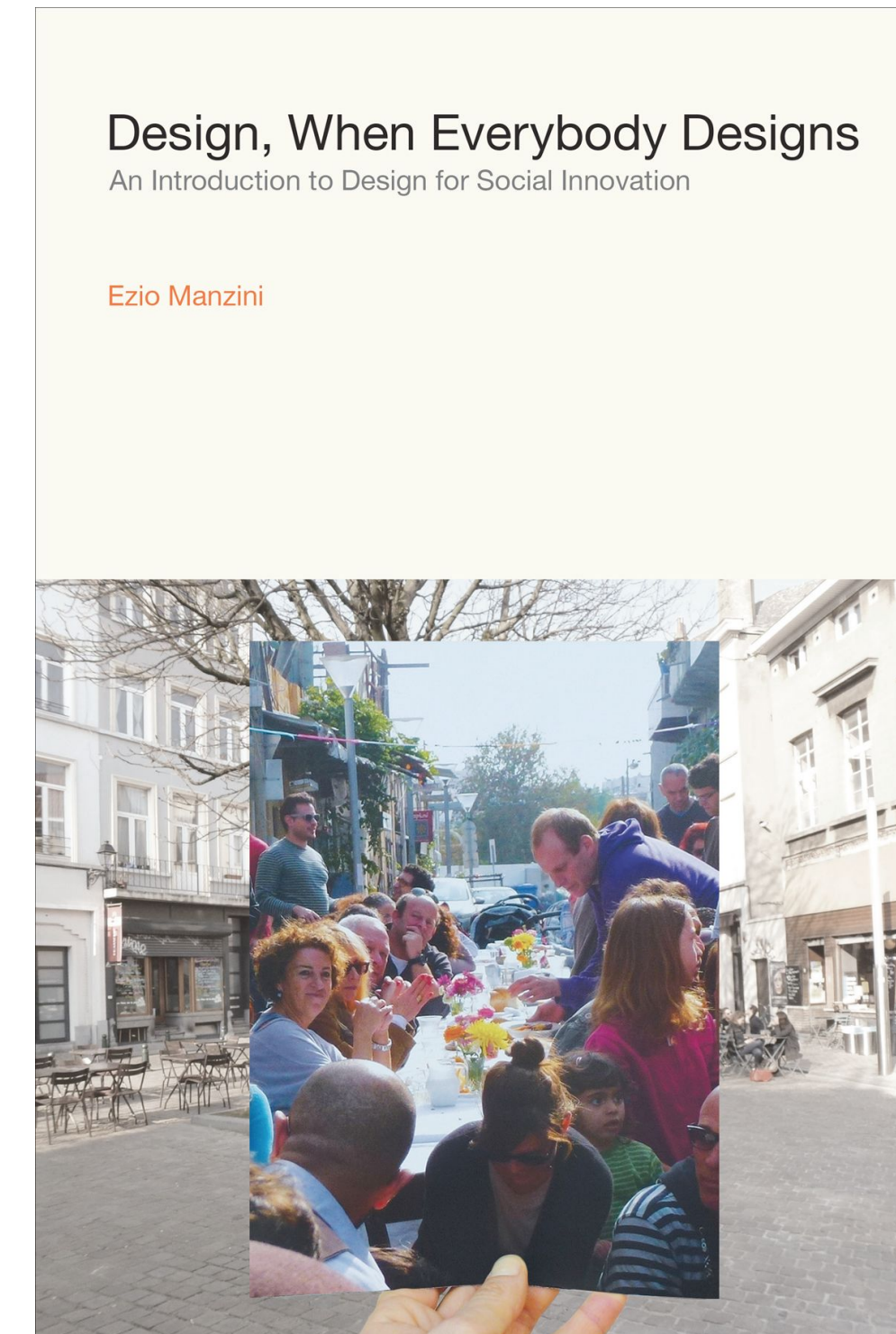
—**Moment** acquired by Verizon March 2018



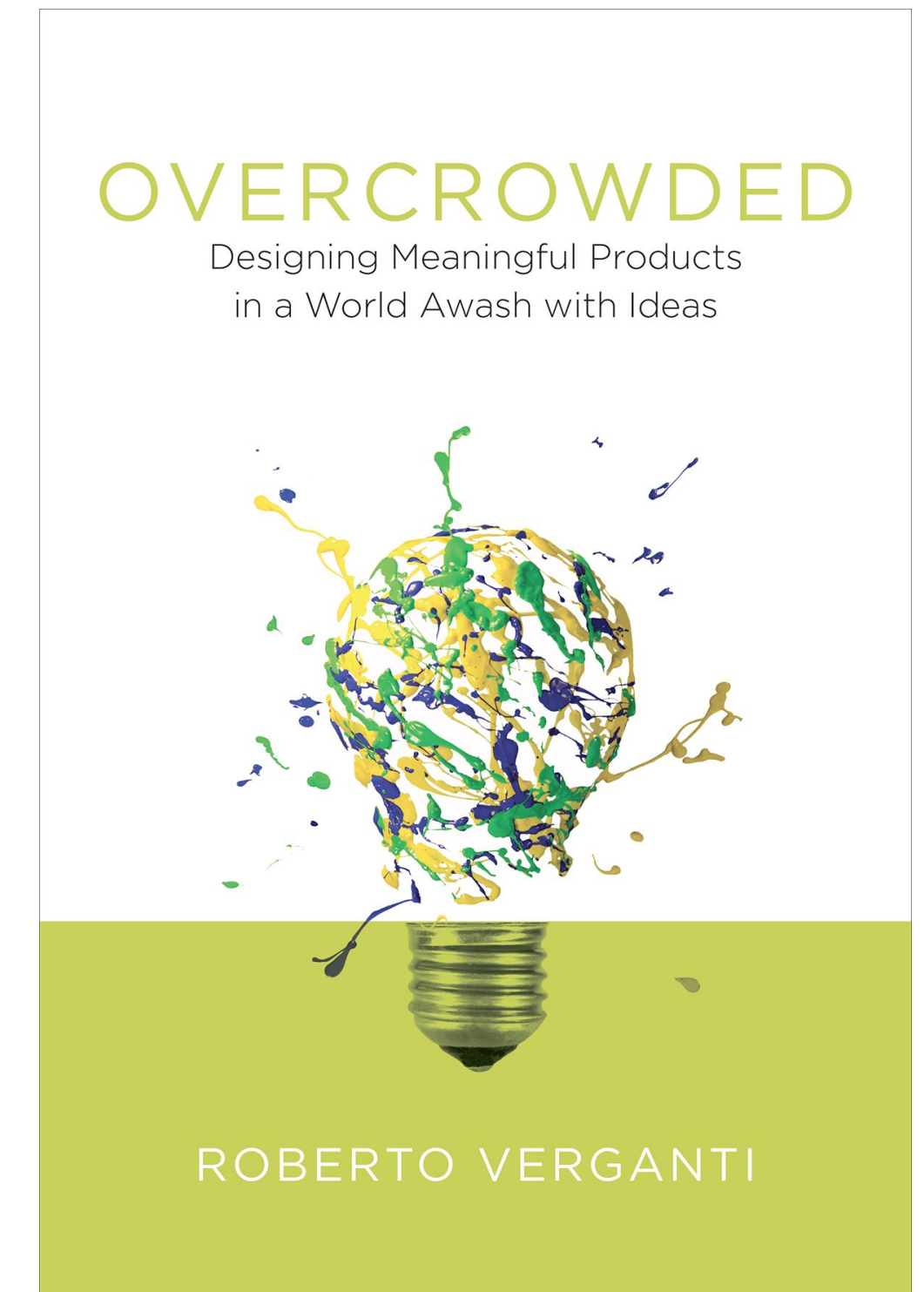
R. Verganti,  
DESIGN-DRIVEN INNOVATION  
Harvard business press 2009



F.Zurlo,  
LE STRATEGIE DEL DESIGN  
Disegnare il valore oltre il prodotto,  
ed. Libraccio 2012



E.Manzini,  
DESIGN, WHEN EVERYBODY DESIGNS  
An Introduction to Design for Social Innovation,  
MIT PRESS 2015

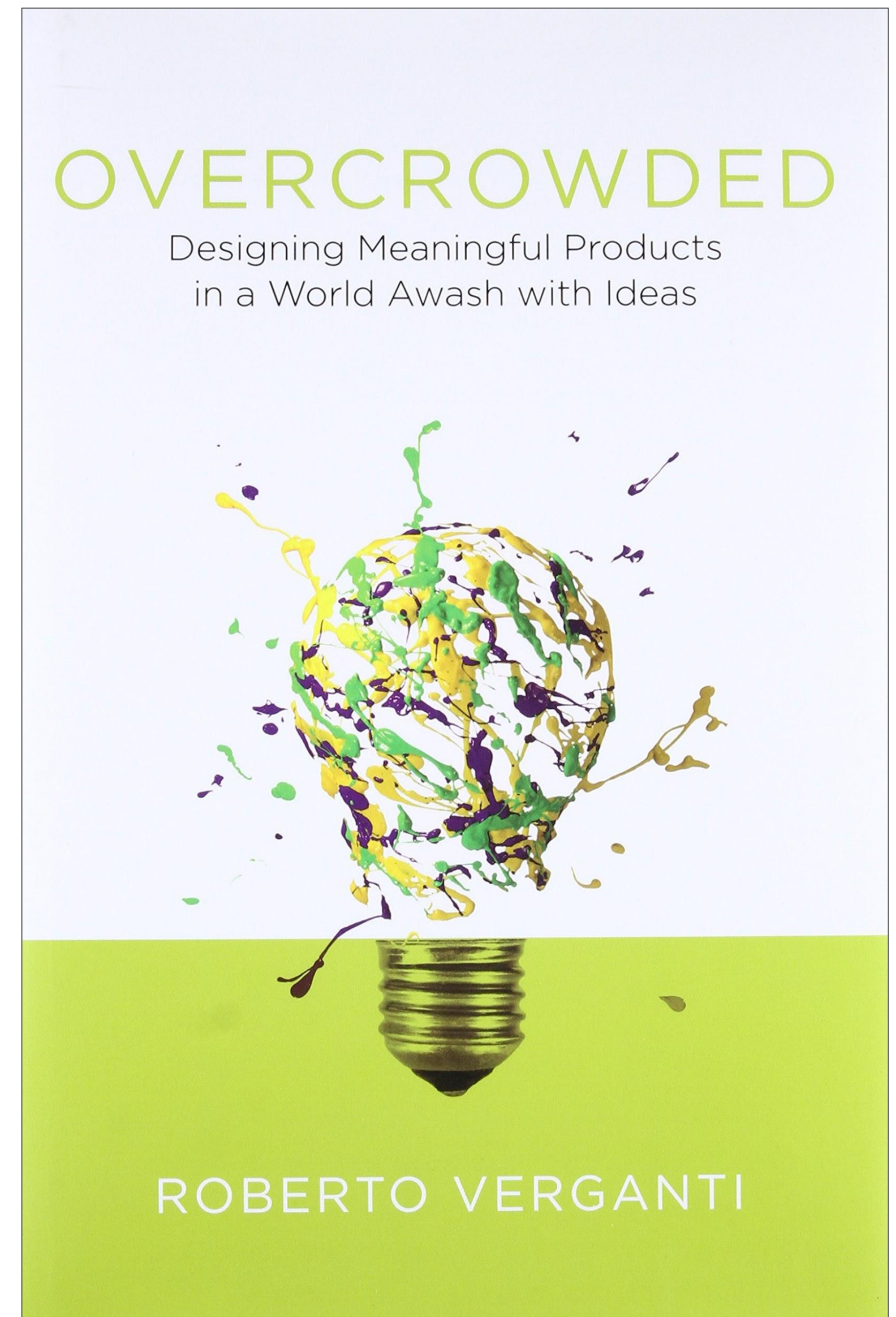


R. Verganti,  
OVERCROWDED  
MIT PRESS 2017

## DESIGN, INNOVATION AND STRATEGY @POLIMI

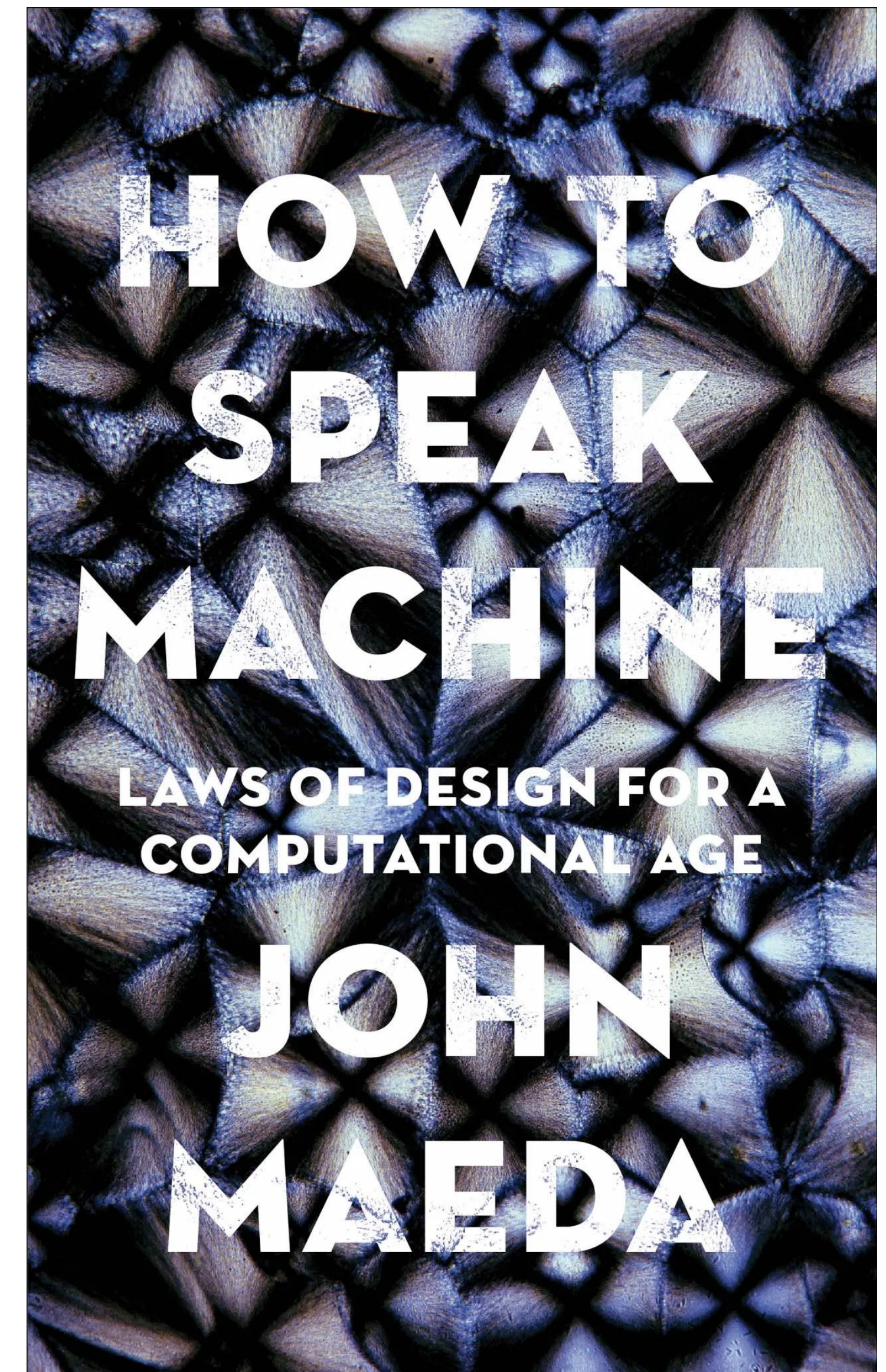
“To succeed in an overcrowded world we need a **meaningful direction**. To focus our creativity and the creativity of others towards a new, shared purpose.”

Roberto Verganti, Politecnico di Milano



# COMPUTATIONAL DESIGNER

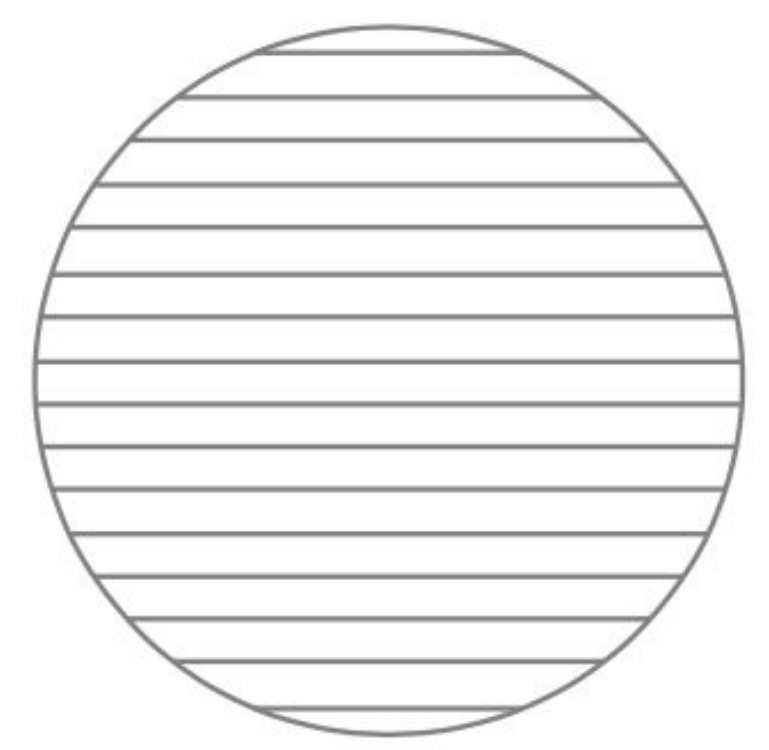
A new generation of professionals



# Review:

## There are Three Types of Design

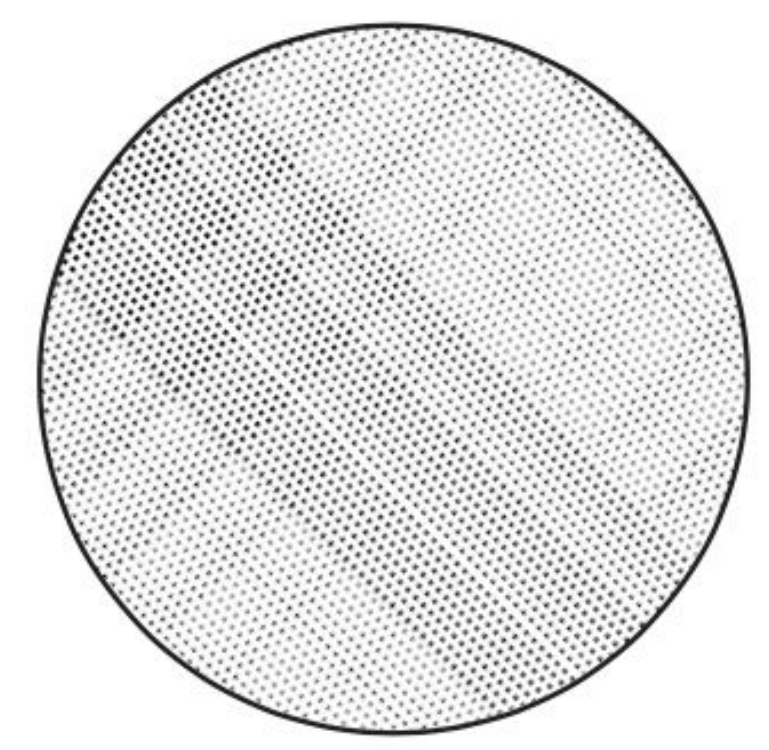
The last report reviewed the difference between Classical and Computational Design. This was somewhat controversial, but we review it here again.



**DESIGN: "CLASSICAL DESIGN"**

There's a right way to make what is perfect, crafted, and complete

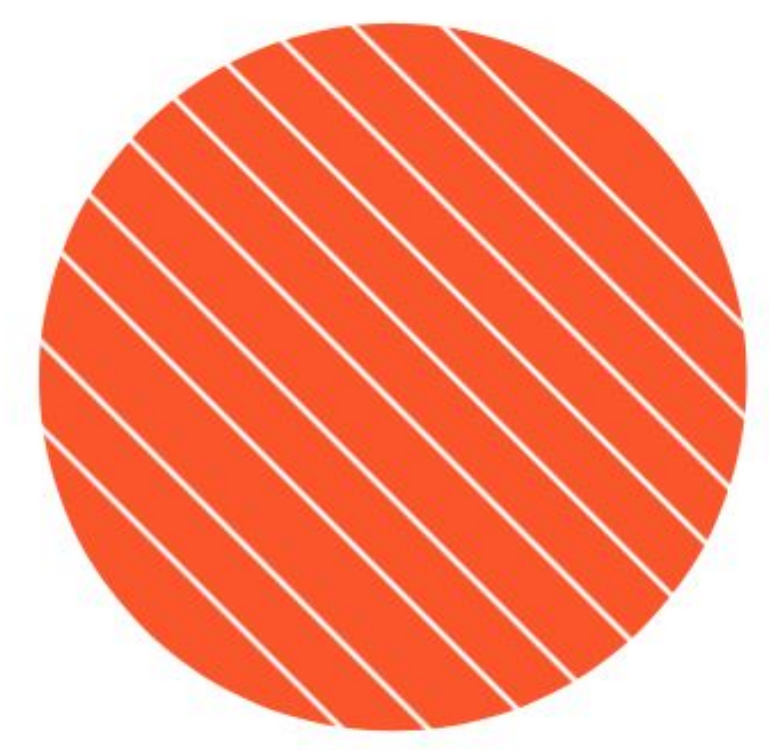
Driver/ the Industrial Revolution, and prior to that at least a few millennia of ferment.



**BUSINESS: "DESIGN THINKING"**

Because execution has outpaced innovation, and experience matters

Driver/ the need to innovate in relation to individual customer needs requires empathy.



**TECHNOLOGY: "COMPUTATIONAL DESIGN"**

Designing for billions of individual people and in realtime, is at scale and TBD

Driver/ the impact of Moore's Law, mobile computing, and the latest tech paradigms.

## Classical Designers are slowly beginning to evolve

### The top 10 most critical issues and challenges currently facing design

1. **(Classical)** Design not having a "seat at the table"
2. **Diversity in design and tech**
3. Ethics in design
4. Education cost and equity of access
5. Consumer vs. social impact focus
6. Generational differences in the workforce
7. Environmental impacts of design
8. **Algorithm bias**
9. **Advertising supported content model**
10. **Dark UX patterns**

### The top 10 emerging trends to have the biggest impact on design

1. **AI and machine learning**
2. **Augmented Reality**
3. **Virtual Reality**
4. **Behavior tracking and modeling**
5. **3D printing**
6. **Distributed teams and virtual workplace**
7. **Democratization of design**
8. **Algorithmic design**
9. **Crowdsourcing and open source**
10. **Facial and voice recognition**

**Highlight** corresponds to computational design.



## Learn user researcher skills and principles to grow

### The top 10 most valuable design skills for the future

1. Adaptability to tech and social change
2. Empathy
3. Communication skills
4. Asking good questions
5. Cross-functional skills
6. Storytelling
7. Cross-cultural skills
8. Observation and listening
9. Psychology and human behavior
10. Managing complexity

Note that many of these skills are exercised with expertise by User Researchers.

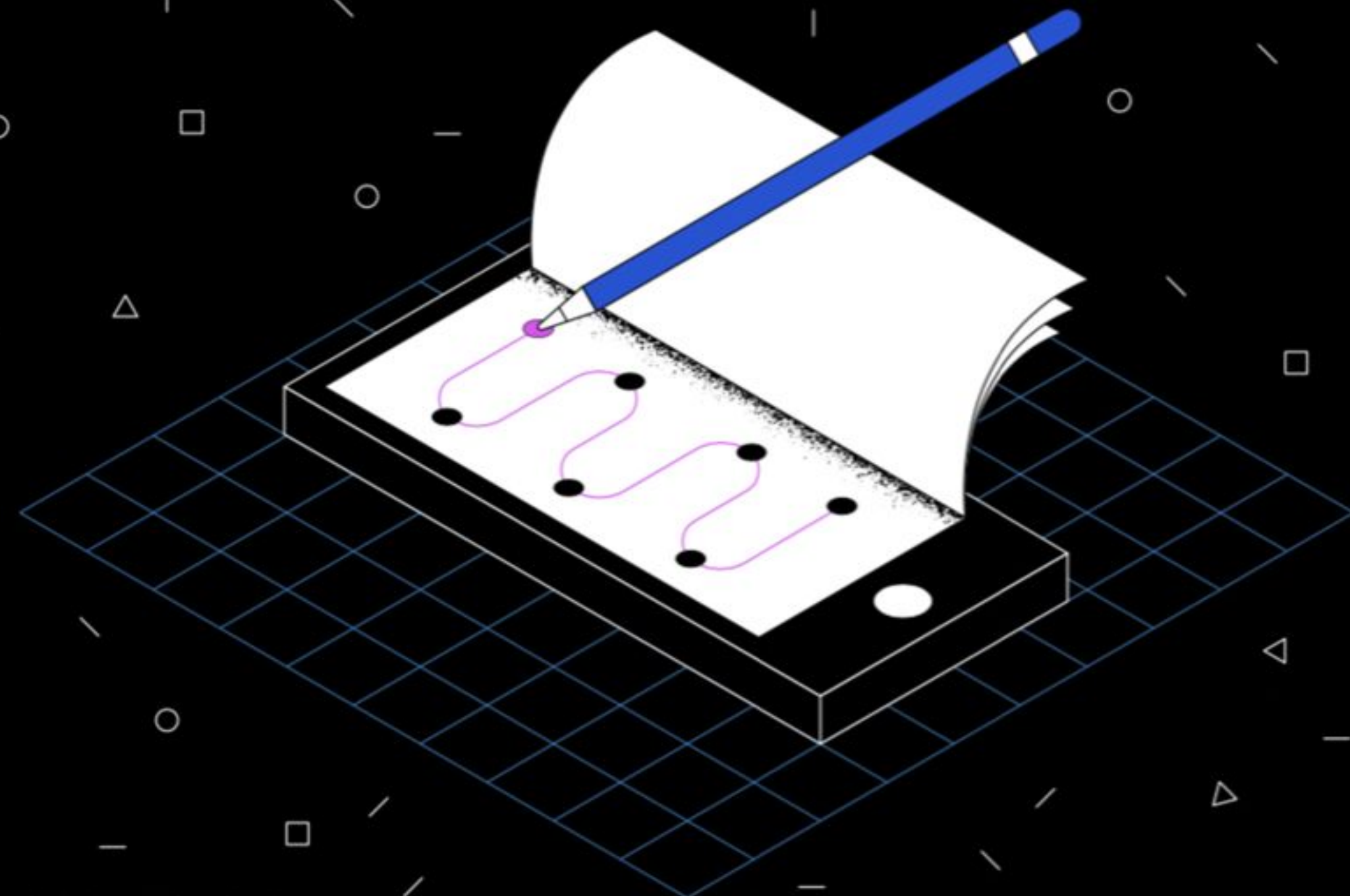
To learn more about User Research [see Erika Hall's work](#)

Surprisingly very few companies conduct qualitative user research.

Early-stage start-ups surveyed by Albert Lee/Dayna Grayson that use qualitative research: 12%, Mid-stage: 32%, Late-stage: 46%

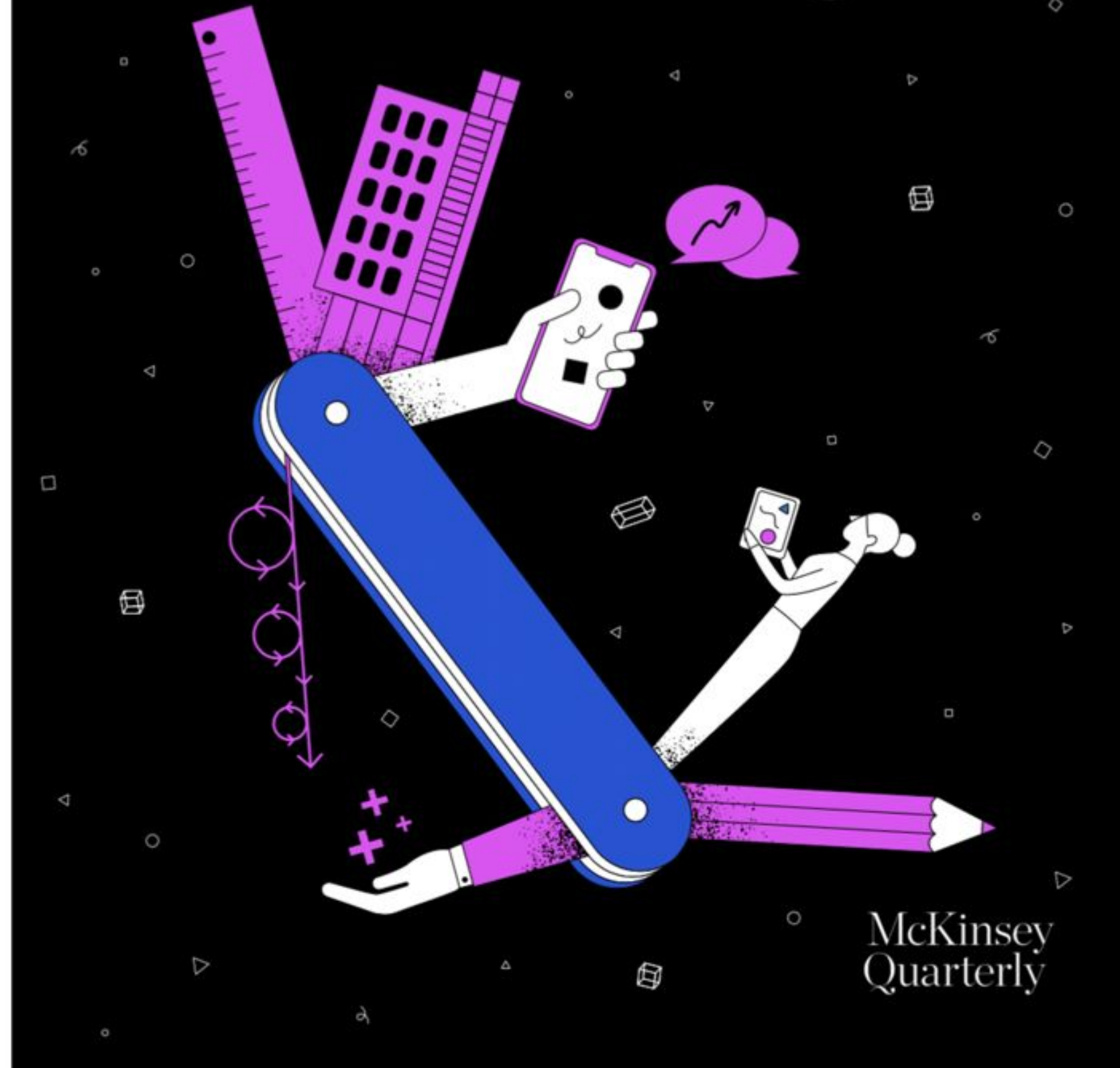
–[NEA Future of Design in Start-ups 2017](#)

# More Than a Product: It's User Experience

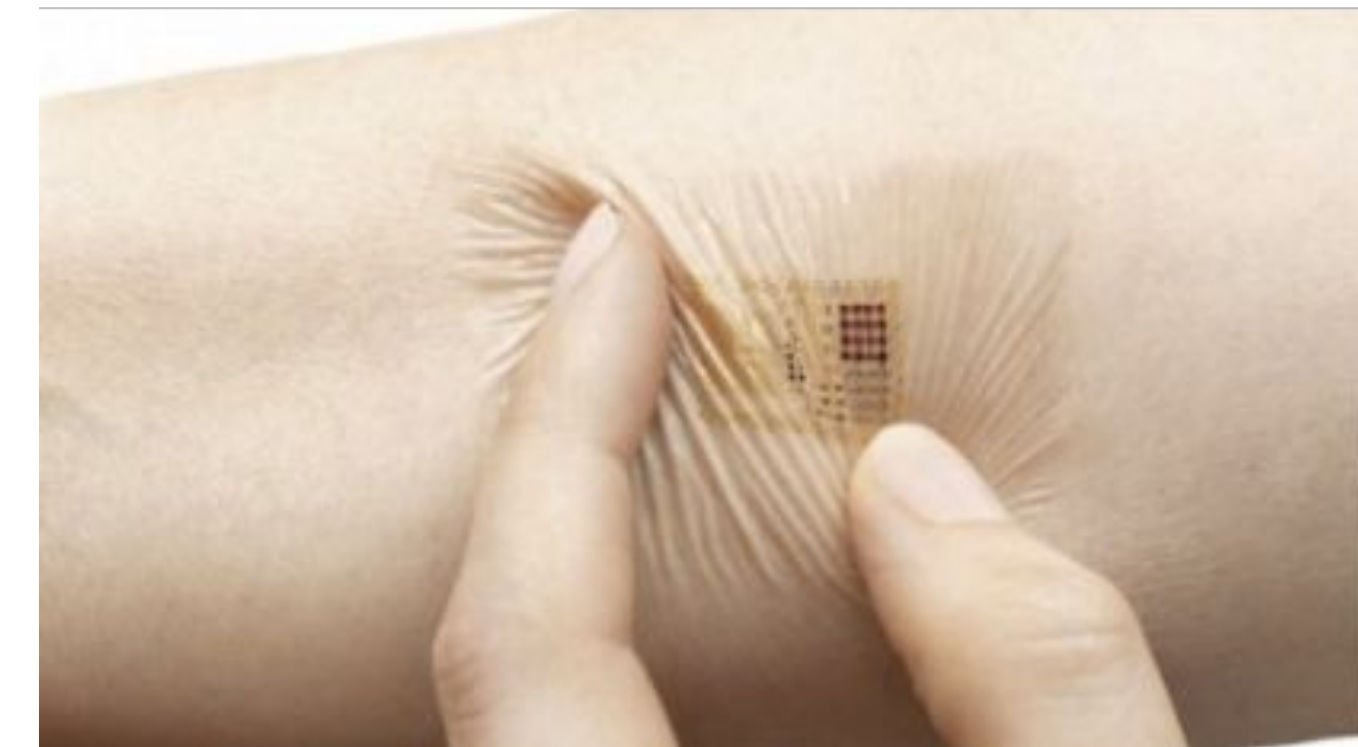
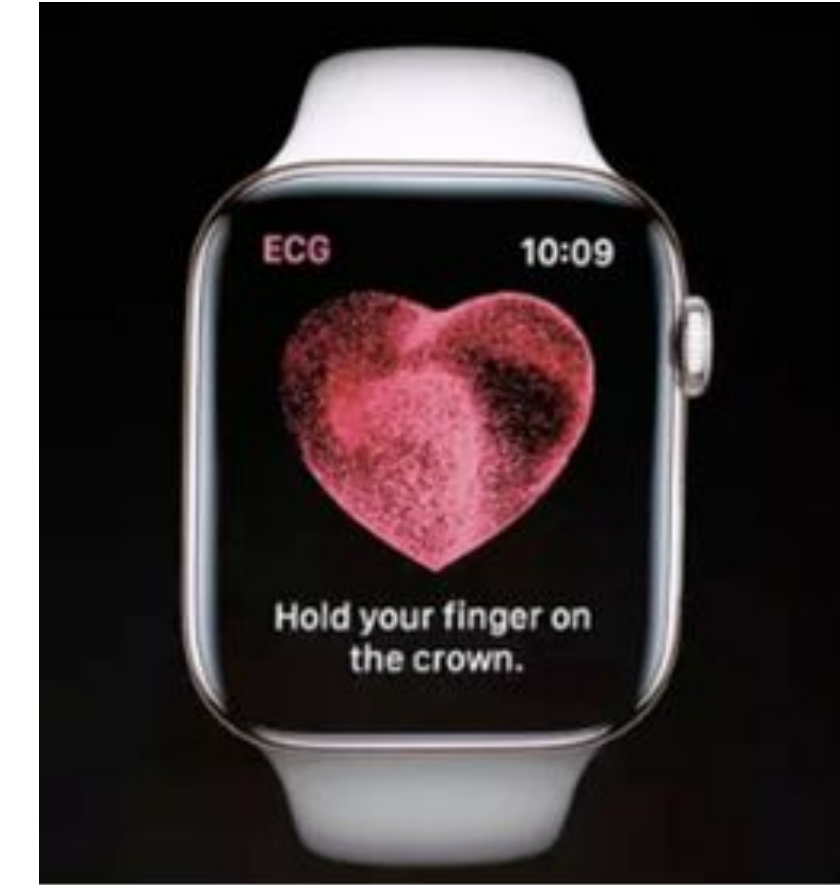


The Business Value of Design

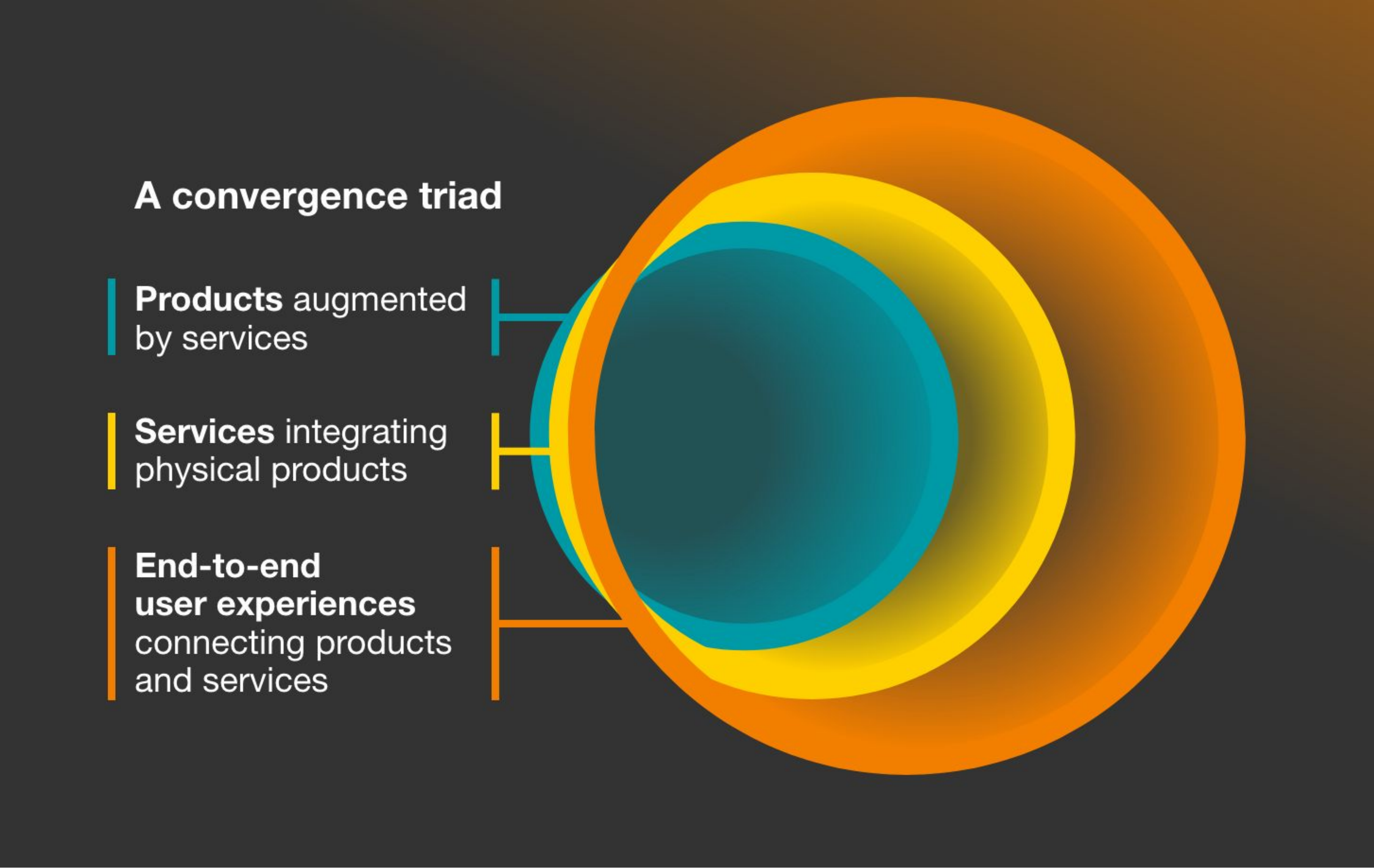
## The Business Value of Design



<https://www.mckinsey.com/business-functions/mckinsey-design/our-insights/the-business-value-of-design>



CONTINUOUS EVOLUTION > TECHNOLOGICAL ADVANCES > CHANGING INTERFACES > NEW INTERACTIONS > NEW DESIGN OPPORTUNITY



# PRODUCTS AUGMENTED BY SERVICES



# SERVICES INTEGRATING PHYSICAL PRODUCTS

Wireless headphones.  
Finally untangled.

After a simple one-tap setup, AirPods are automatically on and always connected.<sup>1</sup> Using them is just as easy. They can sense when they're in your ears and pause when you take them out. And the AirPods experience is just as amazing whether you're listening to your iPhone, Apple Watch, iPad, or Mac.



Tap into Siri.

Talking to your favorite personal assistant is a cinch. Just double-tap either AirPods to activate Siri, without taking your iPhone out of your pocket.<sup>2</sup>



"Call my brother Brian"



"Play my workout playlist"



"Turn up the volume"



"How do I get to the zoo?"

Tap into Siri.

Talking to your favorite personal assistant is a cinch. Just double-tap either AirPods to activate Siri, without taking your iPhone out of your pocket.<sup>2</sup>



"Call my brother Brian"



"Play my workout playlist"



"Turn up the volume"



"How do I get to the zoo?"





Apple is not a technology company.

Apple is a fashion brand that makes jewelry  
that connects to the internet.

AirPods are sex sticks that fuck your ears.

## Why Silicon Valley is all wrong about Apple's AirPods

So you think Apple is a tech company? No, you're wrong.



Chris Messina [Follow](#)

Product guy, inventor of the hashtag, Developer Experience at @Uber, ex-Goo

Sep 14 · 11 min read

# END-TO-END CUSTOMER EXPERIENCE





# Design Is Never Done

Design is the art of continuous problem solving—an active cycle of investigating and validating needs, crafting and developing ideas, and creating solutions. Over the course of its life, a digital product is shaped by many hands.

[design.google.com](http://design.google.com)



## UPDATES AND ASYMMETRIC OBSOLESCENCE




# DESIGN THINKING

A contemporary interpretation and the  
relation to **Creative Problem Solving**

# CPS vs DT

Kirsty Nunez

<https://q2insights.com/intersection-design-thinking-creative-problem-solving-cps-important-role-research/>

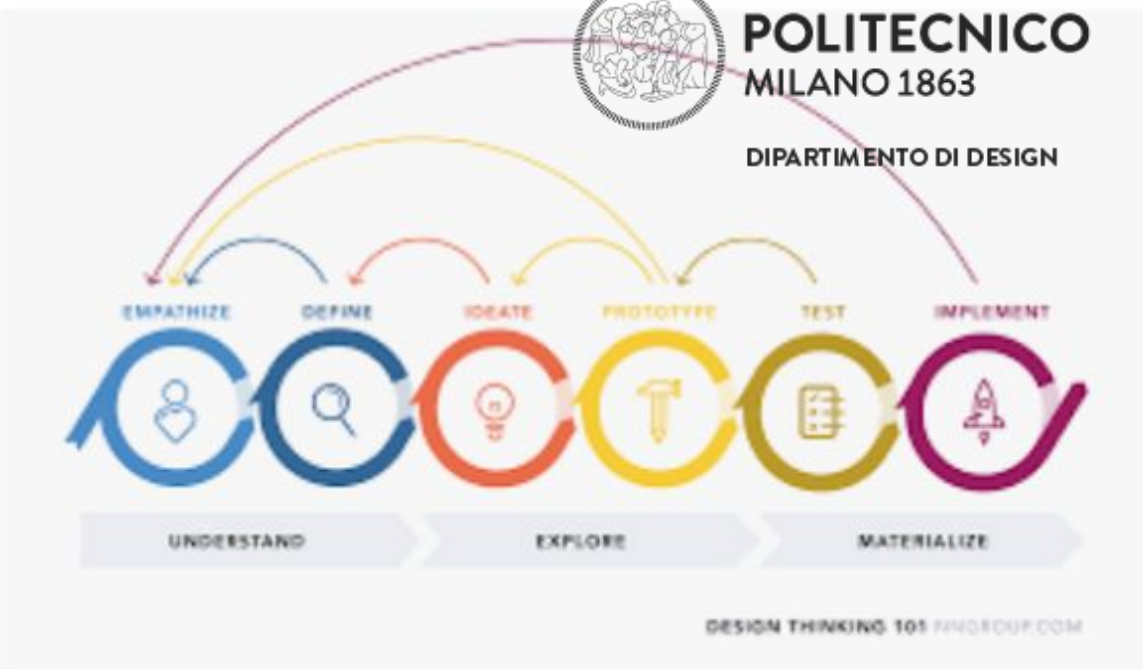
	 Creative Problem Solving	 Design Thinking	 Research Elements
Empathize		<ul style="list-style-type: none"> <li>Q Observe</li> <li>Q Engage</li> <li>Q Watch and Listen</li> </ul>	✓
Define the Challenge	<ul style="list-style-type: none"> <li>Q Object Finding</li> <li>Q Fact Finding</li> <li>Q Problem Finding</li> </ul>	<ul style="list-style-type: none"> <li>Q Define / Solve the Right Problem</li> </ul>	
Learn from Those for Whom You are Designing		<ul style="list-style-type: none"> <li>Q Research</li> </ul>	✓
Ideation	<ul style="list-style-type: none"> <li>Q Ideas Finding</li> </ul>	<ul style="list-style-type: none"> <li>Q Ideate</li> </ul>	
Prototype		<ul style="list-style-type: none"> <li>Q Prototype</li> </ul>	
Obtain User Feedback		<ul style="list-style-type: none"> <li>Q Test</li> </ul>	✓
Identify the Solution	<ul style="list-style-type: none"> <li>Q Solution Finding</li> </ul>	<ul style="list-style-type: none"> <li>Q Choose</li> </ul>	
Obtain Buy-In from Stakeholders	<ul style="list-style-type: none"> <li>Q Acceptance Finding</li> </ul>		
Implementation		<ul style="list-style-type: none"> <li>Q Implement</li> </ul>	
Learn and Optimize		<ul style="list-style-type: none"> <li>Q Learn</li> </ul>	✓



Il Laboratorio Aperto di Ravenna ...  
ravennanotizie.it



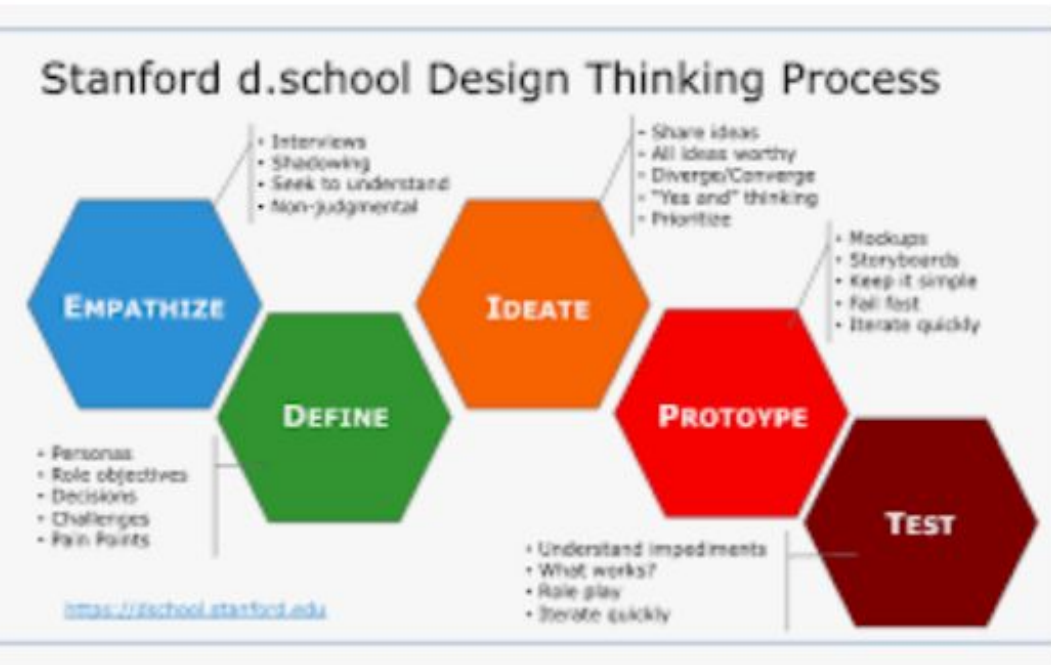
What is Design Thinking and Why Is It ...  
interaction-design.org



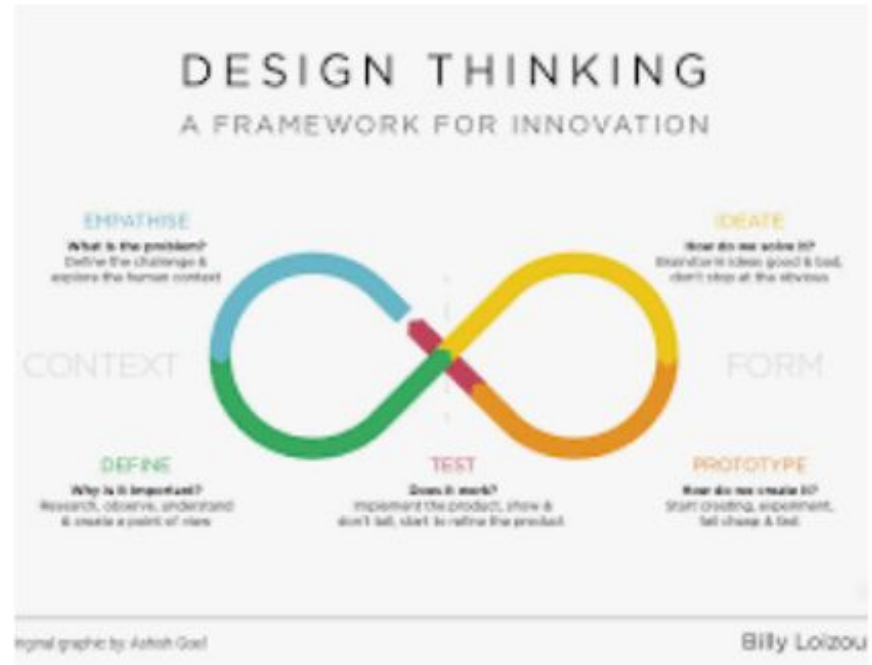
Design thinking, cos'è e come funziona  
university2business.it



Design Thinking vs. Technological Innovation  
fguell.com



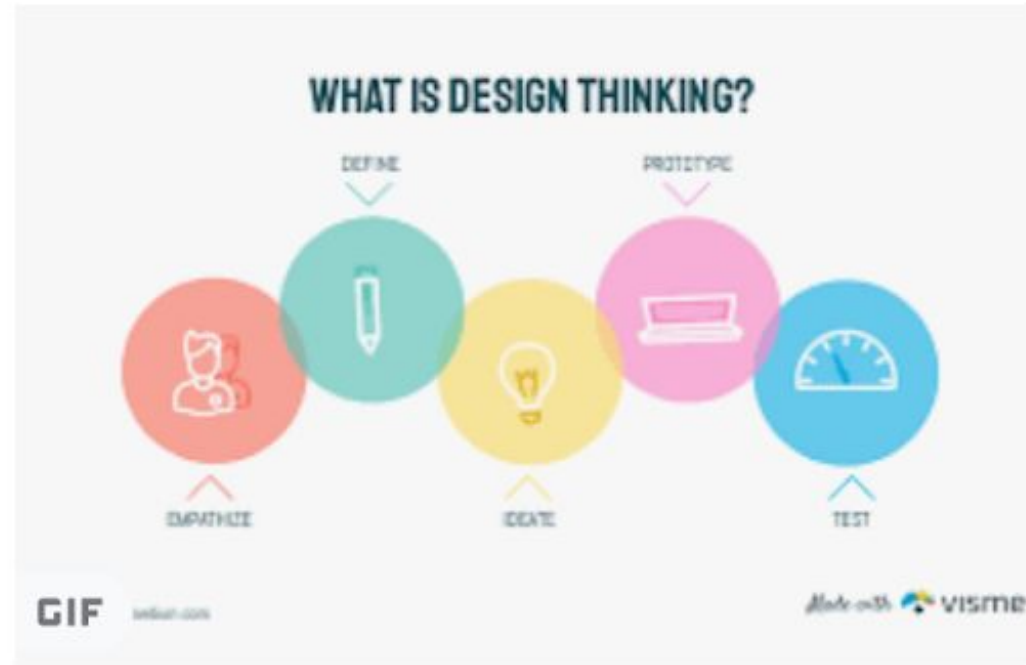
What is Design Thinking? – Agile ...  
theagileelephant.com



Design Thinking - BILLY LOIZOU  
billyloizou.com



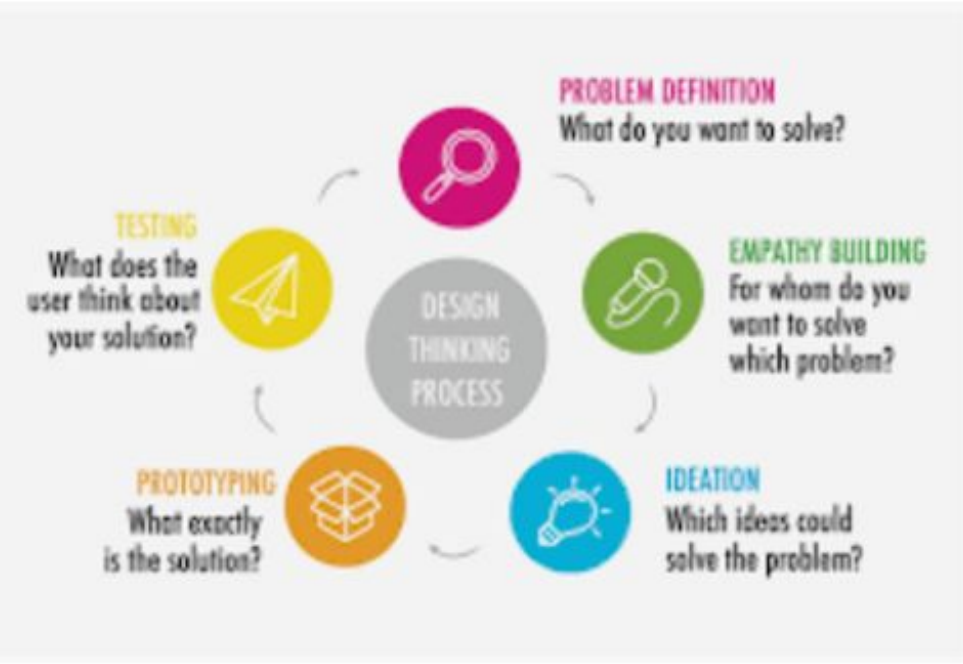
Design Thinking nel processo di we...  
teamlau.com



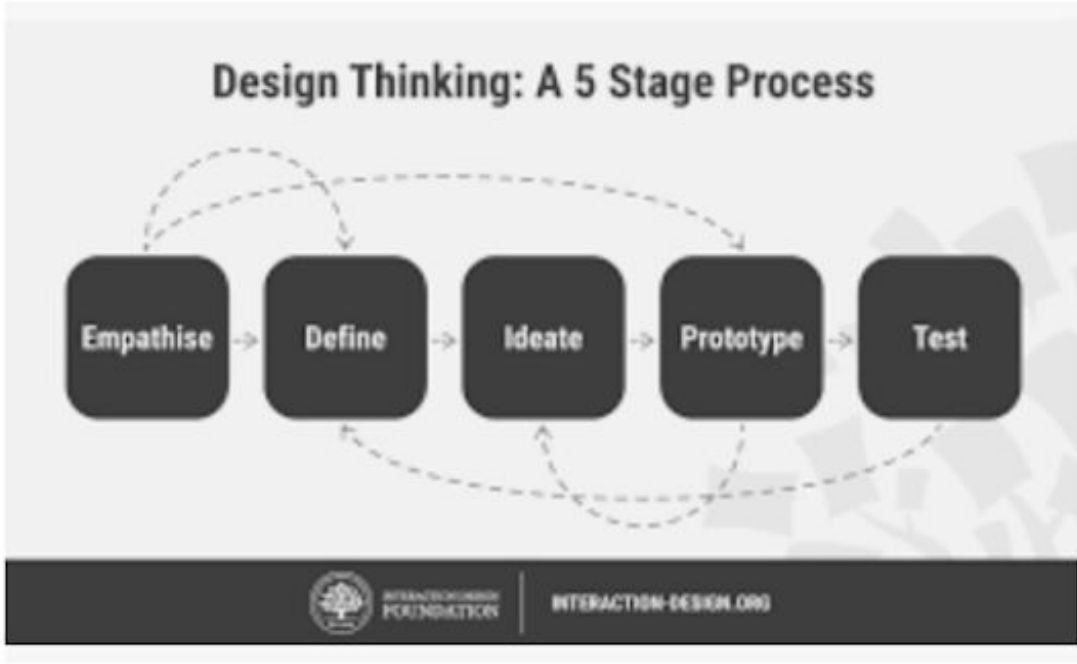
Design Thinking vs. Visual Thinking ...  
visme.co



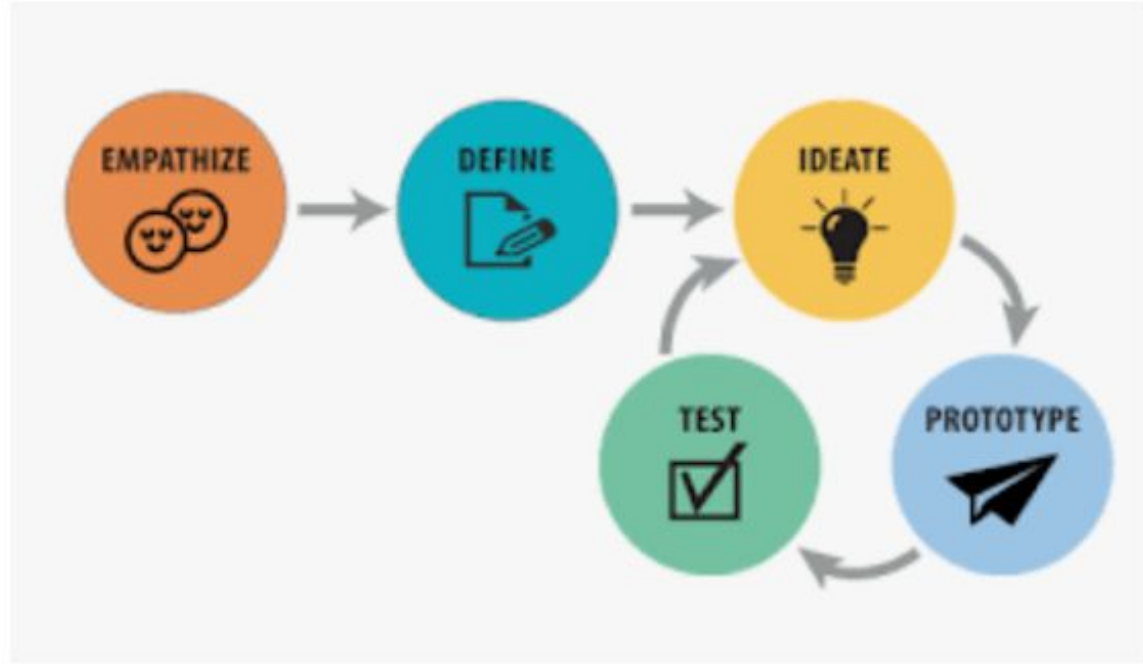
Design Thinking, le assicurazioni tra i ...  
insurzine.com



Module »THINK« - Design Thinking Playroom  
playroom.rocks



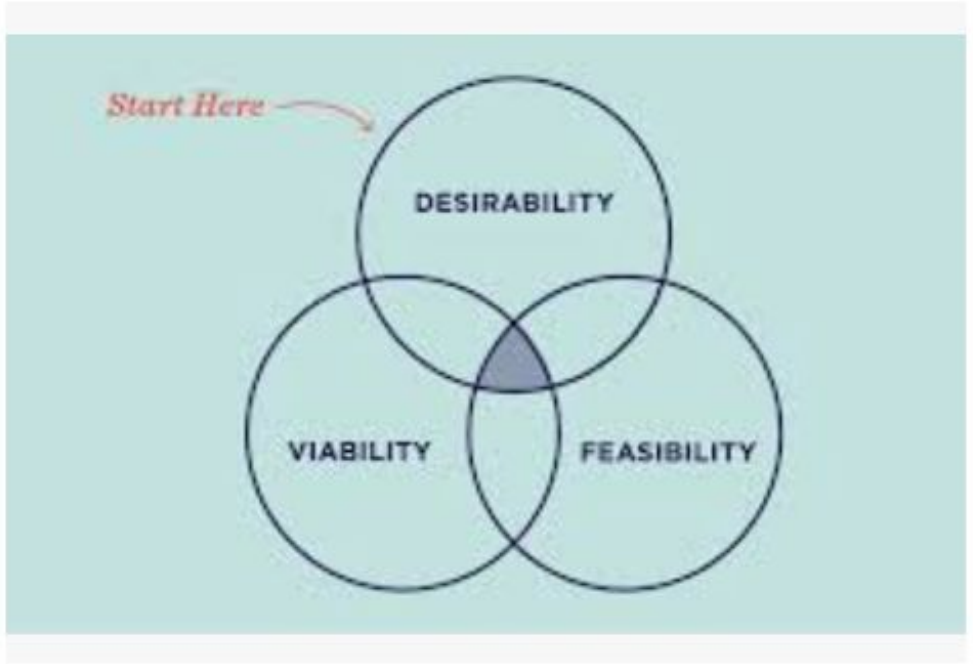
5 Stages in the Design Thinking Process ...  
interaction-design.org



Design Thinking – Perspectives@  
perspect.it



Design Thinking is the ne...  
it.pinterest.com



What is Design Thinking? – IDEO U  
ideou.com

# Design Thinking a definition

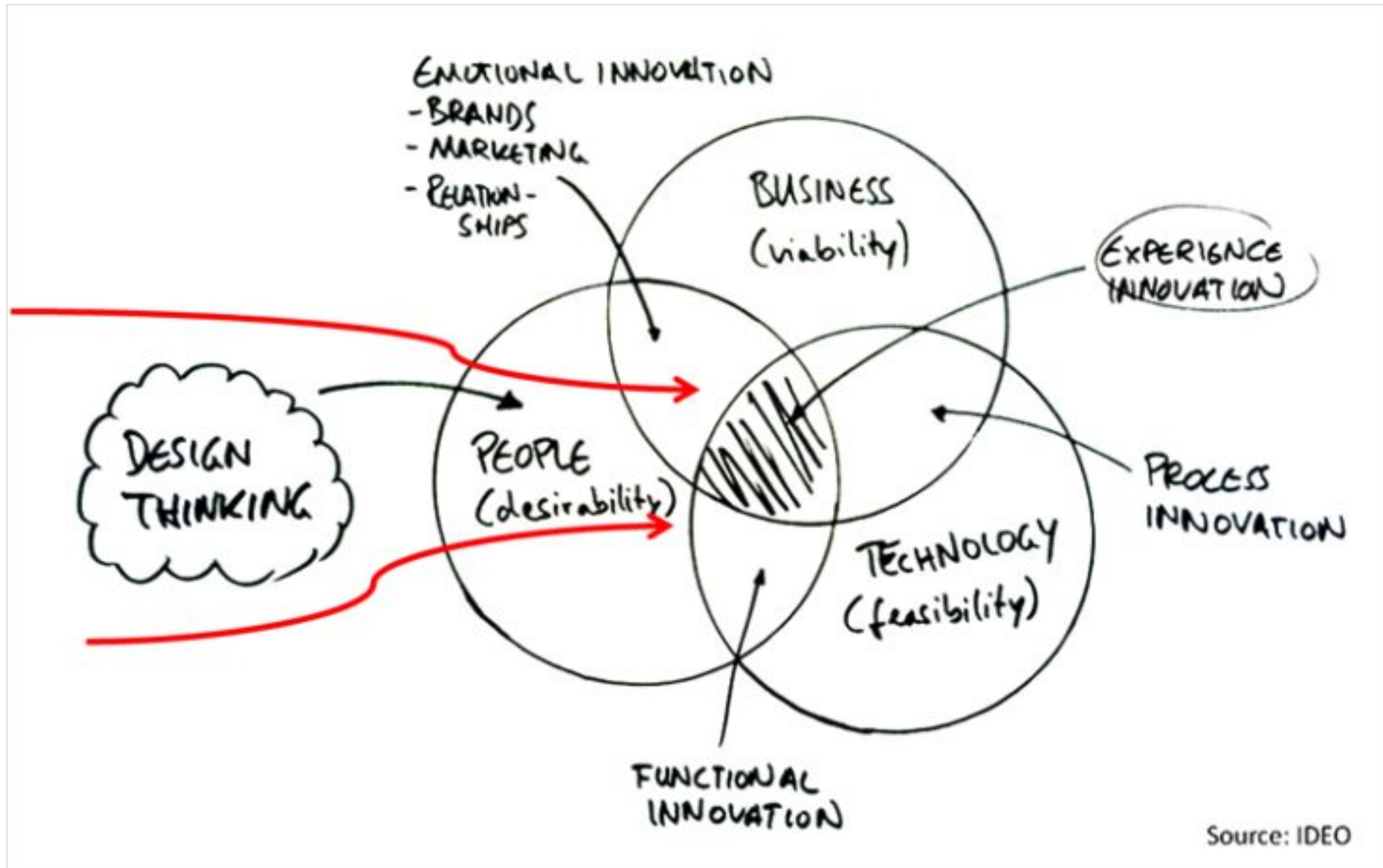
Design thinking can be described as a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity.

On reflection this is a narrow description that focuses on design thinking's role within business. The next sentence that I wrote. "...design thinking converts need into demand", which I borrowed from *Peter Drucker*, broadens things out a bit but still assumes an economic motivation.

**Tim Brown**

<http://designthinking.ideo.com/?p=49>

# From Design Thinking to Circular Design



Source: IDEO

# Design Thinking $\neq$ Design (?)

## Will the Design Thinking change the world of business?



Design Thinking ~~=~~ Design (?)

# The Economist

Redesigning Business Summit:  
The Big Rethink





# Design Thinking ~~=~~ Design (?)

## Design thinking is Just Thinking.

"Design thinking" is what creatives from other disciplines they've always done.

Don Normann \_ 2010 (@Core77.com)

## Design thinking is one of the tools of design

The design is interactive, it doesn't follow pre-established processes, solutions originate in every part of the process and all team members participate in the result.

## Design Thinking + Design

Design thinking and design (understood as professional practice) cannot be separated to solve complex problems.

# Design Thinking ~~=~~ Design (?)

## Design “ers” thinking

Designers have an experimental approach typical of learning by doing, there are no established theories that generate good results in terms of design, design involves many more tacit aspects (of sense and meaning) than those provided for other company specializations.

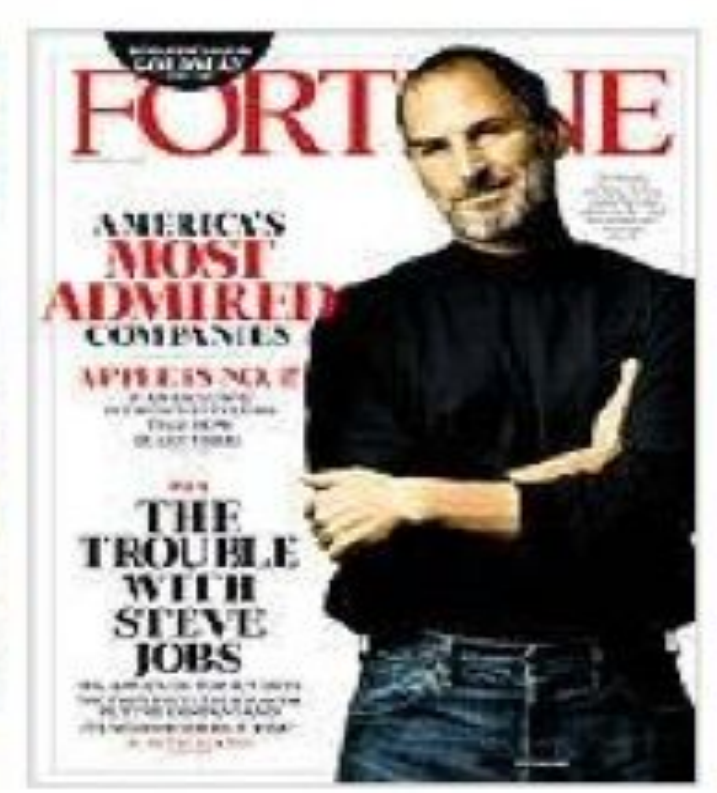
## Design Driven Innovation vs Design thinking

To obtain a product or service that is innovative from a design point of view, a good designer is always needed.

Design thinking is not a magical process, which empowers everyone to be design innovators, it is important because it should empower designers and managers to consistently dialogue about processes.

# Design Thinking $\neq$ Design (?)

Design thinking is not for all !!!



# Design Thinking is Bullsh\*t

**Natasha Jen**  
Graphic Designer \_ Pentagram



LEAN

[UX]



POLITECNICO  
MILANO 1863  
DIPARTIMENTO DI DESIGN

POLI.DESIGN



Experience  
Design  
Academy

THE LEAN SERIES

Jolt Award  
Winner

Jeff Gothelf with Josh Seiden

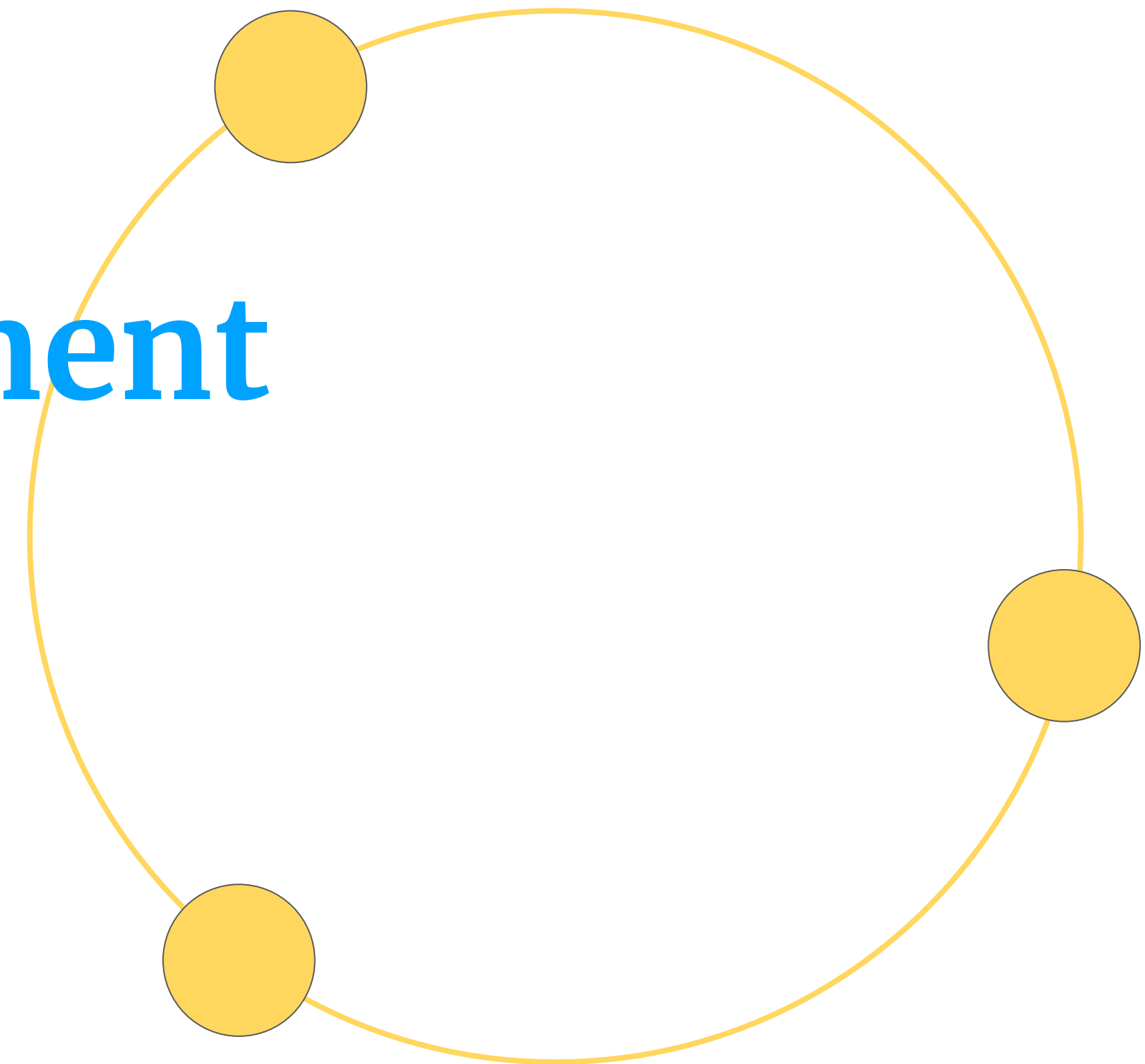
# LEAN UX

Applying Lean Principles to  
Improve User Experience

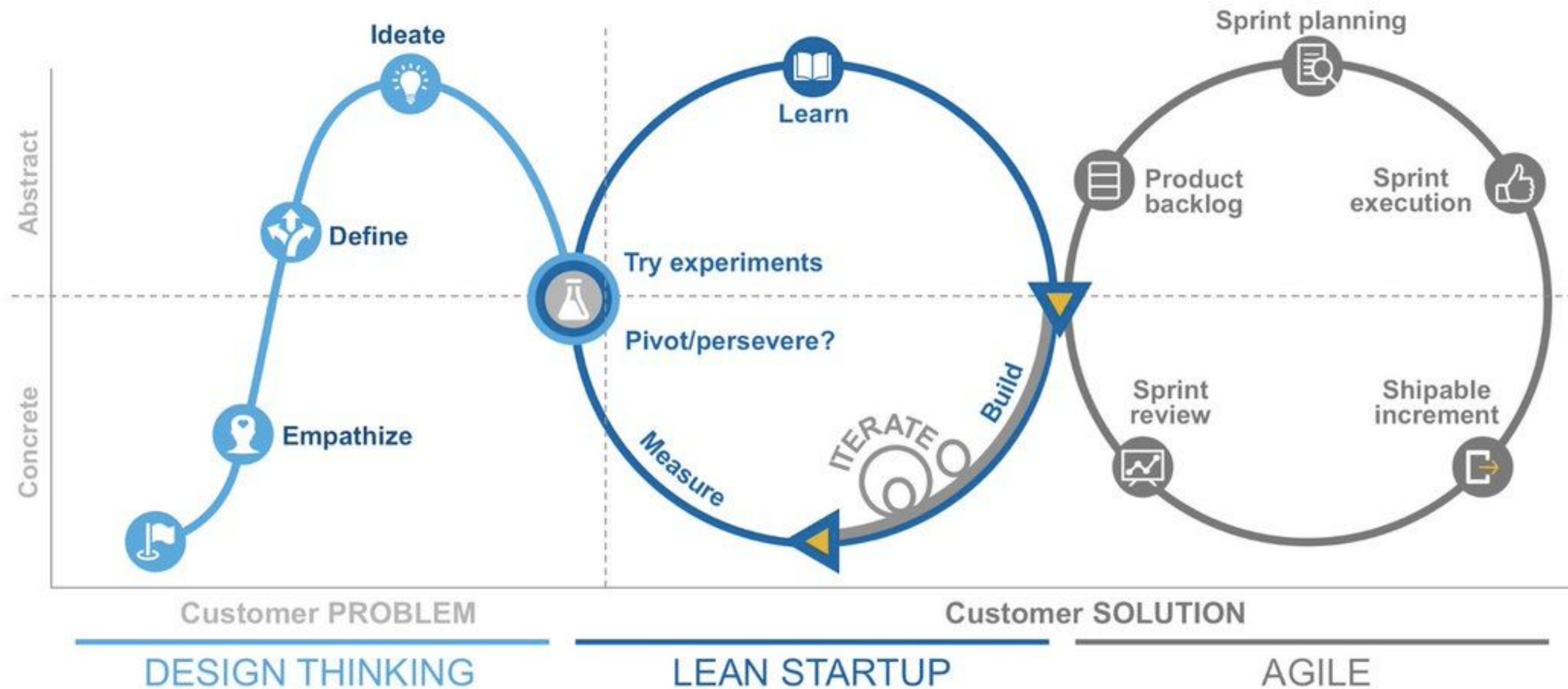
O'REILLY®

Eric Ries, Series Editor

- + **Design thinking**
- + **Agile software development**
- + **Lean startup method**



# Combine Design Thinking, Lean Startup and Agile



#GartnerSYM

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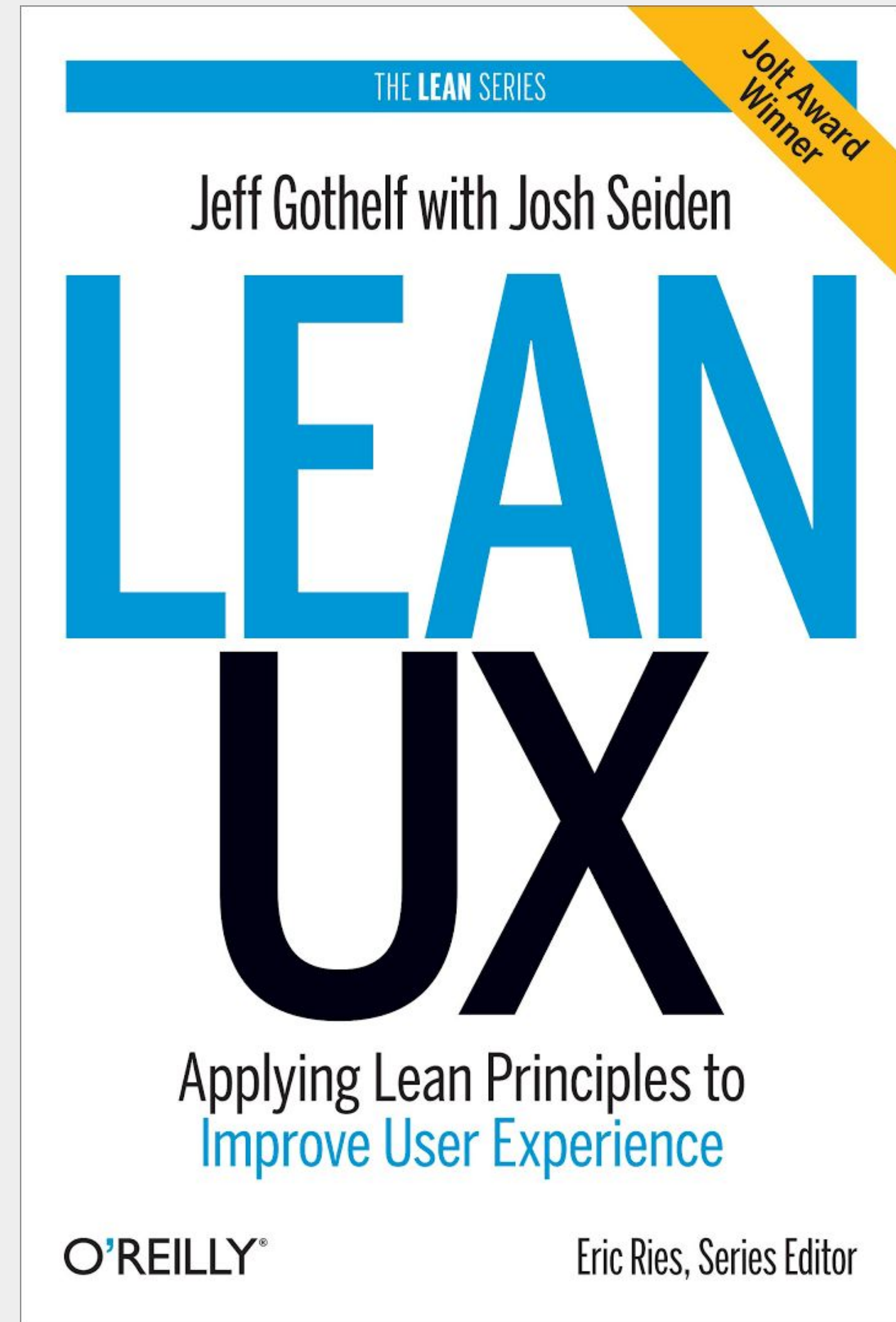
Gartner

To simplify, design thinking helps us **come up with better ideas**, the lean startup helps us **turn those ideas into business models** that work and agile helps us **deliver the product to market in a fast, incremental way** so that we get ongoing feedback, adapt and deliver precisely what the customer wants.



“Lean UX is the practice of bringing the true nature of a product to light **faster**, in a **collaborative, cross-functional way** that reduce the emphasis on thorough documentation while increasing the **focus on building a shared understanding of the actual product experience being designed.**”

p. 7



# Lean UX

## MVP AND EXPERIMENTS

*Minimum Viable Product are the smallest thing you can make to learn whether your hypothesis is valid.*

### Low-fidelity prototypes

(paper/clickable wireframes)

### Mid and High Fidelity Prototypes

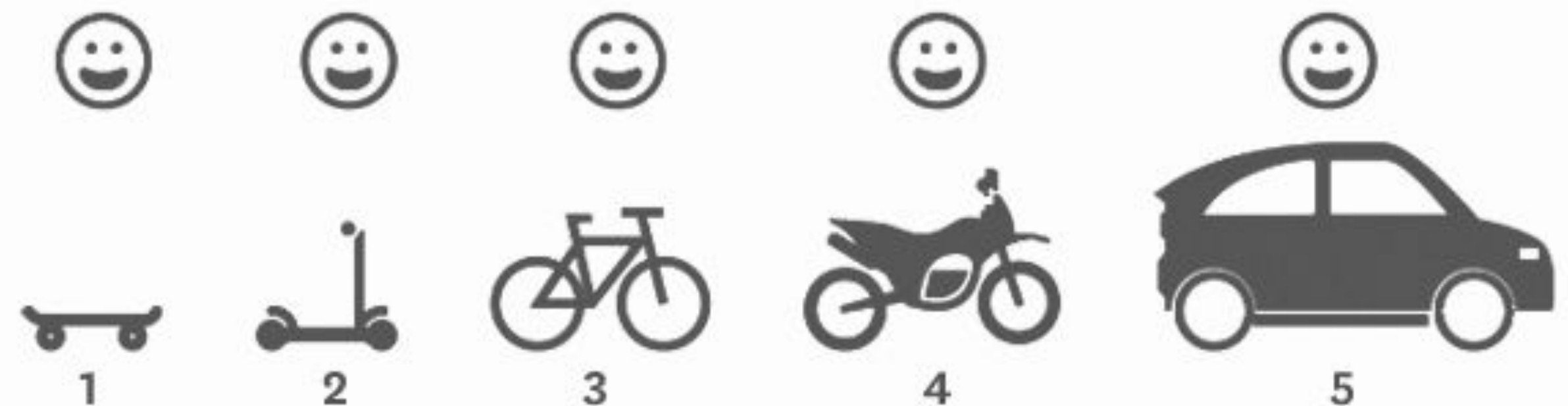
### Codes Prototypes

## HOW TO BUILD A MINIMUM VIABLE PRODUCT

### NOT LIKE THIS



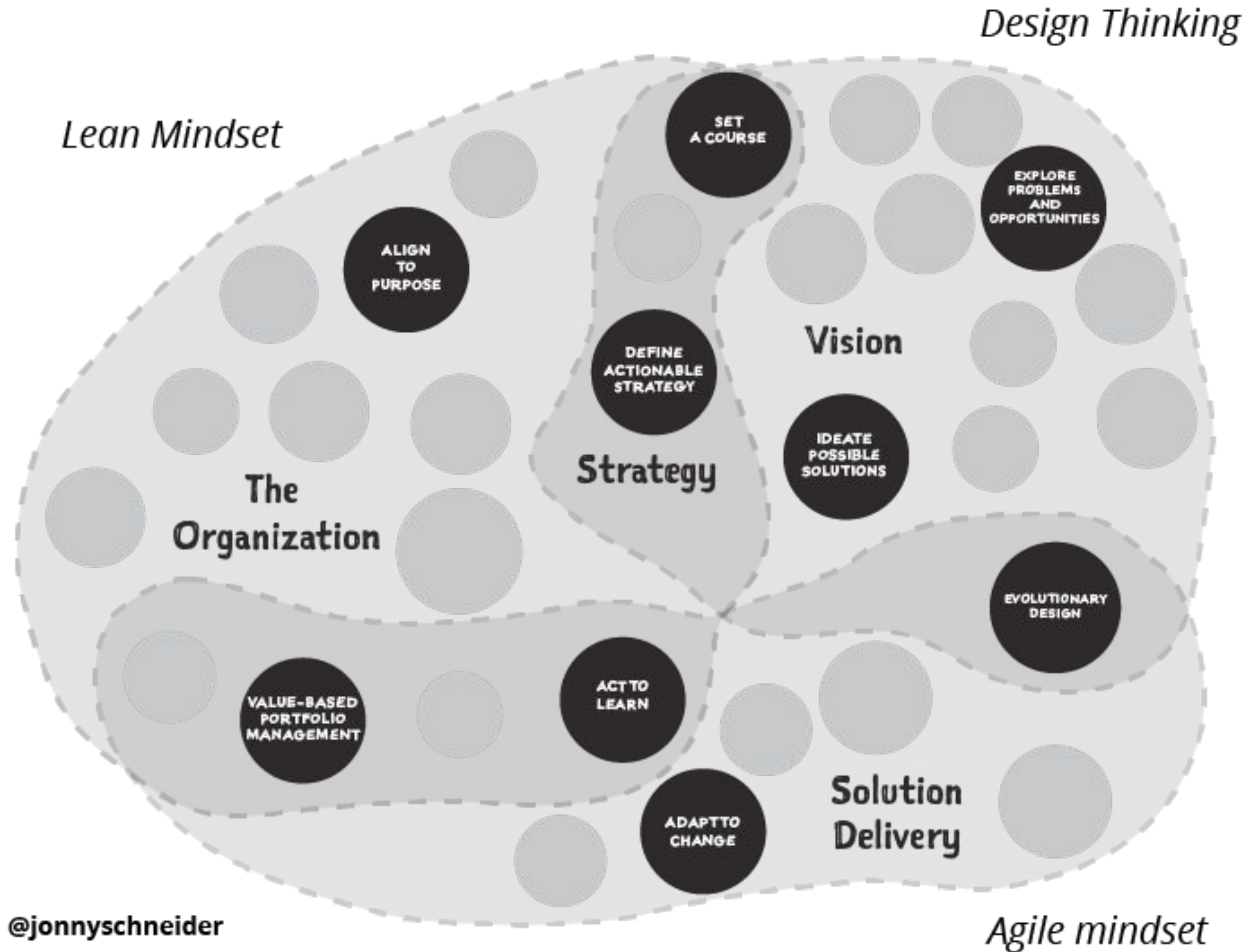
### LIKE THIS



# Understanding Design Thinking, Lean, and Agile



Jonny Schneider



# Comparing design methodologies

@jonnyschneider



*Explore the  
problem*



*Build the  
right things*



*Build the  
thing right*

# CREATIVE CONFIDENCE

Unleashing the creativity that lies  
within each and every one of us



**DAVID KELLEY** is the founder of IDEO, one of the world's leading innovation and design firms, as well as the creator of the d.school at Stanford University.

**TOM KELLEY** is a partner at IDEO and the author of the bestselling *The Art of Innovation* and *The Ten Faces of Innovation*. He is also an executive fellow at UC Berkeley's Haas School of Business.

WWW.CREATIVECONFIDENCE.COM

ALSO AVAILABLE AS AN EBOOK AND AUDIO FROM RANDOM HOUSE

JACKET DESIGN: MARTIN RAY

AUTHOR PHOTOGRAPH: WASHLEIGH PHOTOGRAPHY CO.

Crown Business  
New York  
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CREATIVE CONFIDENCE TOM KELLEY & DAVID KELLEY

### CREATIVE CONFIDENCE

UNLEASHING THE CREATIVE POTENTIAL WITHIN US ALL

by TOM KELLEY  
BESTSELLING AUTHOR OF THE ART OF INNOVATION  
& DAVID KELLEY  
FOUNDER, IDEO & STANFORD D.SCHOOL

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An insightful, compelling narrative on how to unlock, nurture, and strengthen the innate creativity that lies within us all, by two leaders at the forefront of innovation—David Kelley, the founder of IDEO, and Tom Kelley, the author of the bestseller *The Art of Innovation*

Innovation and creativity are now widely accepted as the driving forces behind business success, and are among the most highly prized qualities in today's leaders. But most of us tend to abdicate the mantle of creativity to the "creative types"—those who paint, sculpt, design, or write for a living. We forget that as kids, we were all creative, making things out of clay and using crayons with abandon. Over time, so many of us were discouraged in our creative endeavors and eventually focused our energies on more traditional pursuits. In *Creative Confidence*, the Kelley brothers remind us that we all have ideas and insights to offer. They demonstrate that creativity is a mindset, a way of thinking, and a proactive approach to finding new solutions. We may not all be artists, but we can be more creative lawyers, doctors, managers, or salespeople.

Drawing on stories from their work at IDEO and the d.school at Stanford, the Kelleys show us how to tap into that wellspring of creativity and imagination when tackling the problems we encounter. Moreover, they reveal specific strategies to unleash that creative spark within us. Creativity and the ability to innovate, they explain, are like muscles—the more we use them, the stronger they get. *Creative Confidence* gives us the courage to make a difference in the world around us and inspires us to combine breakthrough ideas with action in a way that improves our companies, our careers, and our lives.

# DAVID KELLEY \_ IDEO \_ D.SCHOOL STANFORD



Doug Dietz is a technical person.



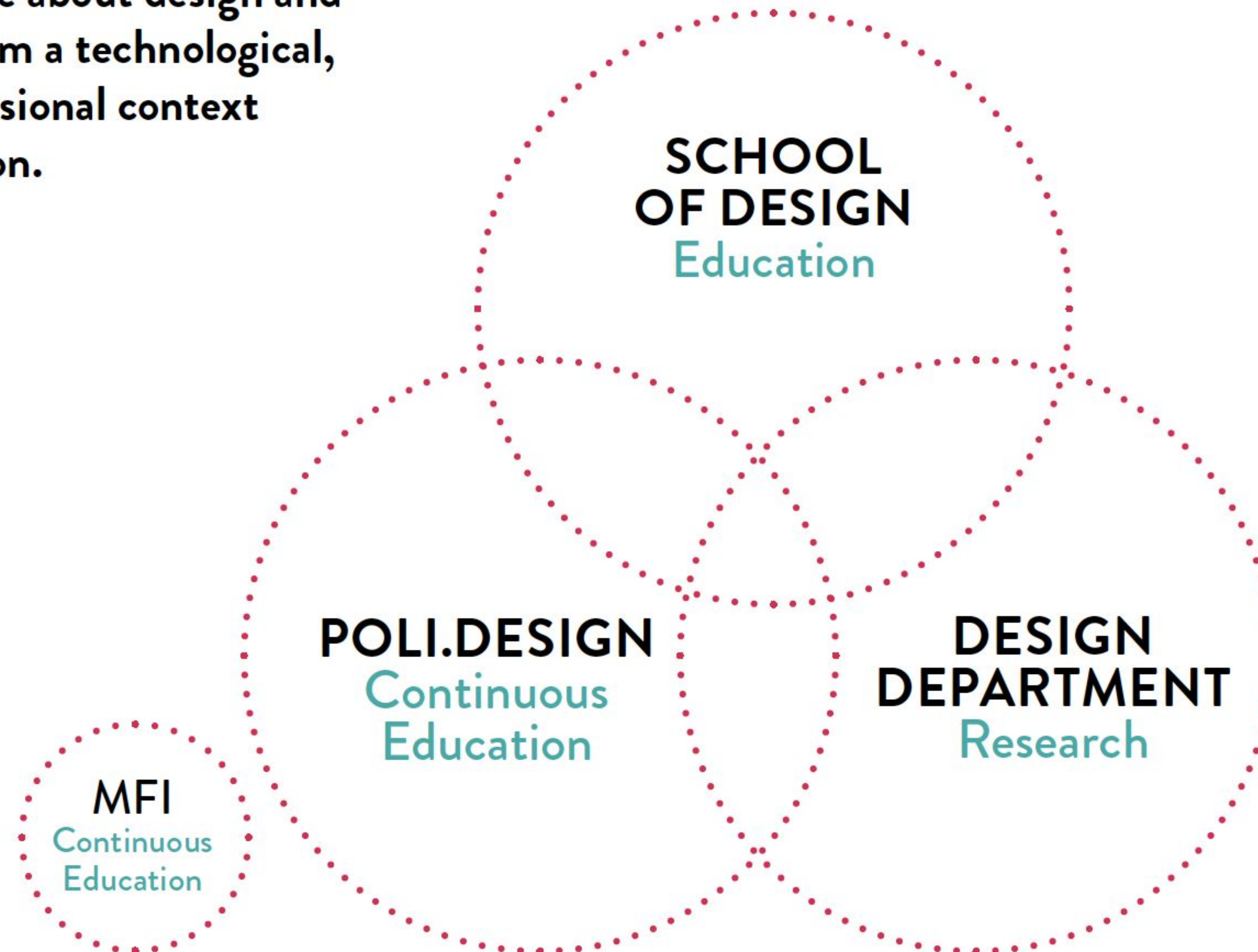
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the walls  
the machine,







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It consists of 3 entities and intends to carry out excellence about design and to satisfy requests from a technological, productive and professional context in continuous evolution.





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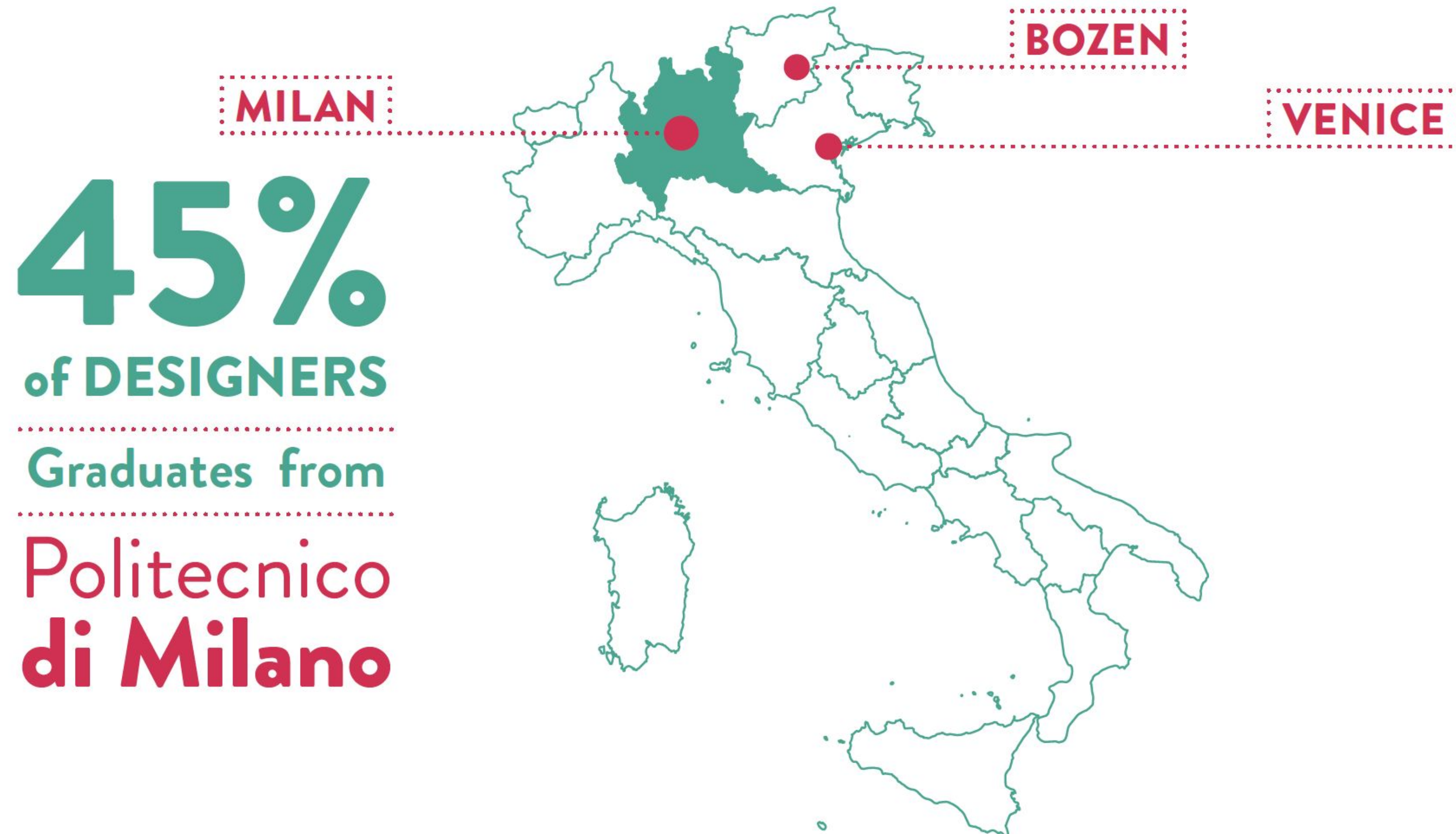
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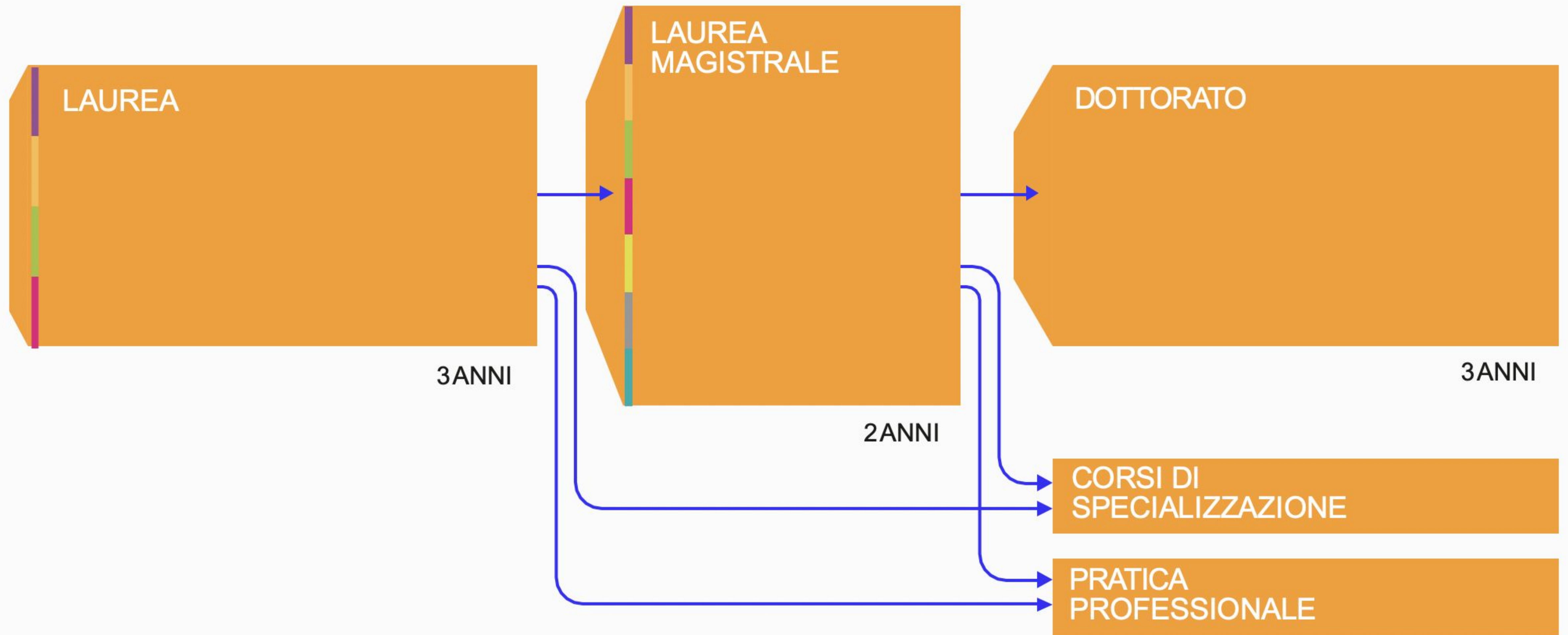


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## 3.School of Design the Italian context



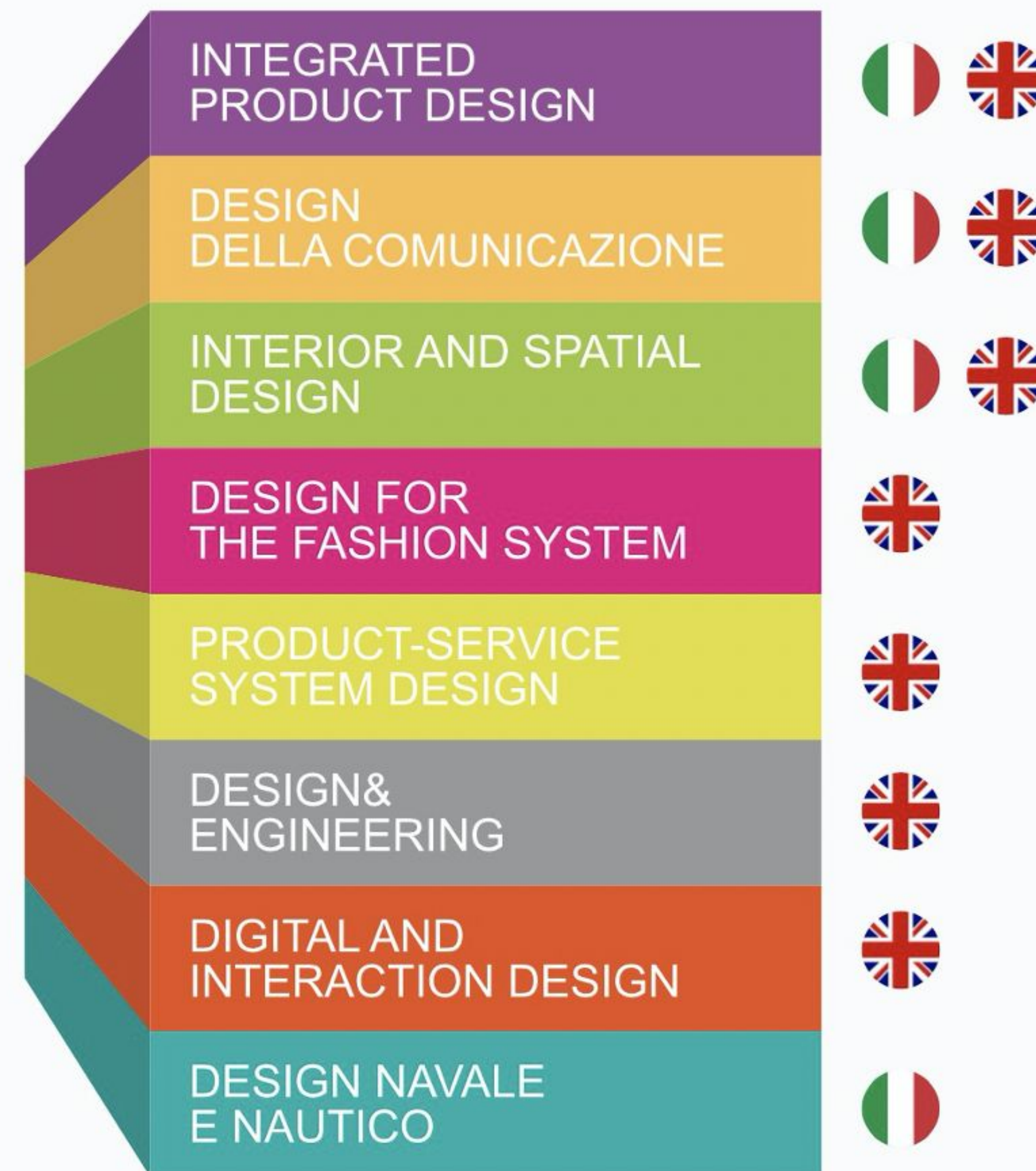


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3 ANNI

## 2° LIVELLO - LAUREA MAGISTRALE



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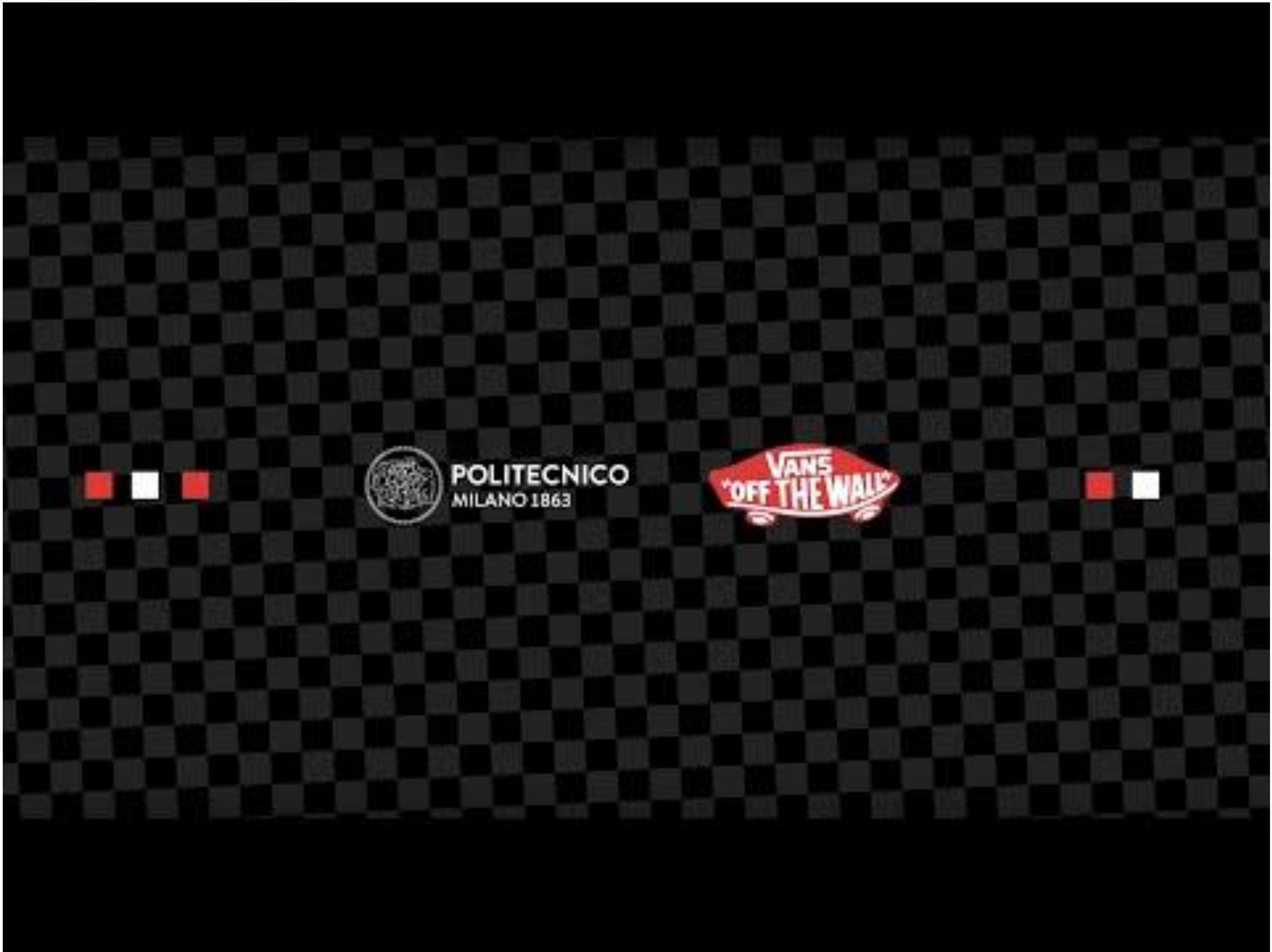
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**WORKSHOP  
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POLIMI DESIGN SCHOOL  
PRODUCT DESIGN

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*‘una stupefacente benedizione per il pianeta... dobbiamo essergli molto grati (al **Coronavirus, NdR**) perché potrebbe essere la ragione per cui sopravviveremo come specie’*

*Qualcosa di **‘terribile e magnifico, perché abbiamo bisogno di fermarci nel produrre a questa velocità.’***

**dezeen**

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# Grazie / Thank you / 谢谢

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