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

Area Industria Energia Innovazione

23 giugno 2020

# 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*

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# 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

Fondazione Politecnico di Milano

Do you copy?

# DI COSA PARLEREMO

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



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# 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.”

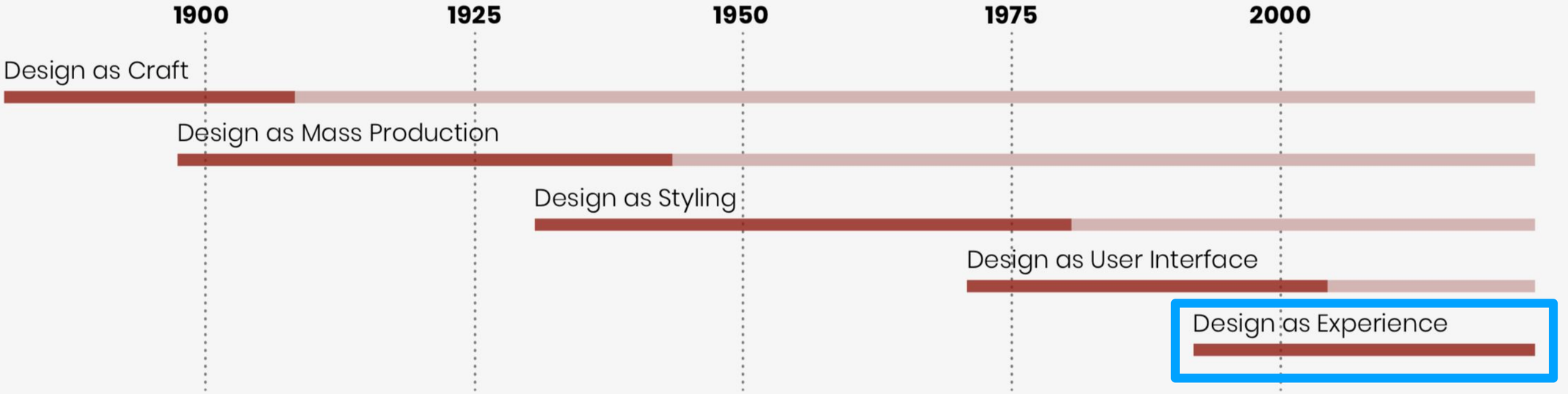
WDO

# DESIGN EVOLUTION

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

# DESIGN EVOLUTION





1850

1945

1962

2007

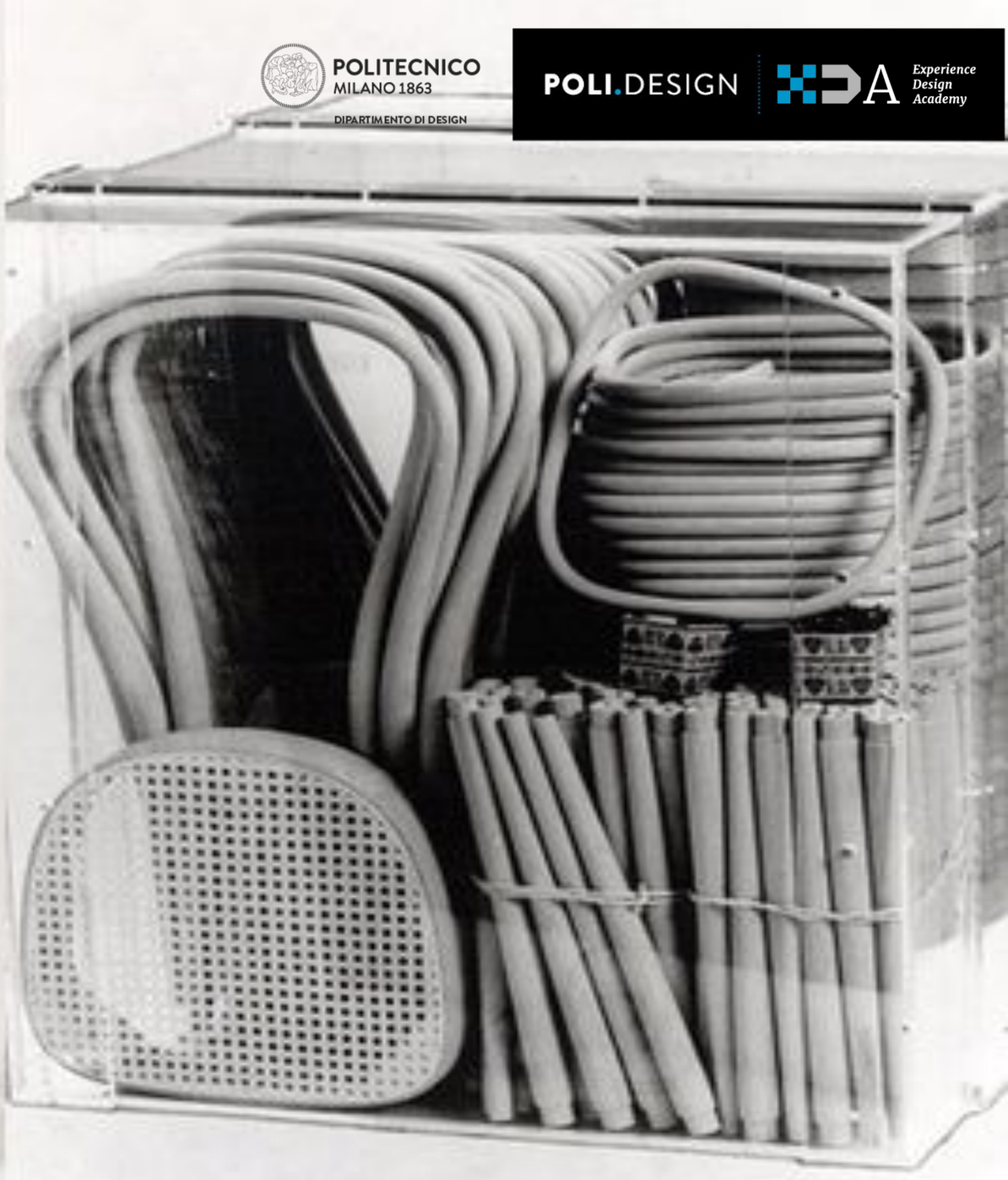
2016

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

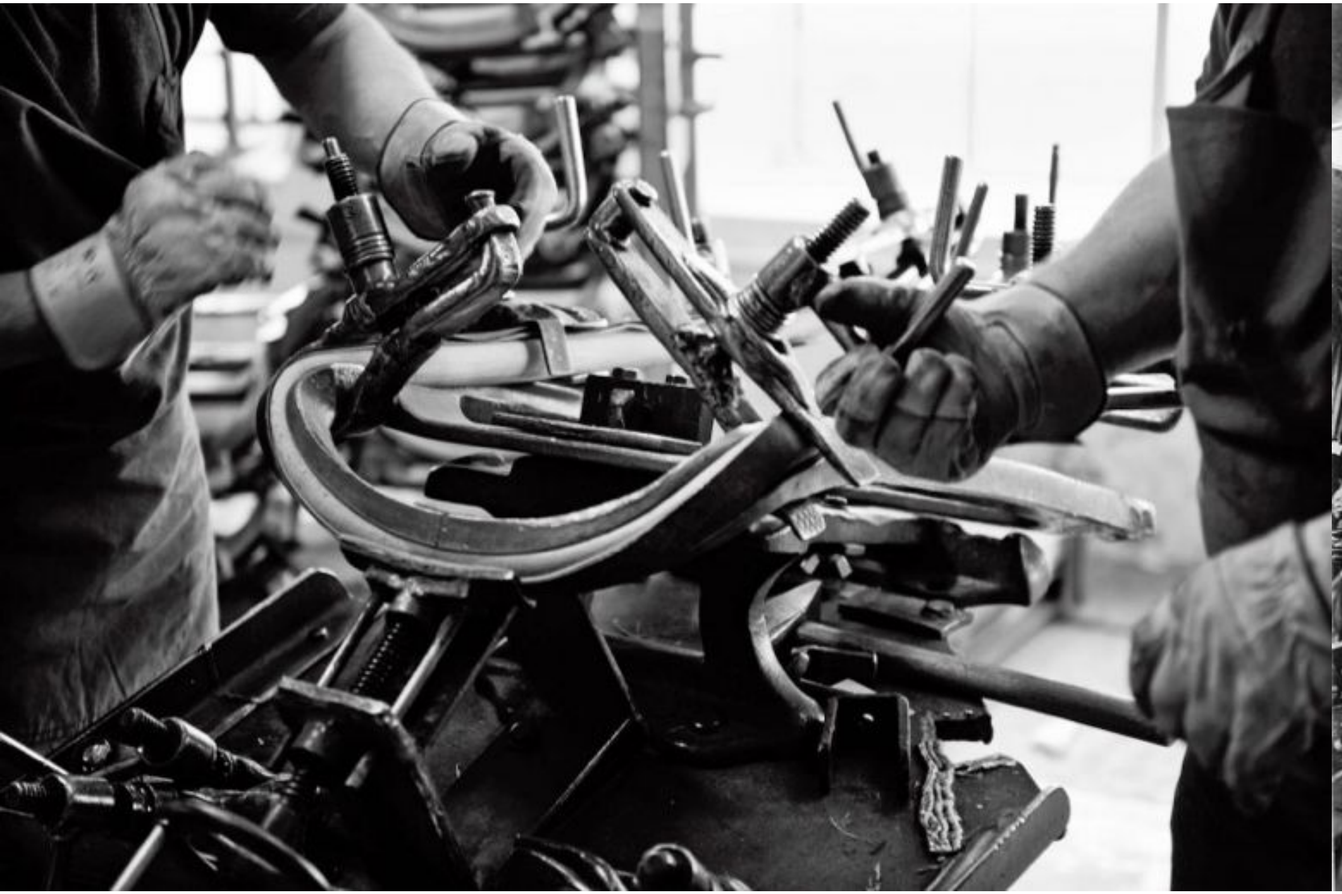


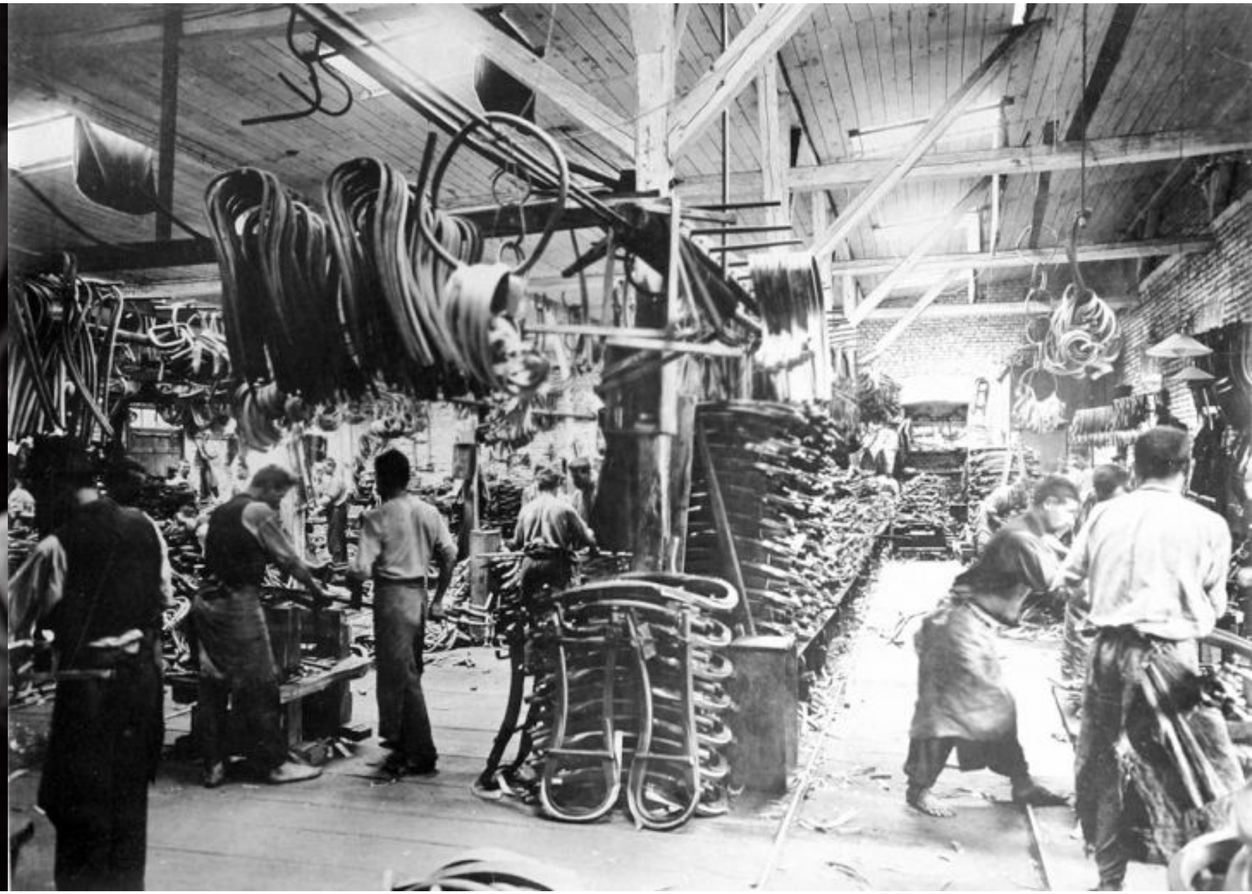
1853 **Gebruder Thonet**
1856**The first workshop for mass production of furniture**

**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

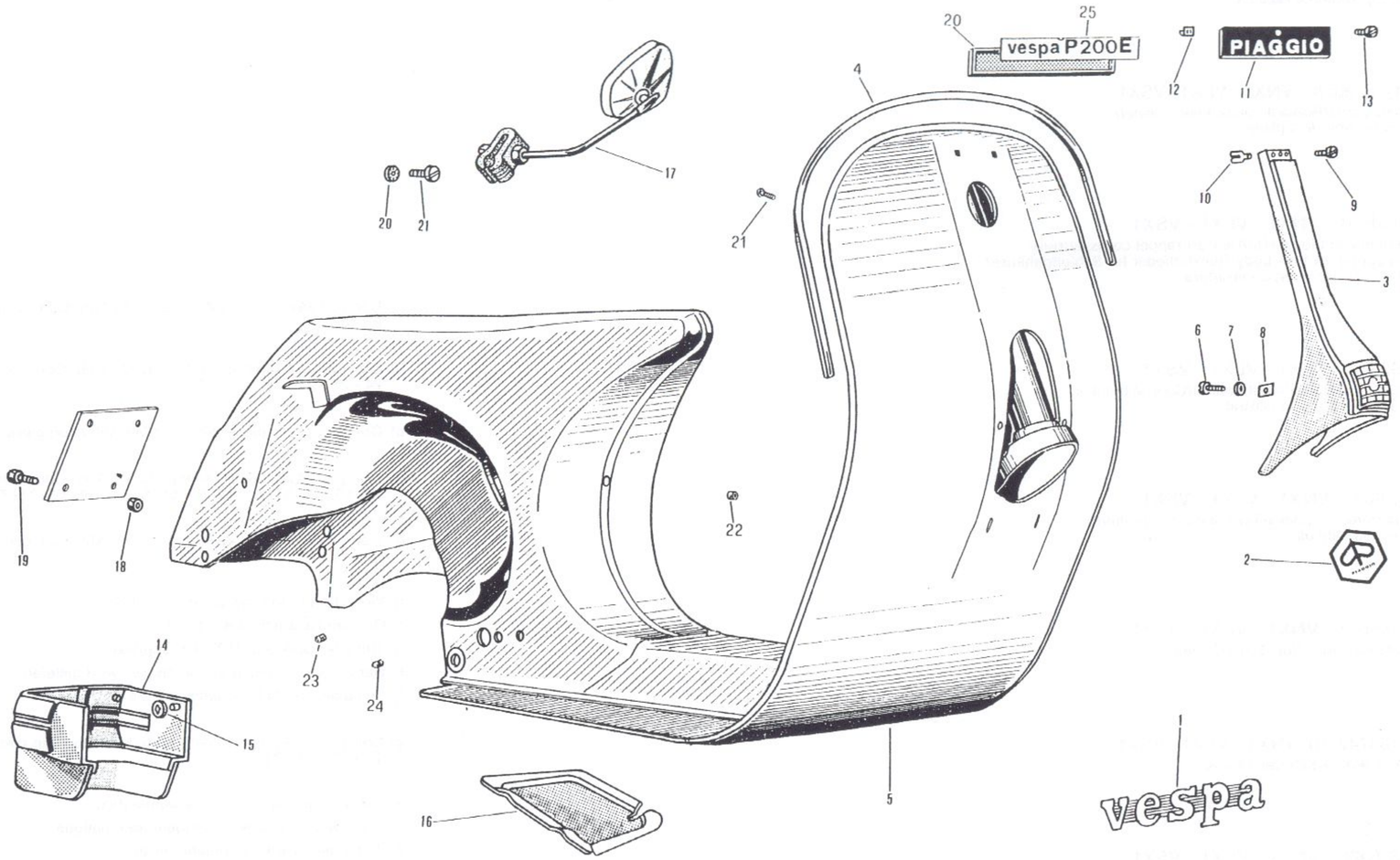
**Low consumption vehicle**

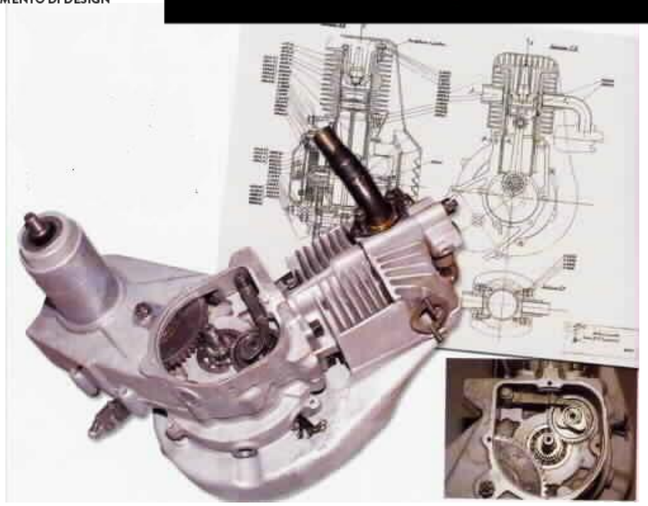
**Unisex, suitable for every kind of streets**

# VESPA PIAGGIO

## 1945

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



# RADIO BRIONVEGA TS 502

*1962*

*ZANUSO & SAPPER*

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# DESIGN & BUSINESS

Design as a crucial innovation driver

# DESIGN & BUSINESS

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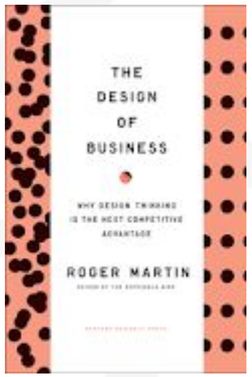


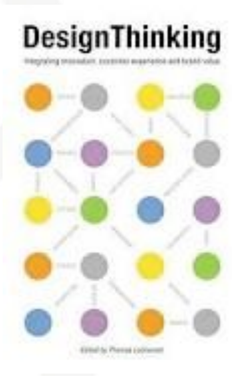


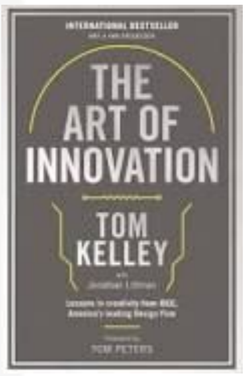

# The large consulting firms are the major M&A driver

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

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

Source: @tberno @jcoronado1 @leahbuley @hugosarrazin @randyjhunt @scootermcdoog @ezyjules @shatzygoespro

# DESIGN, INNOVATION AND STRATEGY @POLIMI

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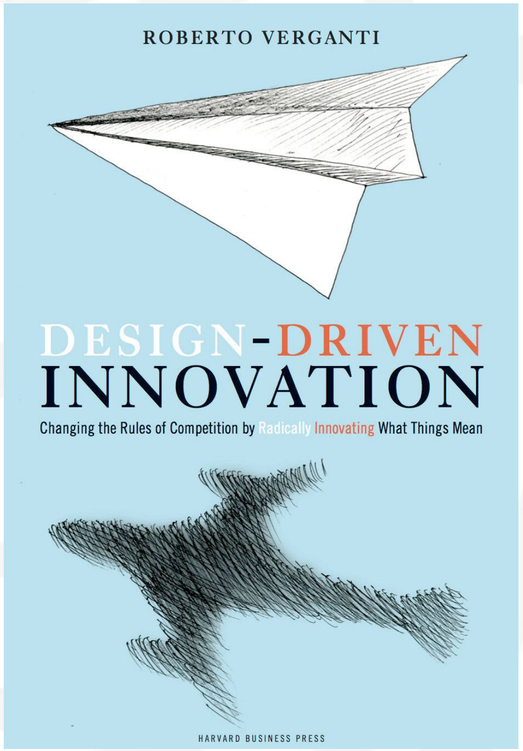
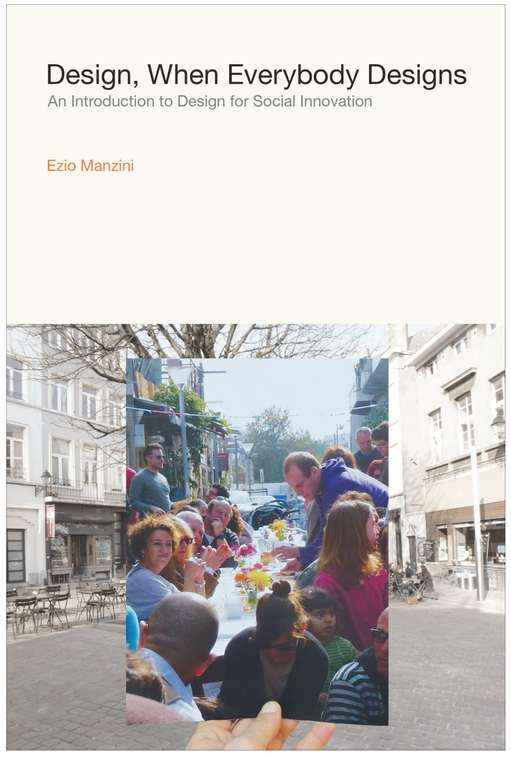
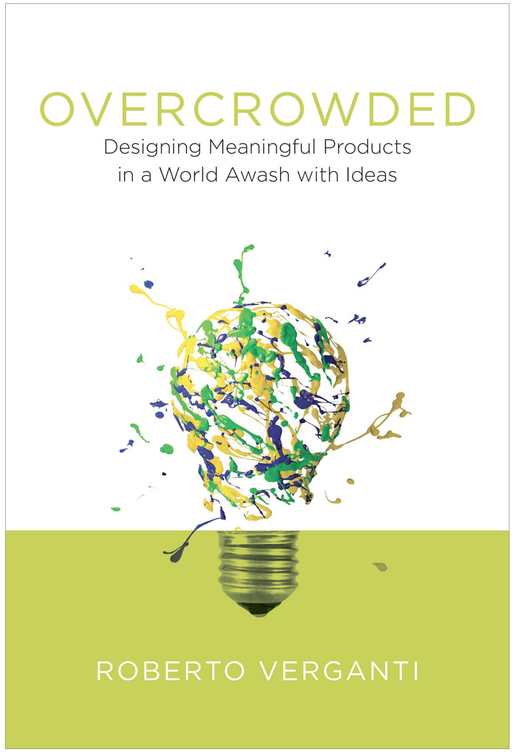



R. Verganti,
DESIGN-DRIVEN INNOVATION
Harvard business press 2009

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

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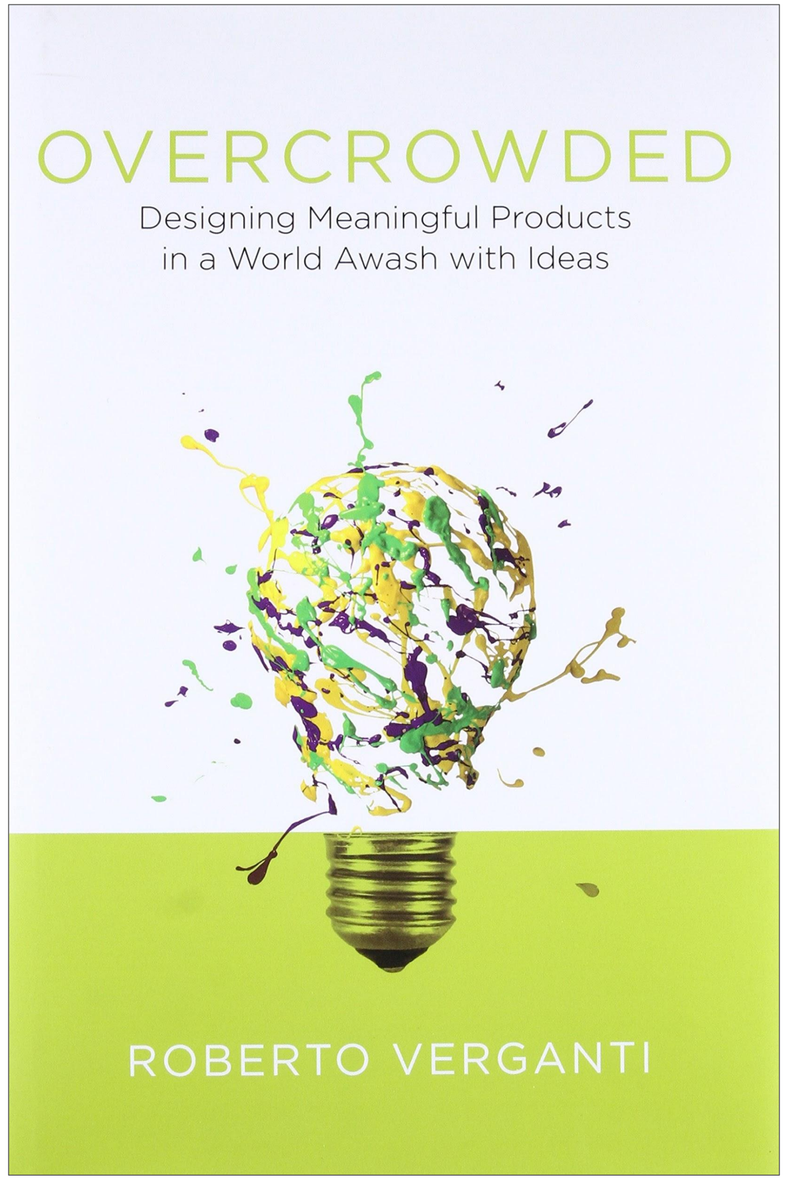
# DESIGN, INNOVATION AND STRATEGY @POLIMI

"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**



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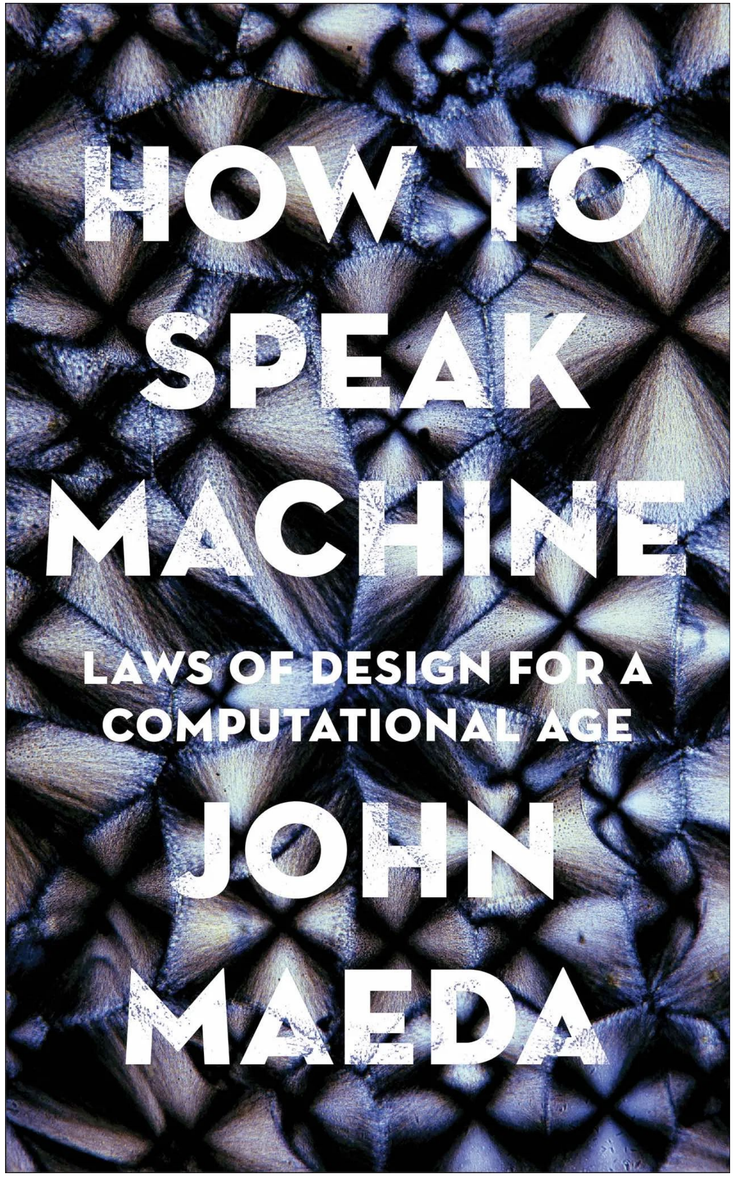
# COMPUTATIONAL DESIGNER

A new generation of professionals



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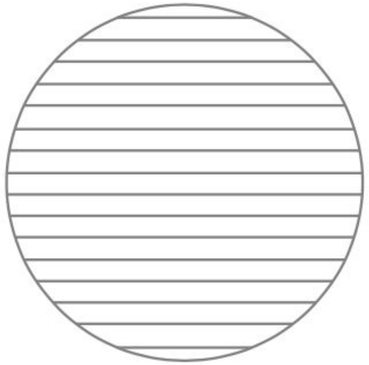
# Review:

## There are Three Types of Design

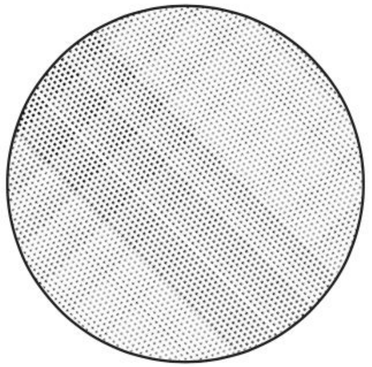
The last report reviewed the difference between Classical and Computational Design. This was somewhat controversial, but we review it here again.



**DESIGN: "CLASSICAL DESIGN"**

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

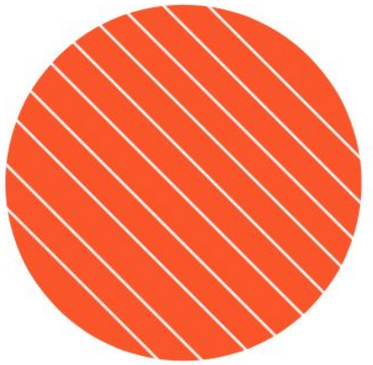
Driver/ the Industrial Revolution, and prior to that at least a few millennia of ferment.



**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.

https://designintechreport.wordpress.com/ _ John Maeda

# 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.

Source: @aiga Design Census 2017

# 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

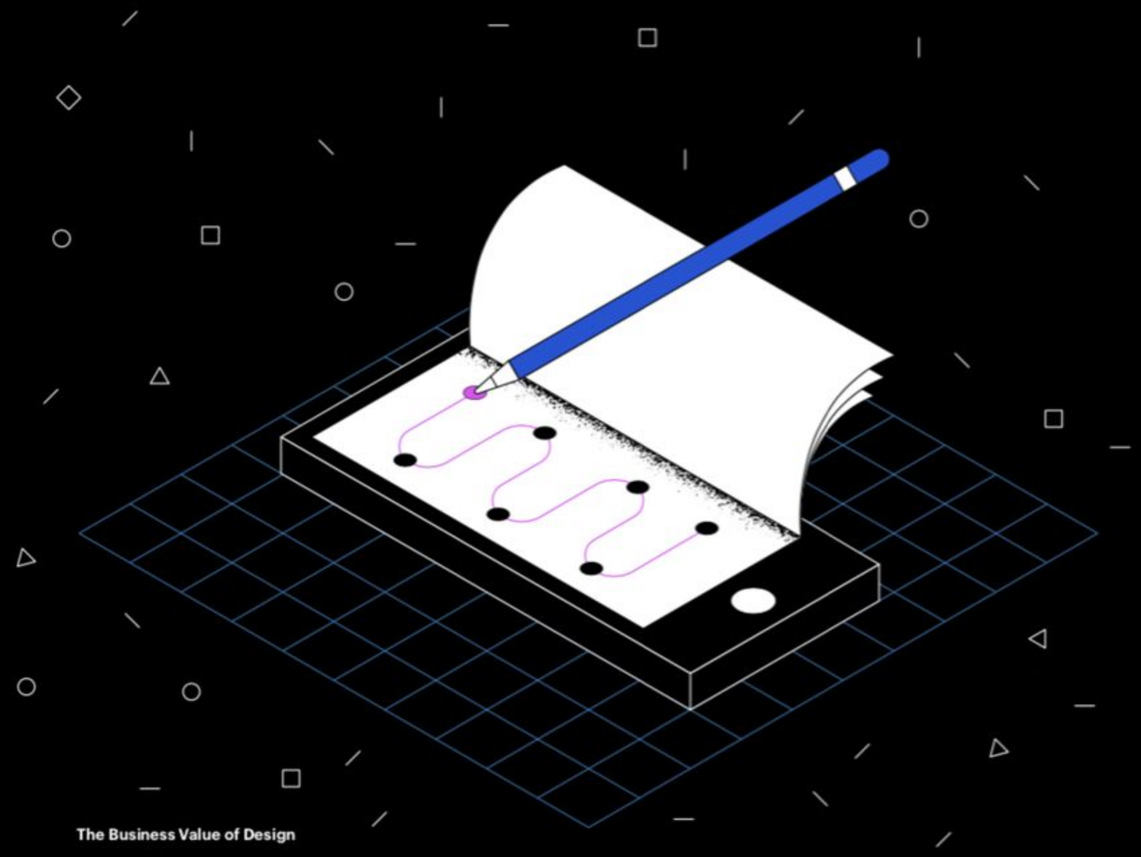
## Surprisingly very few companies conduct qualitative user research.

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

Source: @aiga Design Census 2017 @neavc @tweetalbert @daynagrayson

# More Than a Product: It's User Experience

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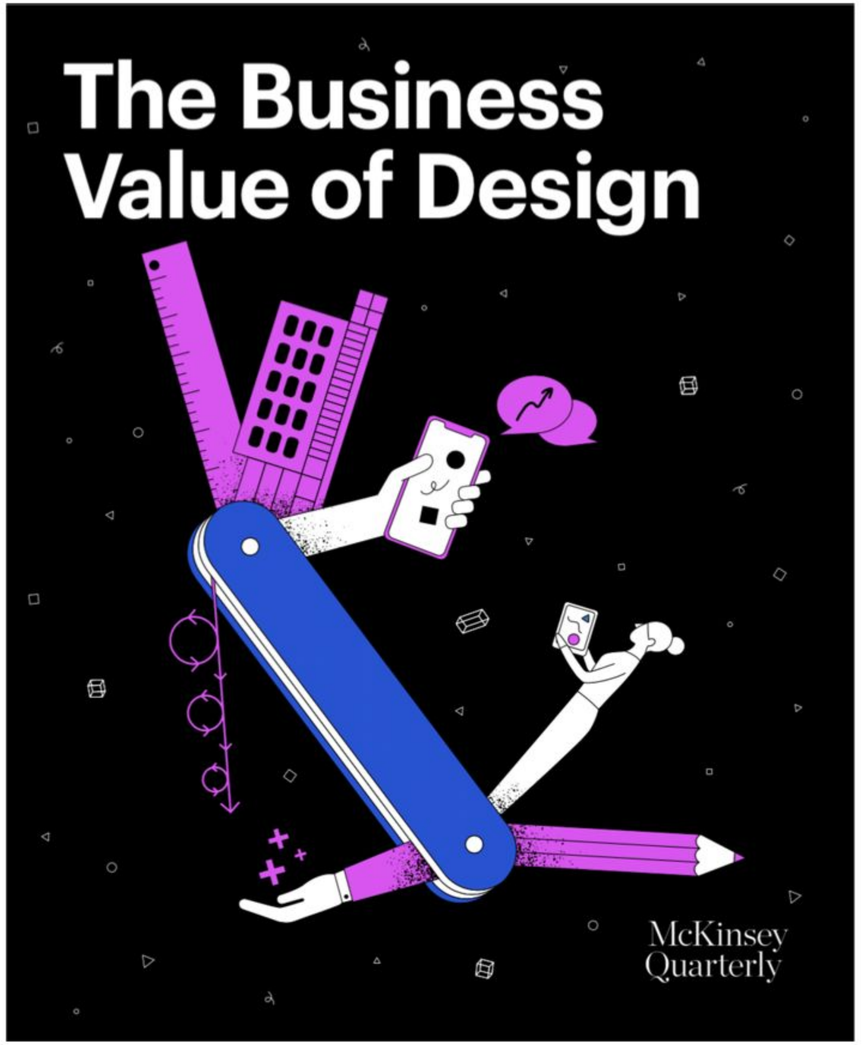
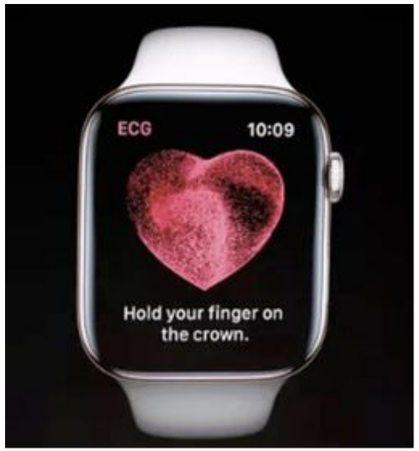
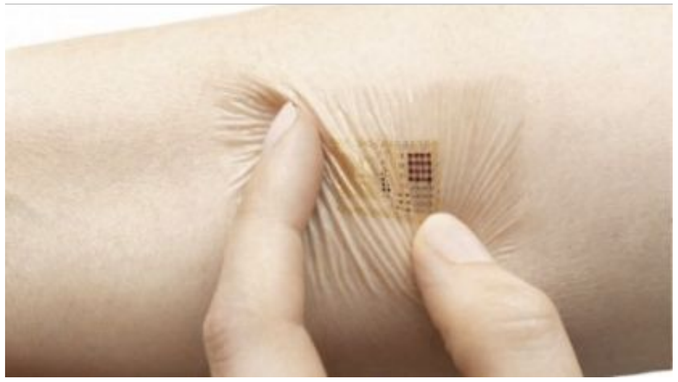


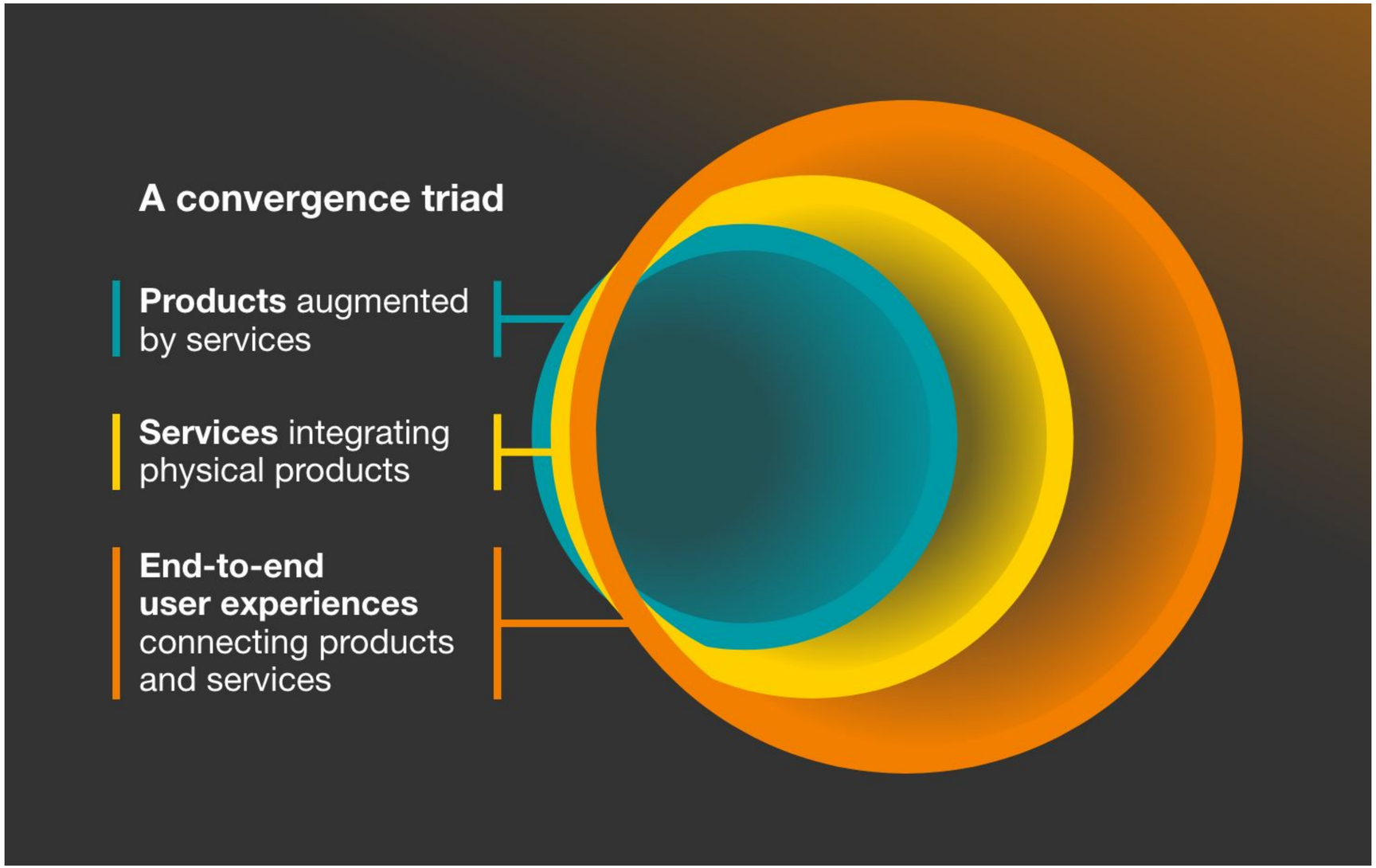

https://www.mckinsey.com/business-functions/mckinsey-design/our-insights/the-business-value-of-design



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

# BLURRED BOUNDARIES BETWEEN PRODUCTS, SERVICES, ENVIRONMENTS




www.mckinsey.com/business-functions/mckinsey-design/our-insights/five-fifty-midlife-of-design

# PRODUCTS AUGMENTED BY SERVICES

# SERVICES INTEGRATING PHYSICAL PRODUCTS

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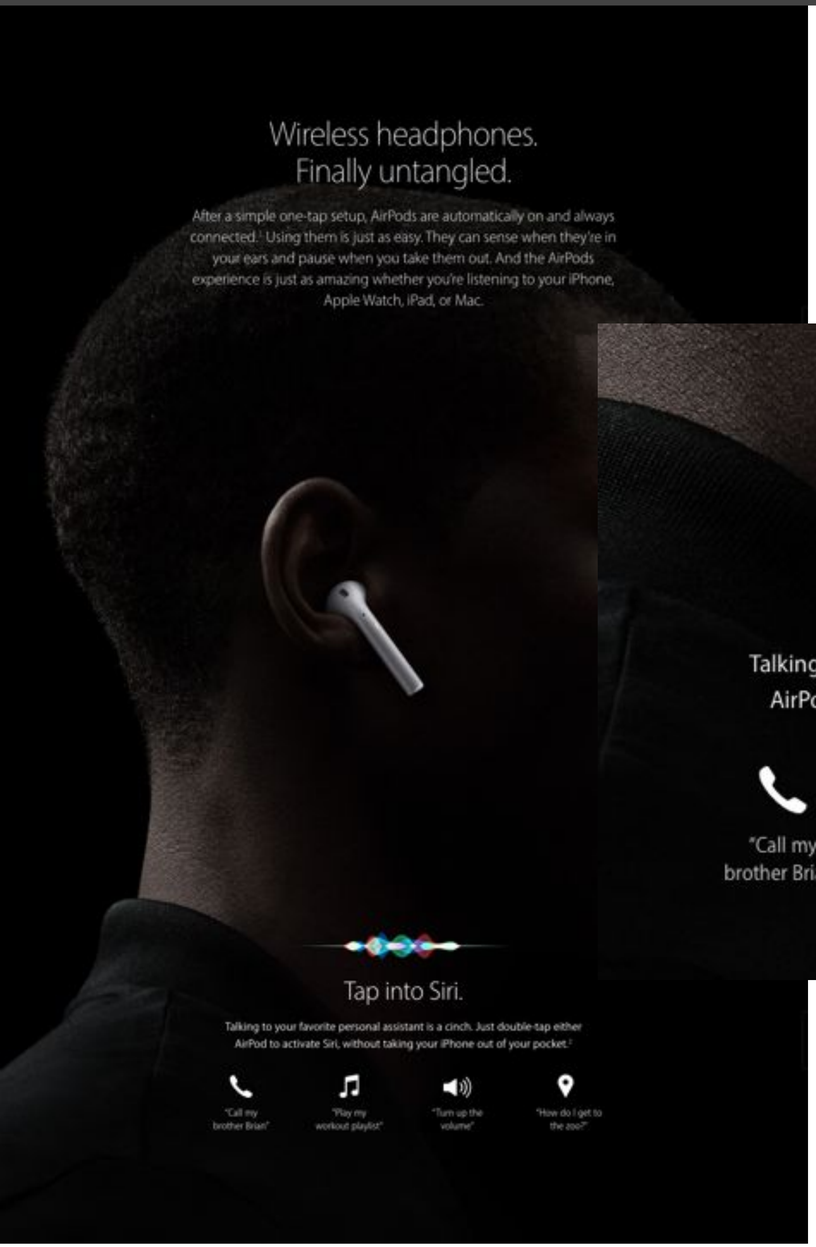


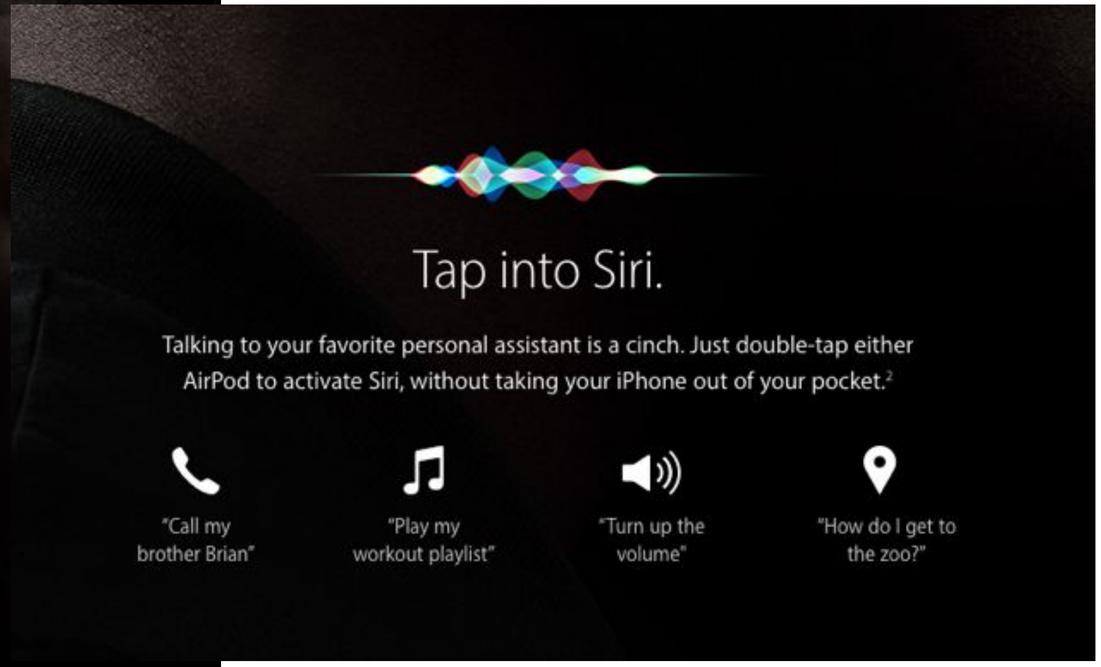

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# Why Silicon Valley is all wrong about Apple's AirPods

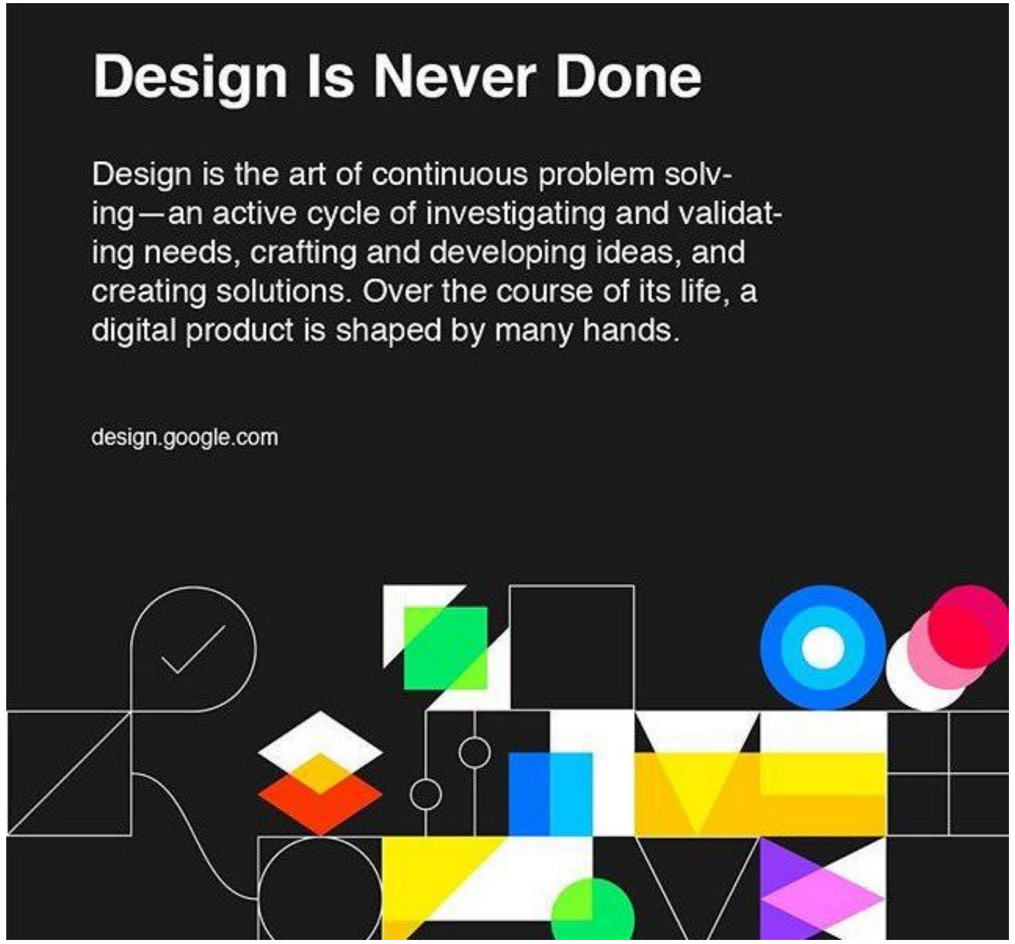
So you think Apple is a tech company? No, you're wrong.

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

# PRODUCTS-SERVICES THAT FOLLOW SOFTWARE AND DIGITAL LOGICS





UPDATES AND ASYMMETRIC OBSOLESCENCE

design.google/library/design-never-done/

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# DESIGN THINKING

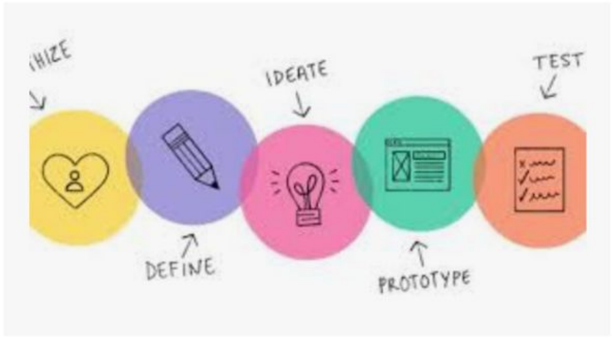
## A contemporary interpretation and the relation to Creative Problem Solving

# CPS vs DT

Kirsty Nunez

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

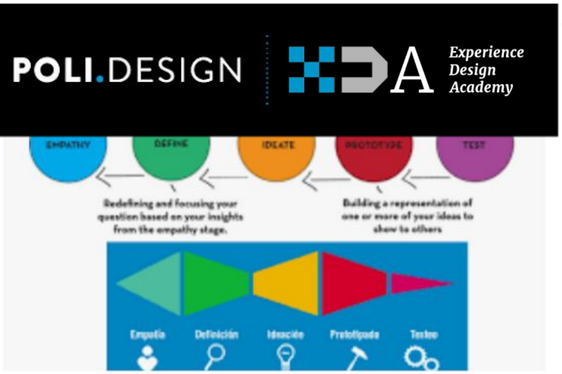
| | Creative Problem Solving | Design Thinking | Research Elements |
|---|---|---|---|
| Empathize | | Observe<br>Engage<br>Watch and Listen | ✓ |
| Define the Challenge | Object Finding<br>Fact Finding<br>Problem Finding | Define / Solve the Right Problem | |
| Learn from Those for Whom You are Designing | | Research | ✓ |
| Ideation | Ideas Finding | Ideate | |
| Prototype | | Prototype | |
| Obtain User Feedback | | Test | ✓ |
| Identify the Solution | Solution Finding | Choose | |
| Obtain Buy-In from Stakeholders | Acceptance Finding | | |
| Implementation | | Implement | |
| Learn and Optimize | | Learn | ✓ |



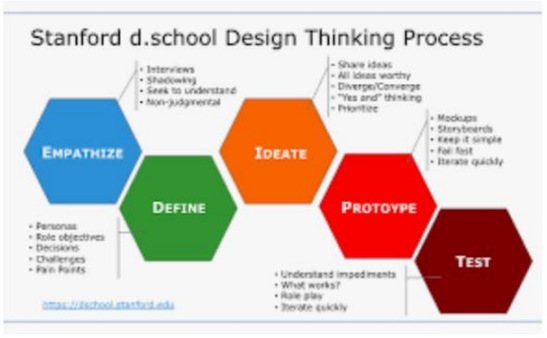

Il Laboratorio Aperto di Ravenna ...
ravennanotizie.it

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

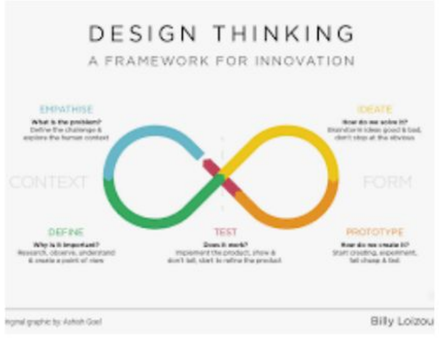
Design thinking, cos'è e come funziona
university2business.it




Design Thinking vs.Technological Innovation
fguell.com

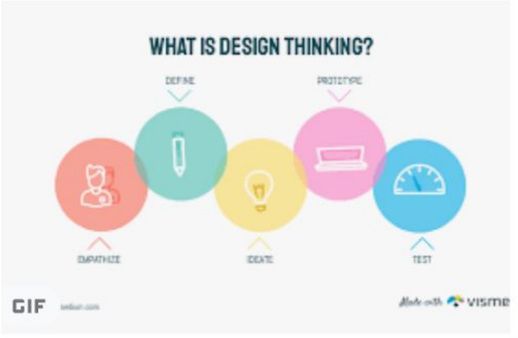



What is Design Thinking? – Agile ...
theagileelephant.com



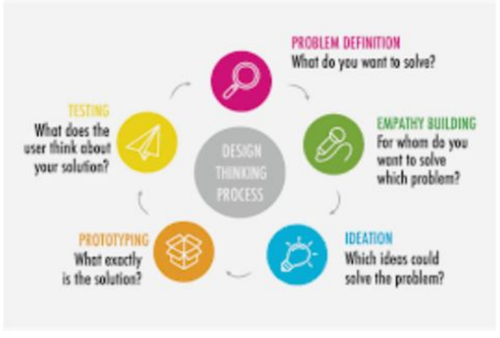

Design Thinking - BILLY LOIZOU
billyloizou.com

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

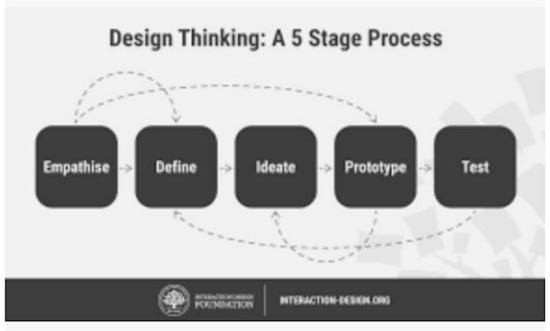



Design Thinking vs. Visual Thinking ...
visme.co

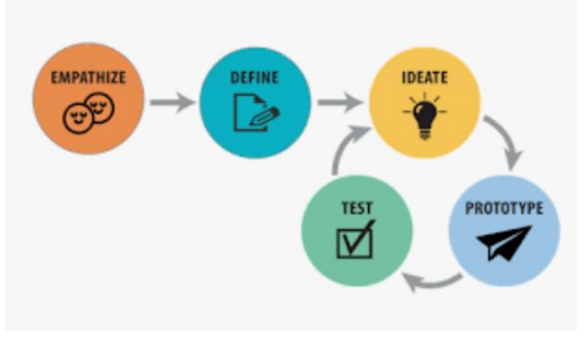
Design Thinking, le assicurazioni tra i ...
insurzine.com




Module »THINK« - Design Thinking Playroom
playroom.rocks

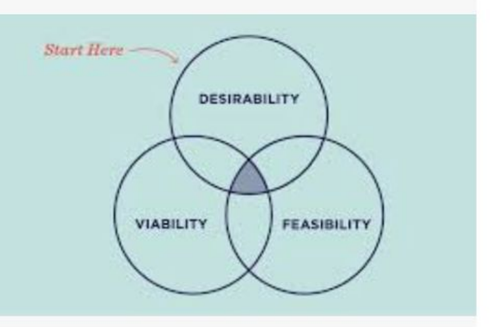



5 Stages in the Design Thinking Process ...
interaction-design.org




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

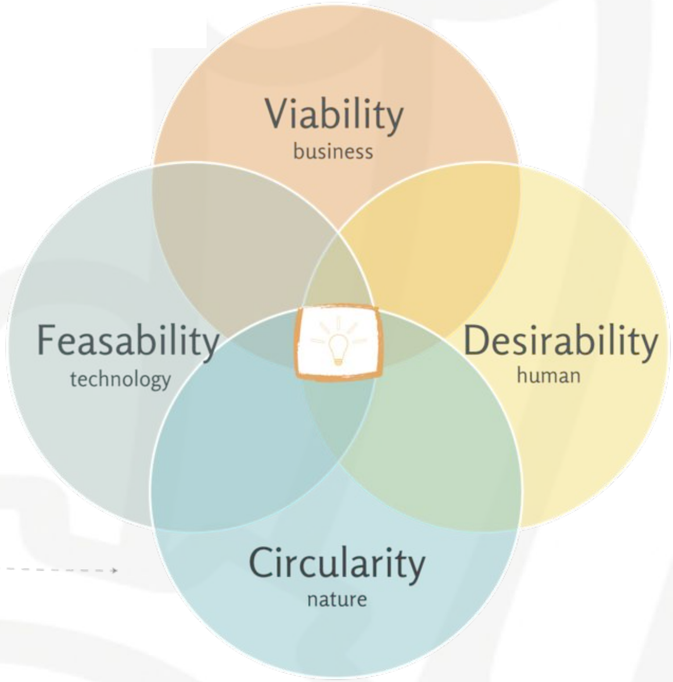
**Design thinking can be described as a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity.**

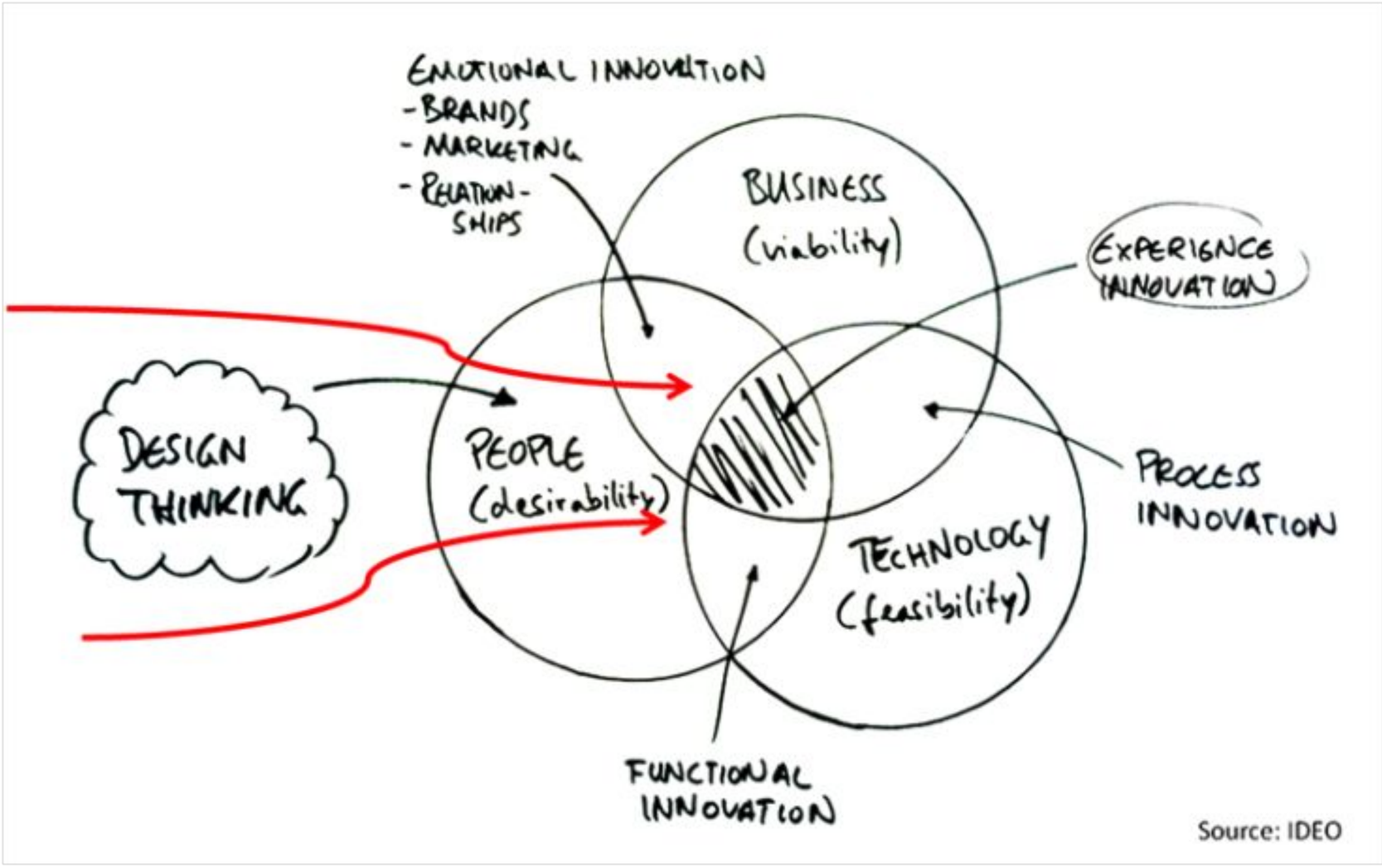
On reflection this is a narrow description that focuses on design thinking's role within business. The next sentence that I wrote."….design thinking converts need into demand" , which I borrowed from *Peter Drucker*, broadens things out a bit but still assumes an economic motivation.

**Tim Brown**
http://designthinking.ideo.com/?p=49

# From Design Thinking to Circular Design





# Design Thinking = Design (?)

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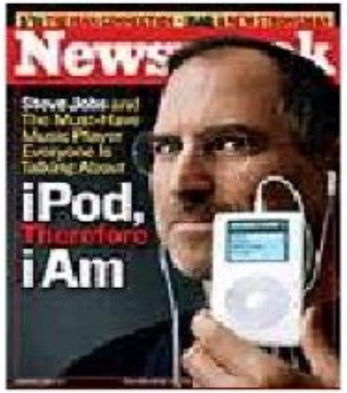
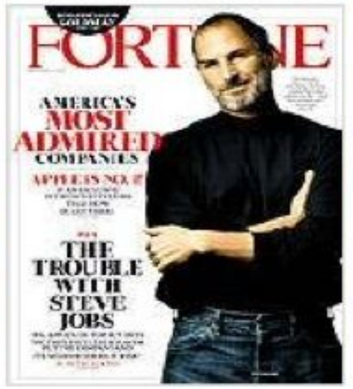
## Will the Design Thinking change the world of business?





# Design Thinking ≠ Design (?)

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## The Economist

Redesigning Business Summit:
The Big Rethink

# Design Thinking ≠ Design (?)

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## 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 (?)

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## Design“ers” thinking

Designers have an experimental approach typical of learning bu 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.

Roberto Verganti _ 2010 (@Core77.com)

# Design Thinking ≠ Design (?)

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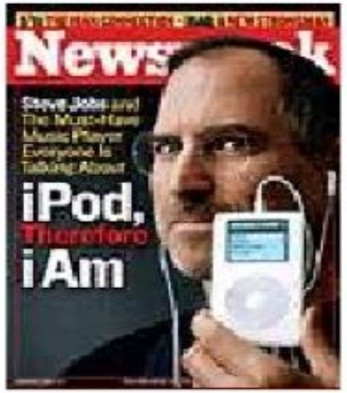
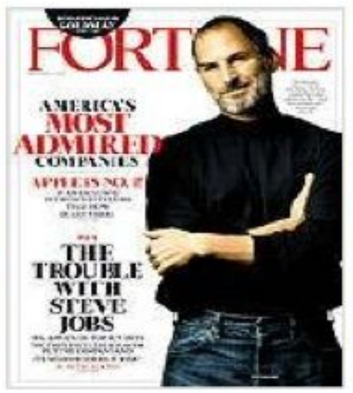
## Design thinking is not for all !!!





# Design Thinking is Bullsh*t

**Natasha Jen**
Graphic Designer _ Pentagram

# LEAN

[UX]

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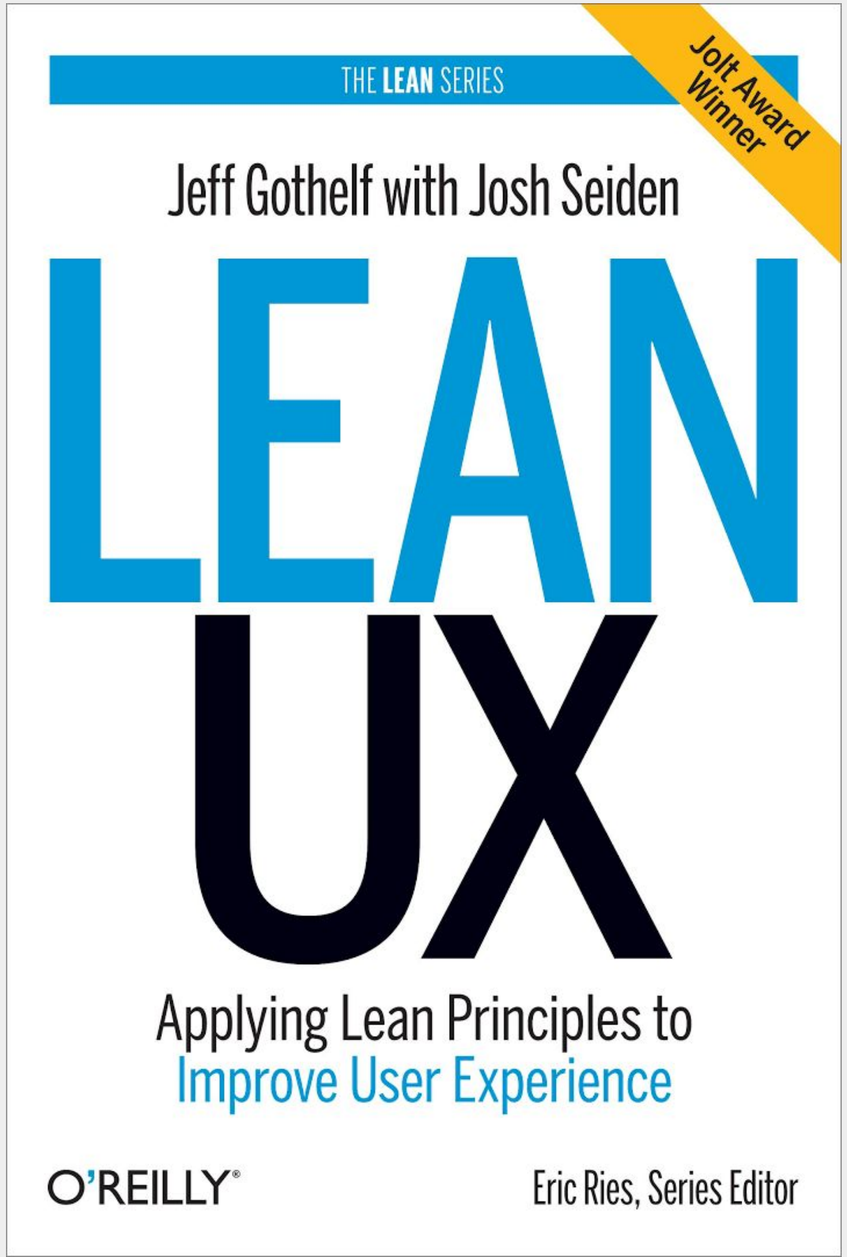
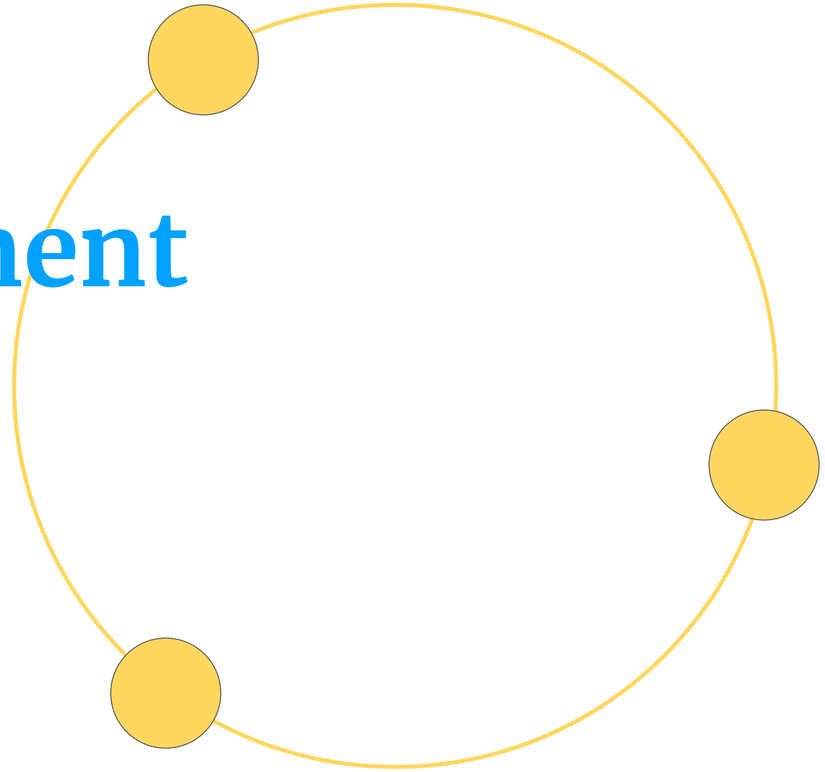
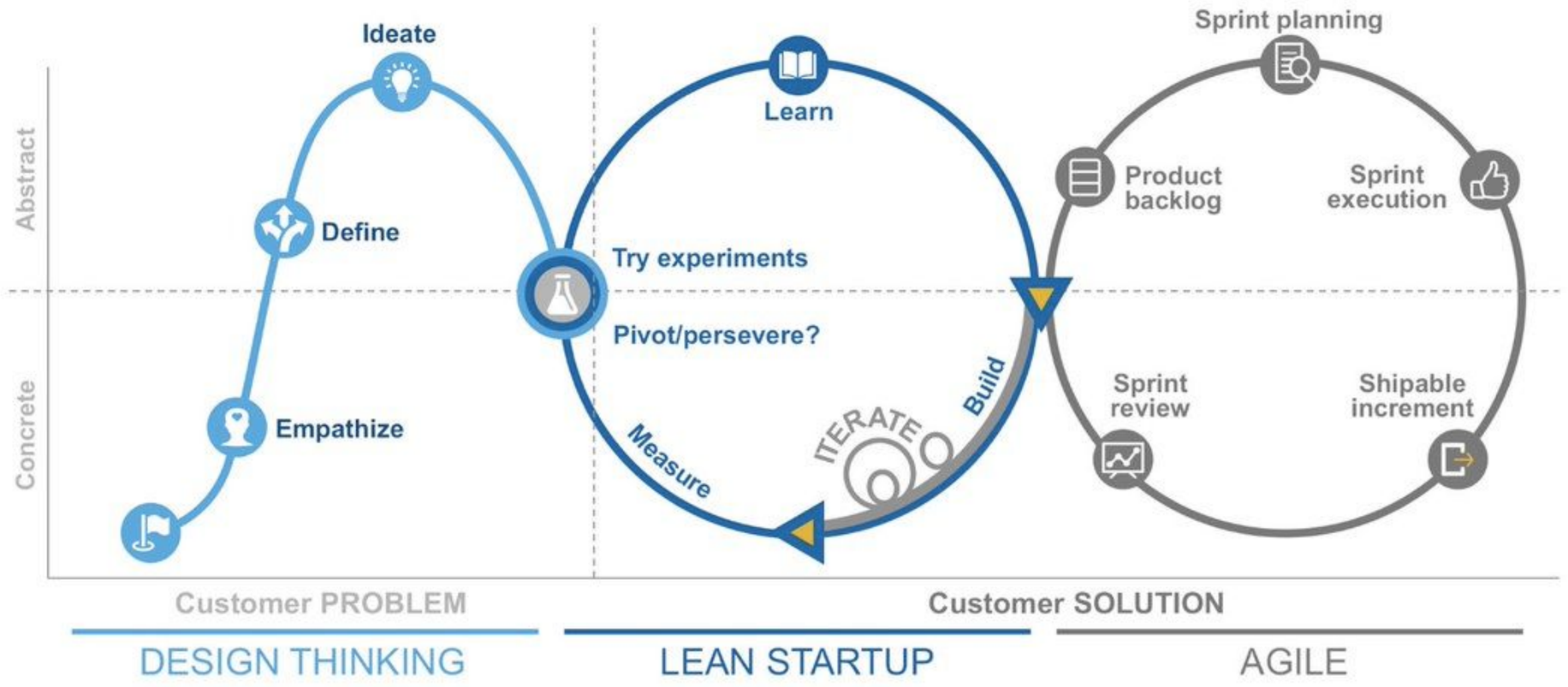


+ Design thinking
+ Agile software development
+ Lean startup method



# Combine Design Thinking, Lean Startup and Agile

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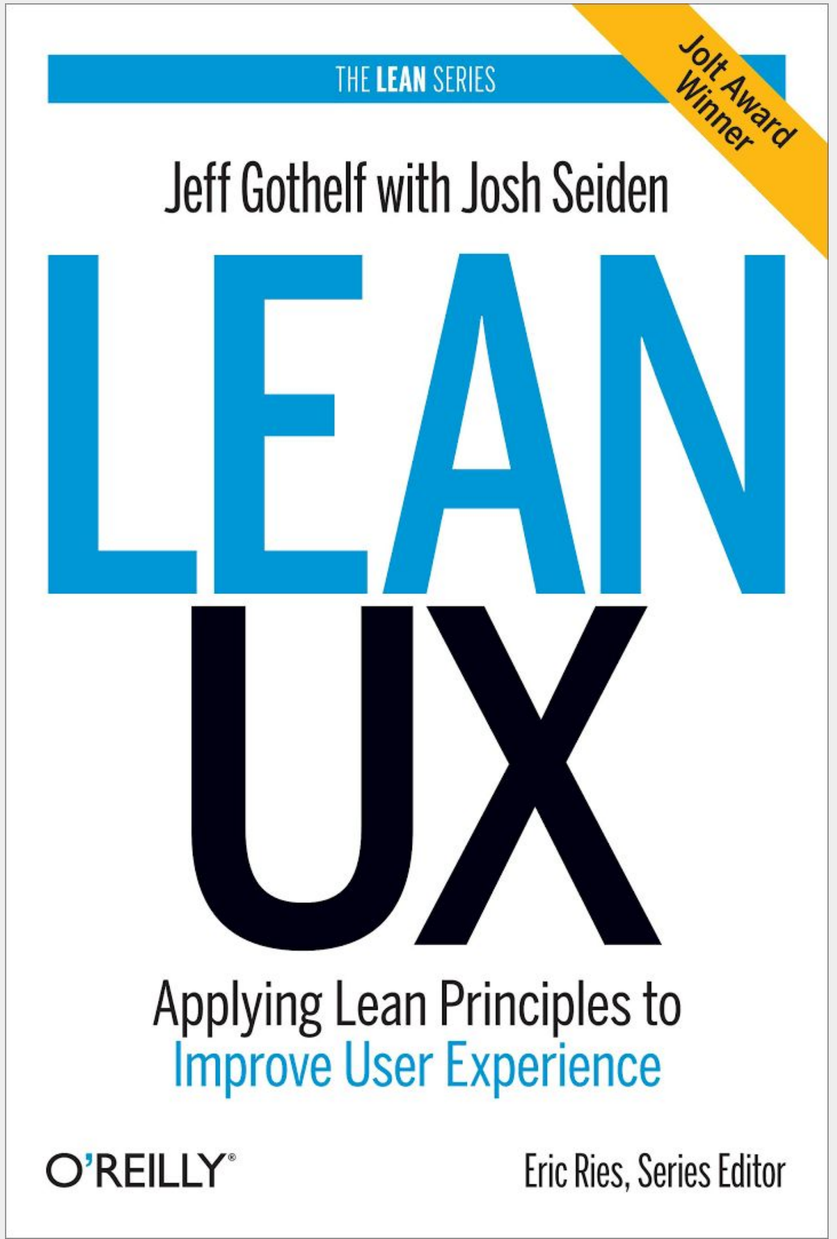
https://medium.com/@SteveGlaveski/the-difference-between-design-thinking-lean-startup-and-agile-5cf07b117562

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.

https://medium.com/@SteveGlaveski/the-difference-between-design-thinking-lean-startup-and-agile-5cf07b117562

"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

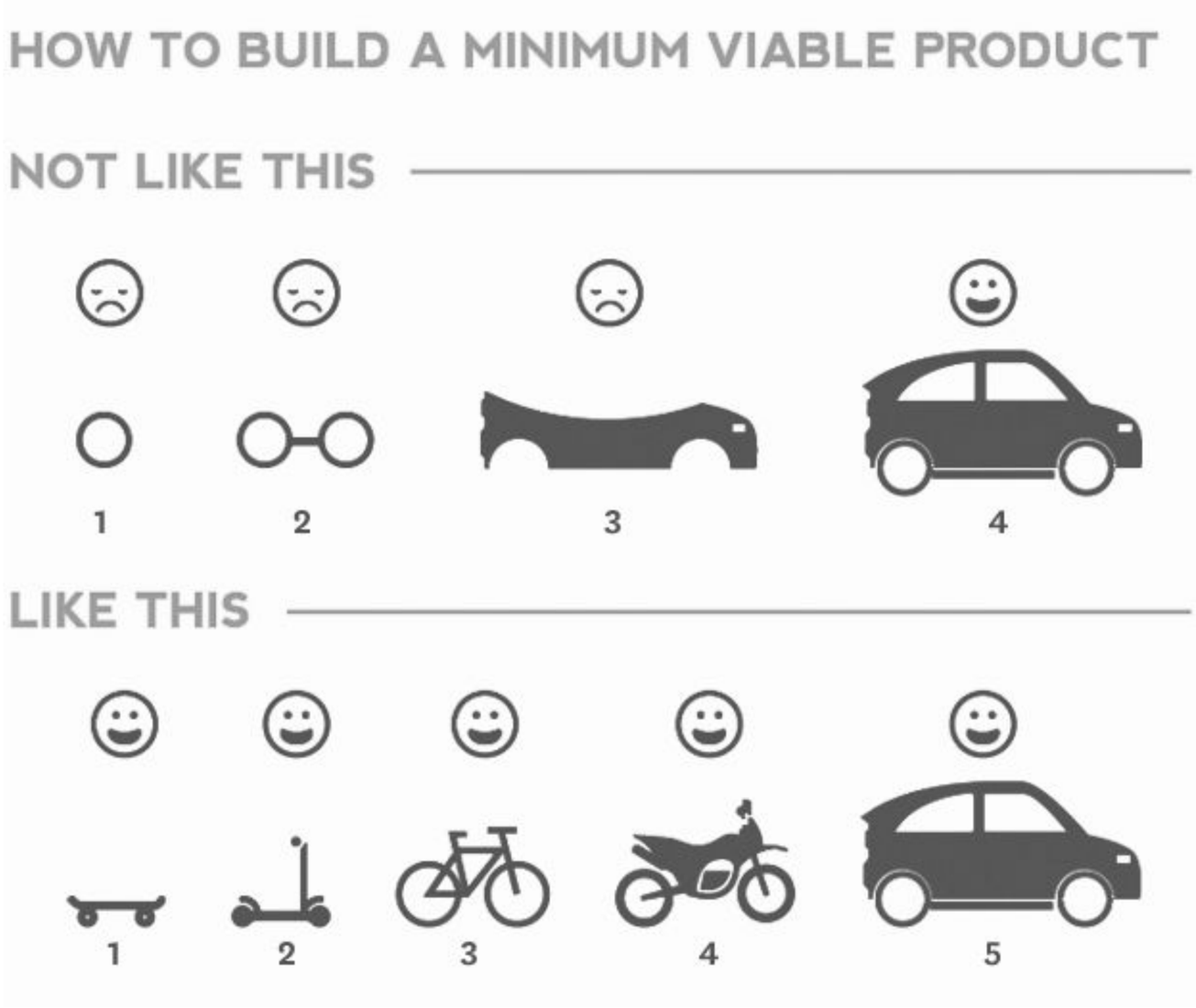


# Lean UX

## 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




https://uxdesign.cc/the-product-manager-and-the-mvp-a0c618b0d8fa

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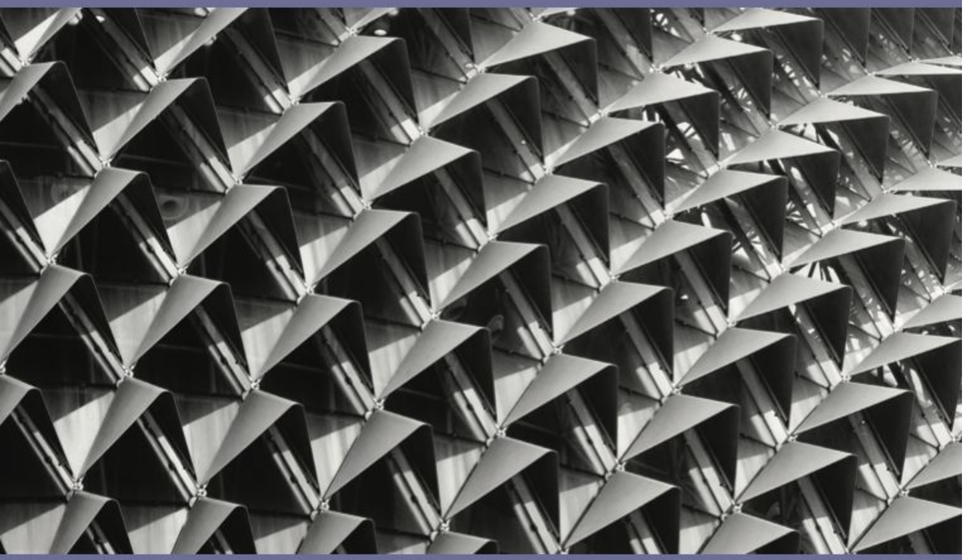
# Understanding Design Thinking, Lean, and Agile



Jonny Schneider

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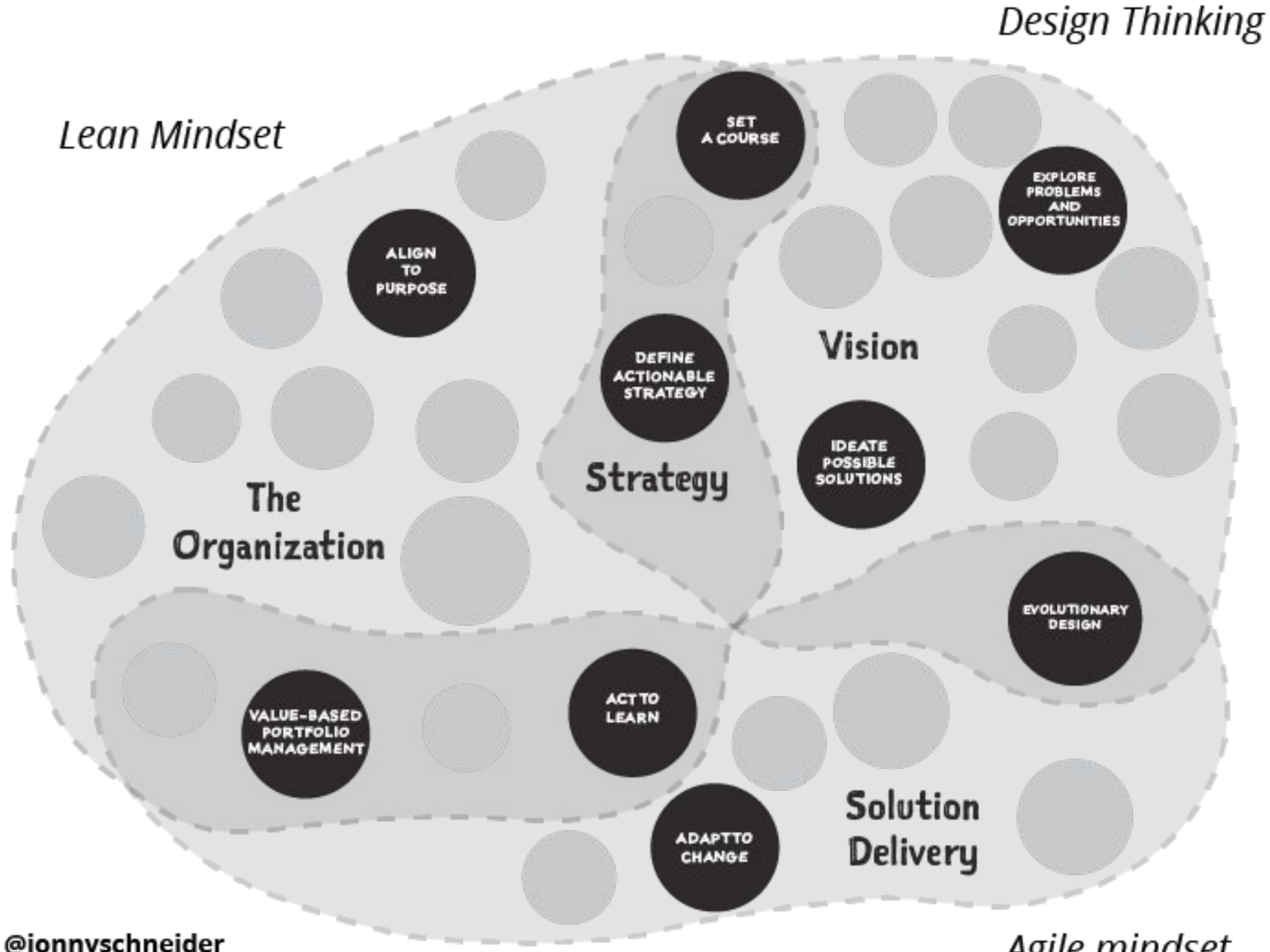
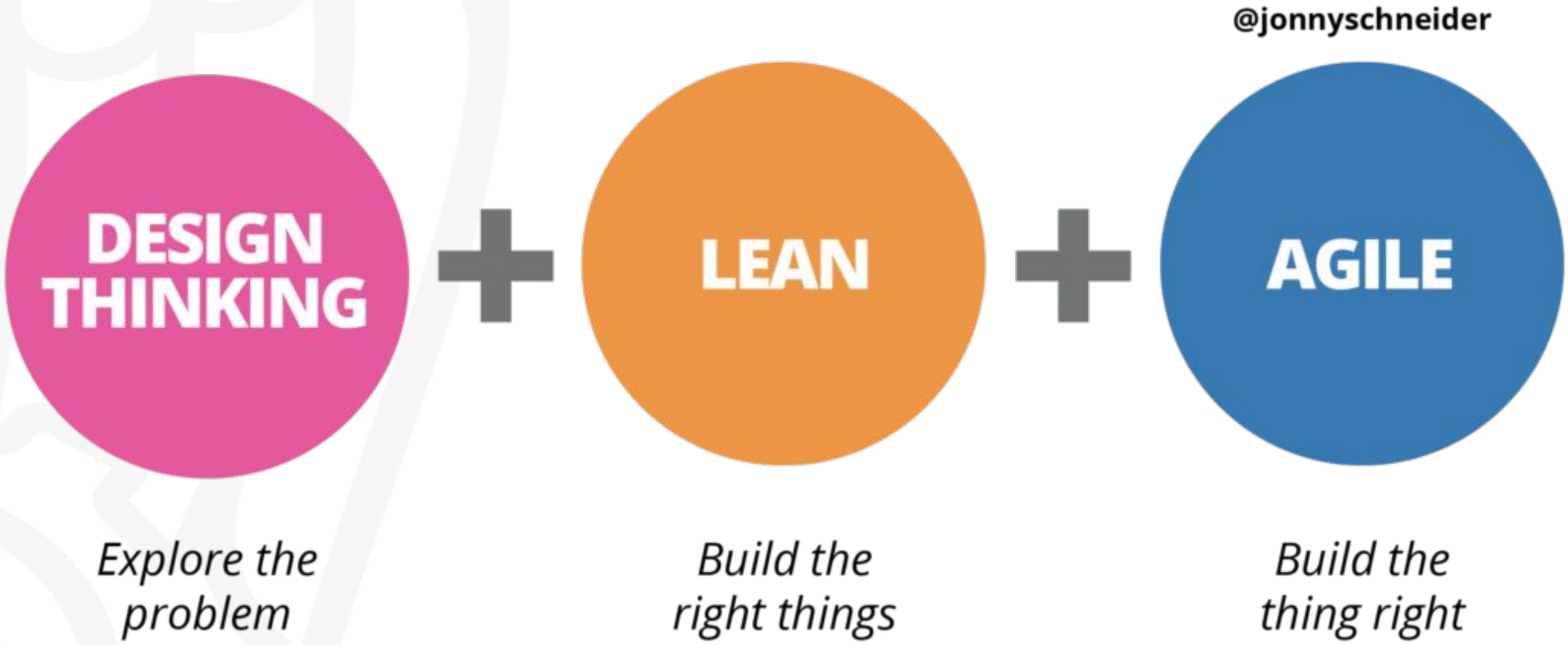


# Comparing design methodologies



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# CREATIVE CONFIDENCE

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

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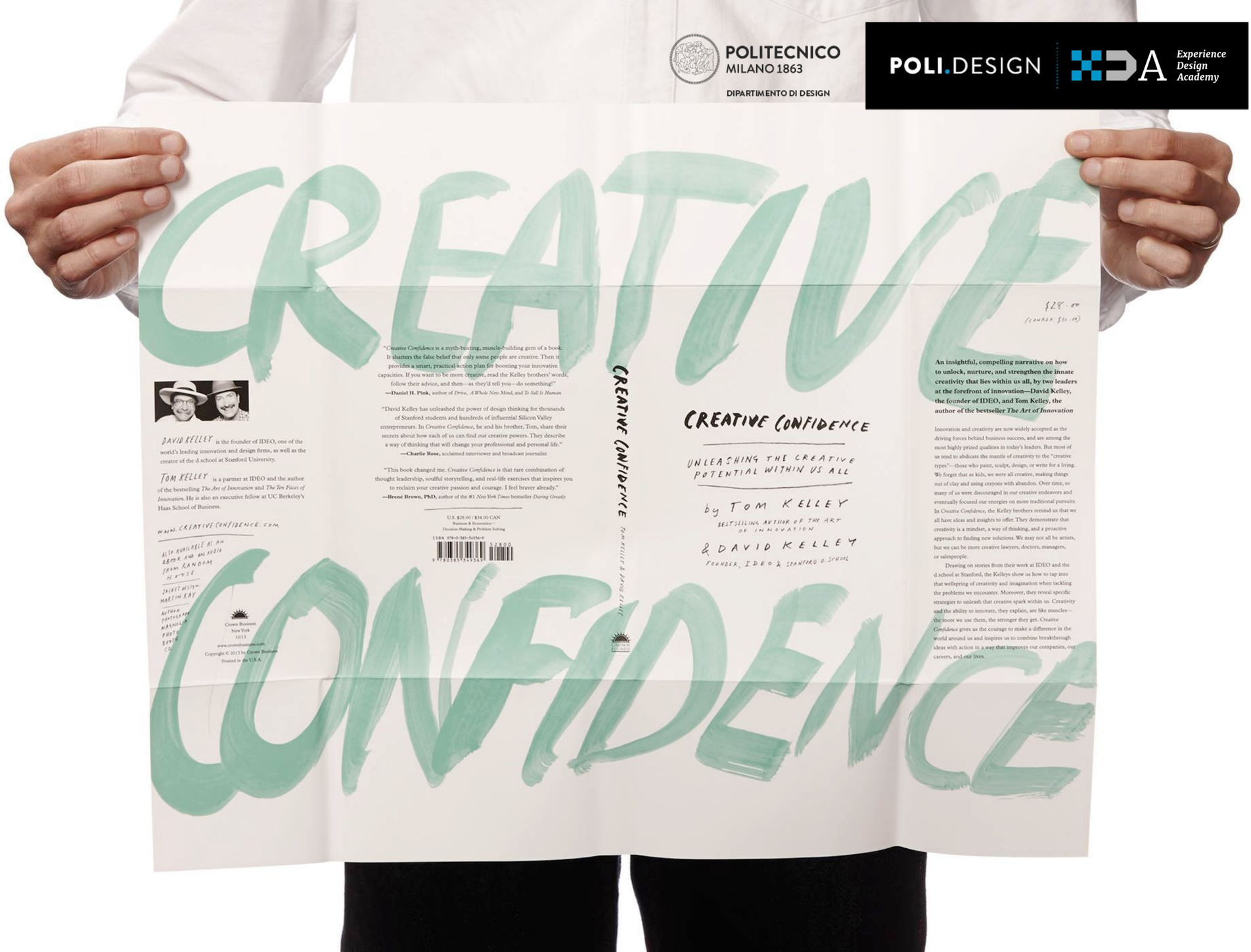

# DAVID KELLEY _ IDEO _ D.SCHOOL STANFORD

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# POLIMI DESIGN SYSTEM

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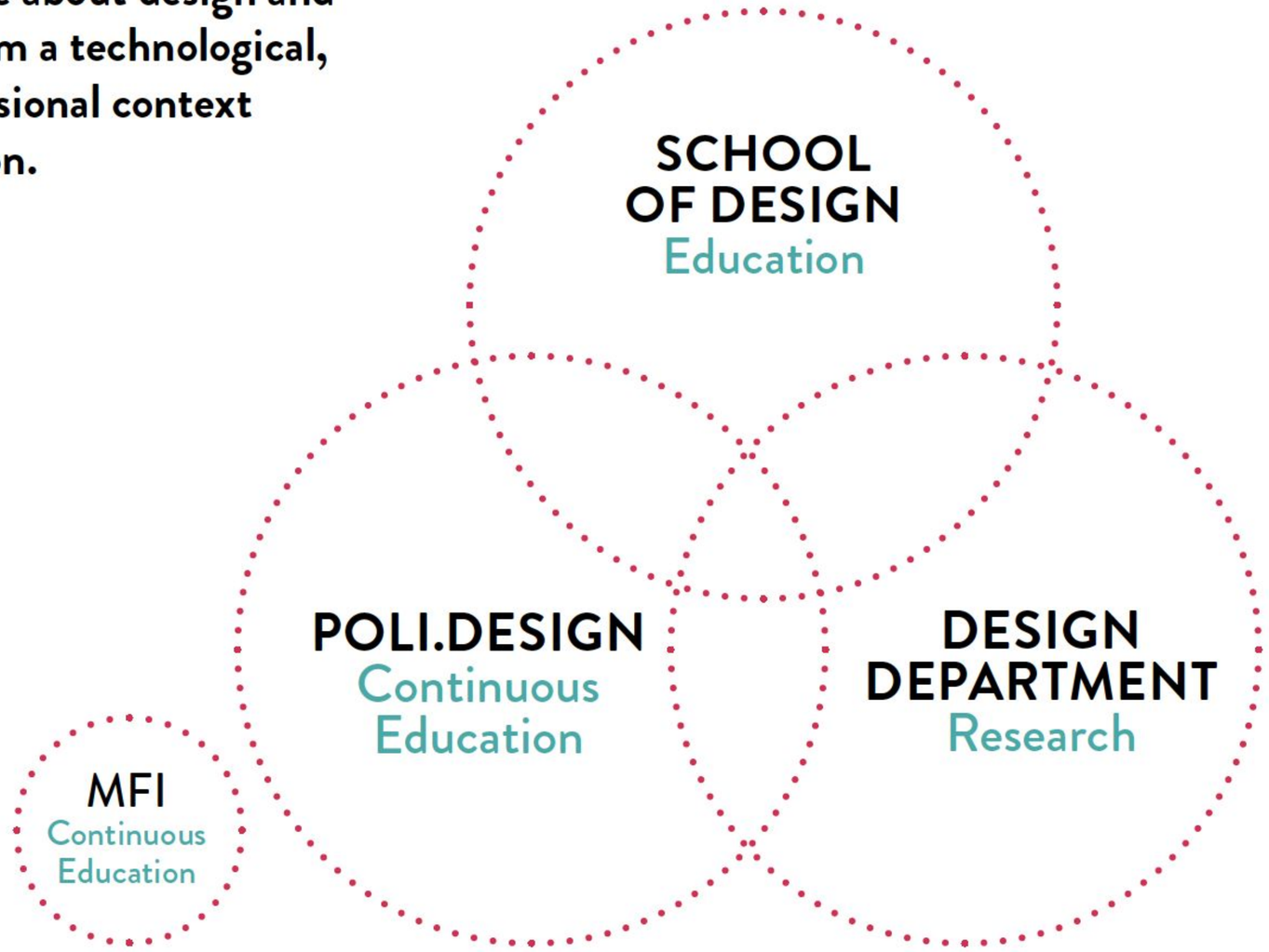
**It consists of 3 entities and intends to carry out excellence about design and to satisfy requests from a technological, productive and professional context in continuous evolution.**



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| # RANK | UNIVERSITY | LOCATION | COMPARE | QS STARS™ |
|---|---|---|---|---|
| 2019 | University search | By location | | Rated only |
| 1 | Royal College of Art More | United Kingdom | | |
| 2 | University of the Arts London More | United Kingdom | | |
| 3 | Parsons School of Design at The New School More | United States | | |
| 4 | Rhode Island School of Design (RISD) More | United States | | |
| 5 | Massachusetts Institute of Technology (MIT) More | United States | | |
| 6 | Politecnico di Milano More | Italy | | |

QS WORLD UNIVERSITY RANKINGS®

1st

3rd

6th

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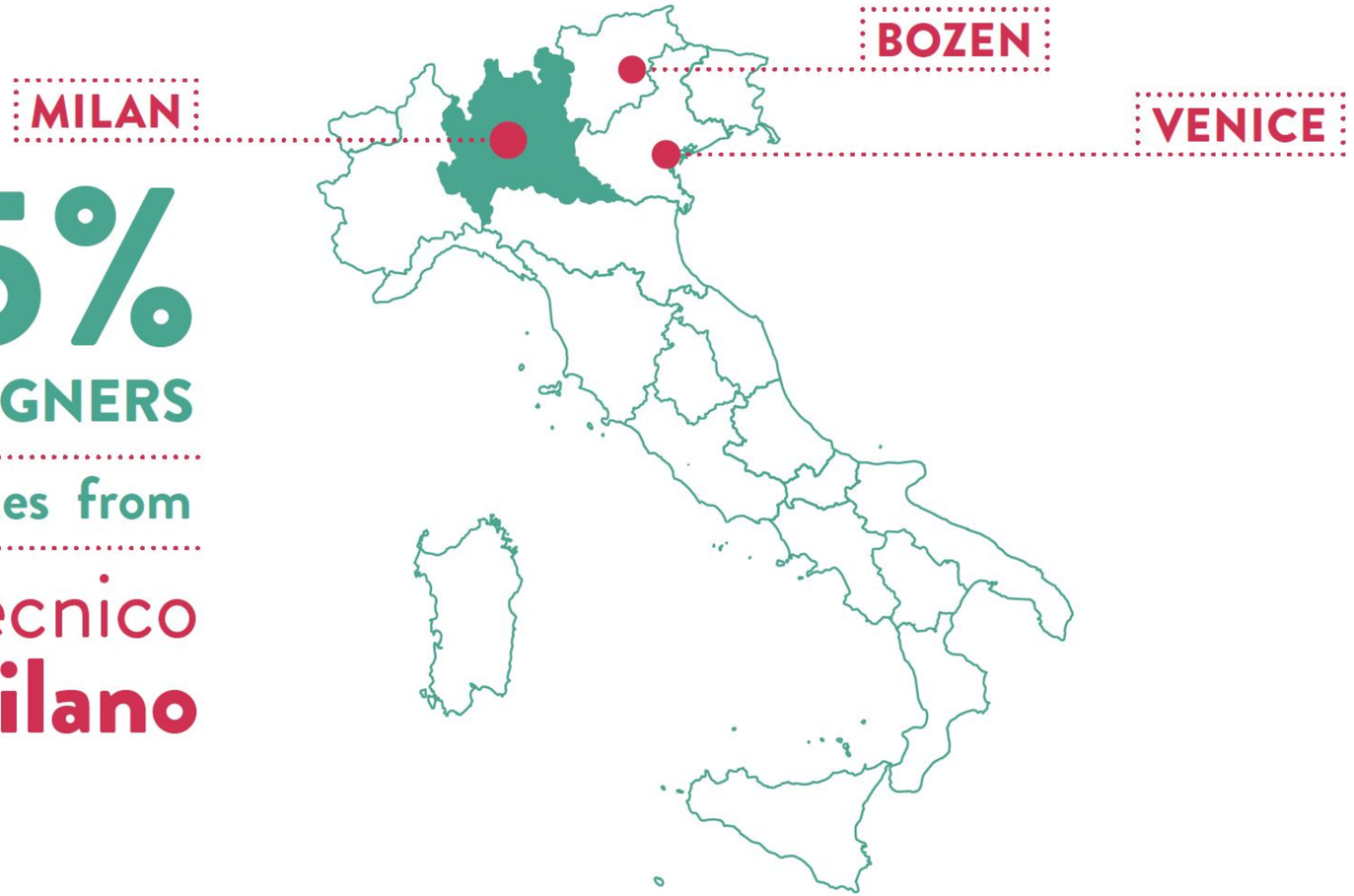
# 3.School of Design

## the Italian context



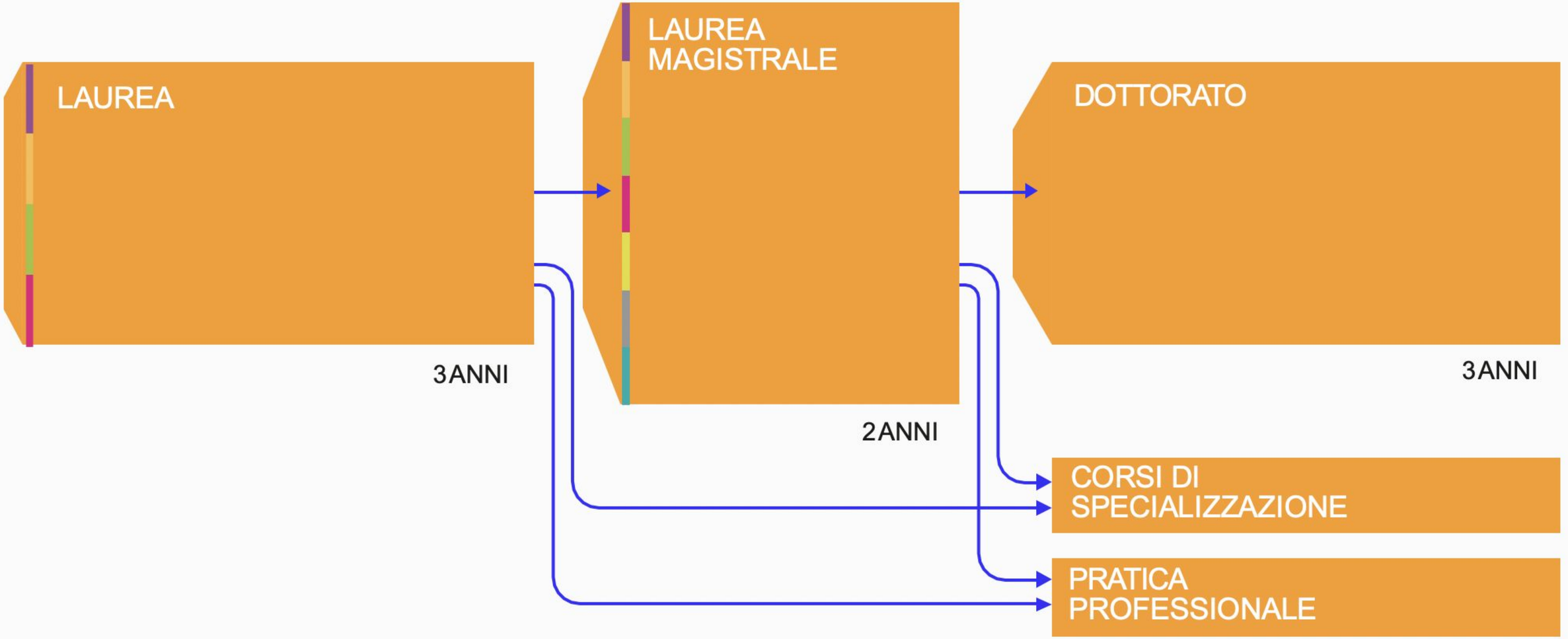

**45%**

**of DESIGNERS**

Graduates from

Politecnico **di Milano**

# POLIMI DESIGN SYSTEM



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1° LIVELLO - LAUREA

3 ANNI

2° LIVELLO - LAUREA MAGISTRALE

2 ANNI

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**Workshop interdisciplinare > a scelta**

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SICERP

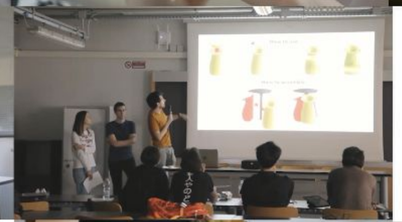
VERALLIA

BRAUN

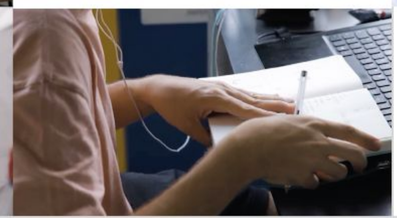
GHELFI ONDULATI

ALLOCCHIO BACCHINI / RA.EL.CON

YAMAHA



BLS



RANCILIO

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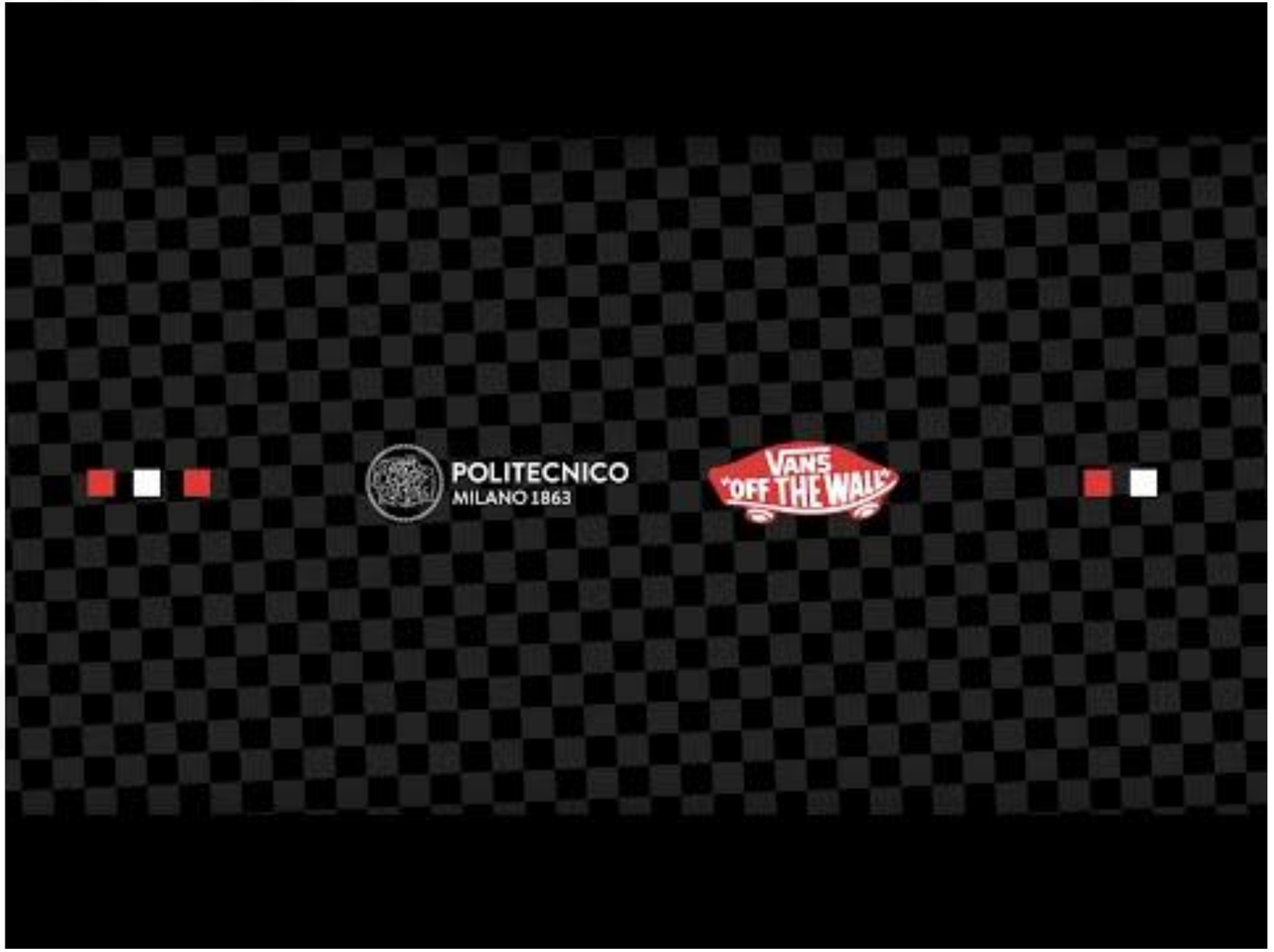

*‘una stupefacente benedizione per il pianeta… dobbiamo essergli molto grati (al **Coronavirus, NdR**) perché potrebbe essere la ragione per cui sopravvivremo come specie’*

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

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# Grazie / Thank you / 谢谢

*venanzio.arquilla@polimi.it*

2019 - #UXDpolidesign

Fondazione Politecnico di Milano

# Prossimo webinar

## Design Thinking, user experience e SPRINT execution

## 23 luglio 2020, ore 16.30-18.00

***Programma e iscrizioni:***

***https://www.assolombarda.it/servizi/ricerca-e-innovazione/appuntamenti/design-thinking-user-experience-e-sprint-execution***

*innovazione@assolombarda.it*

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