



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

# The Hybrid Model Matrix

## Enhancing Stage-Gate with Design Thinking, Lean Startup, and Agile

**Nicolò Cocchi, Clio Dosi, Matteo Vignoli**

Department of Management

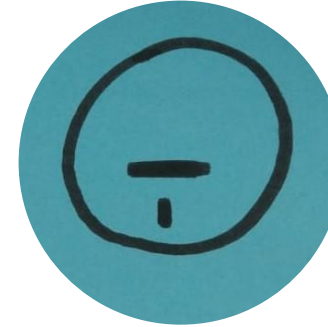
# Authors



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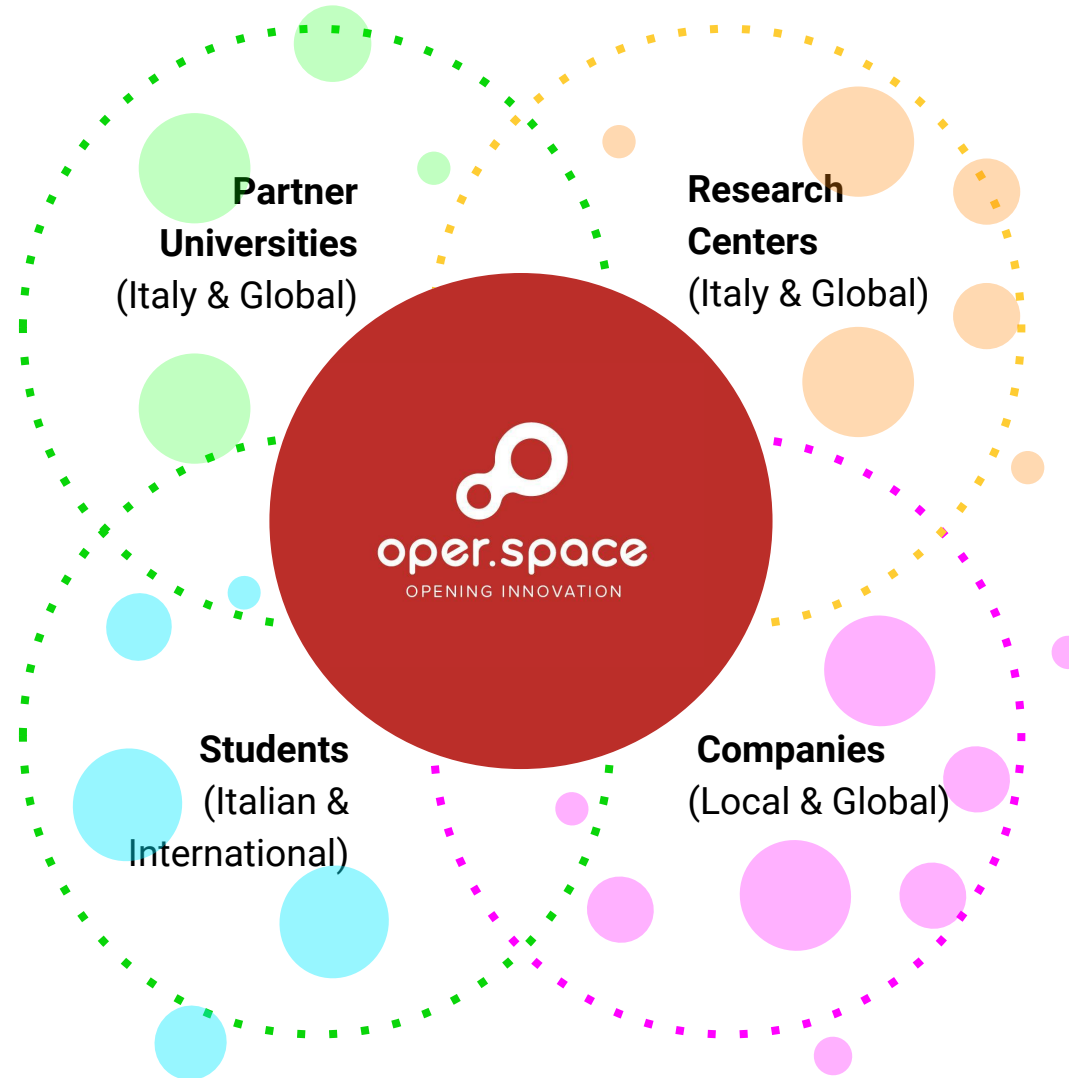
**Clio Dosi**  
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**Matteo Vignoli**  
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September 14th, 2021

# Who are we

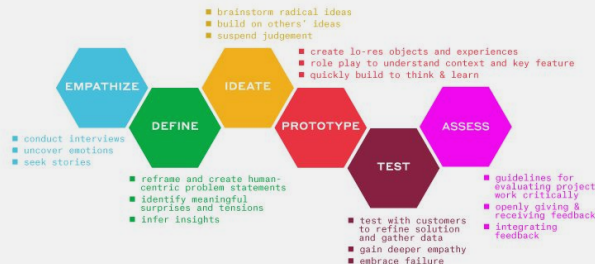
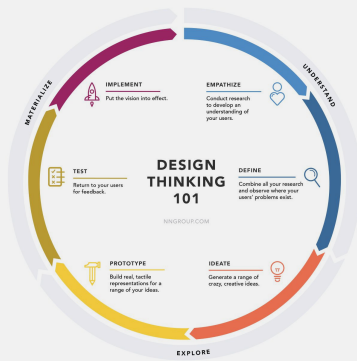


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# ONE SIZE DOES NOT FIT ALL

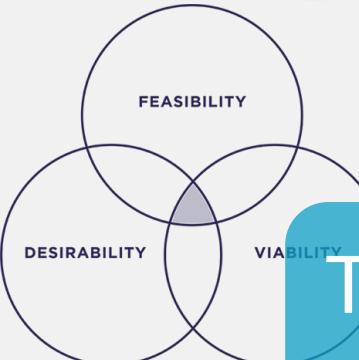
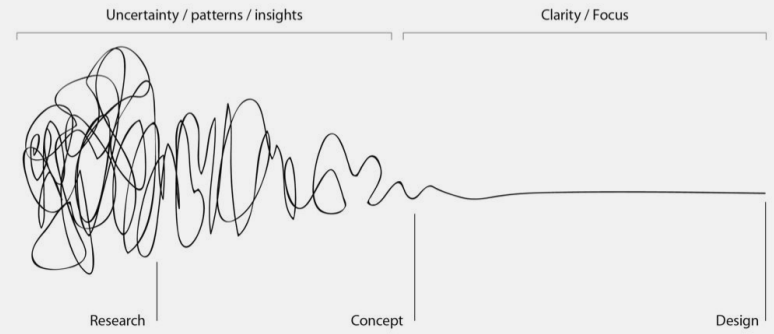
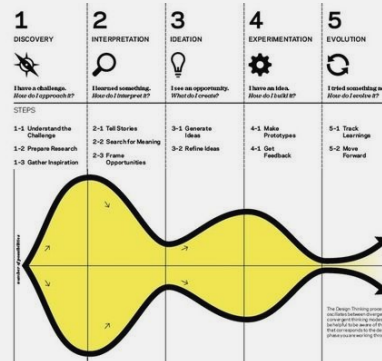
Designing new products for different business contexts requires that a company deploy different new product development (NPD) processes  
(MacCormack et al. 2012)

# Design Thinking Process Diagram\*



d.school Executive Education  
Hasso Plattner Institute of Design at Stanford University

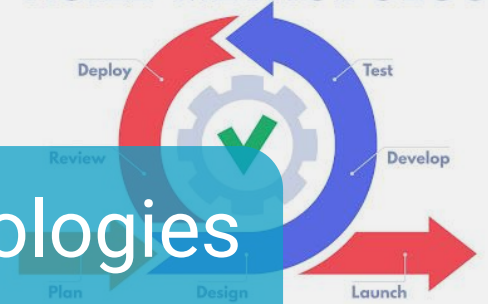
\*not necessarily linear, apply as needed ©2019



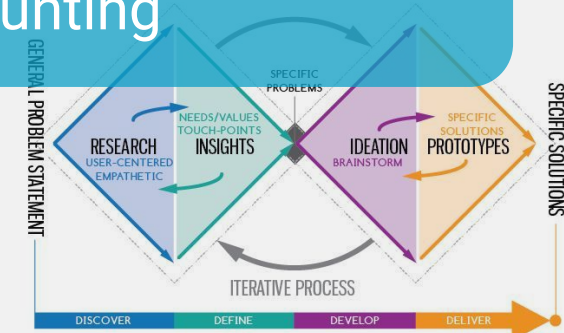
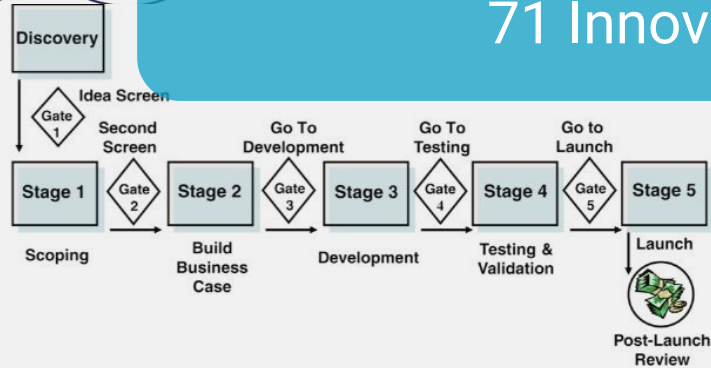
## SCRUM PROCESS



## AGILE METHODOLOGY

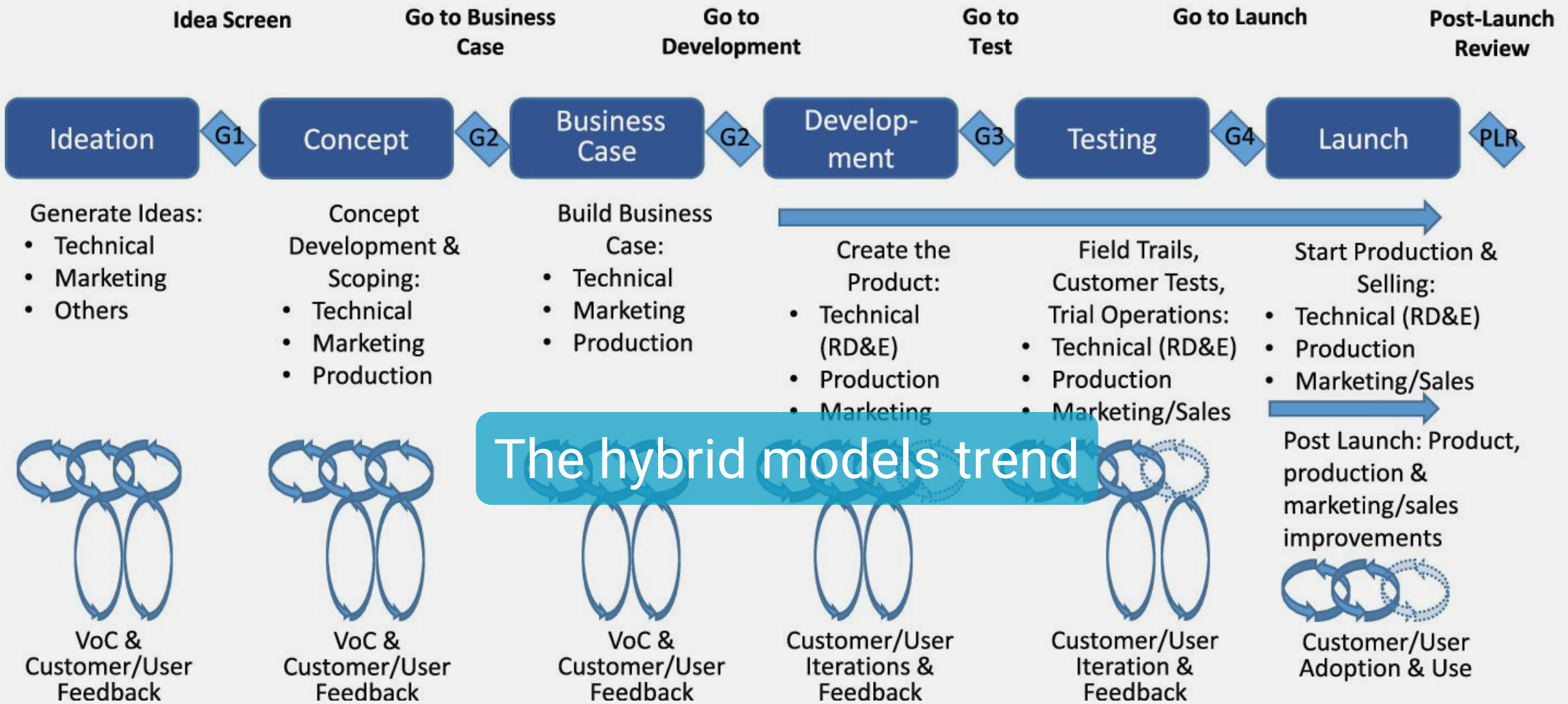


The overcrowded world of innovation methodologies  
71 Innovation methodologies...and still counting

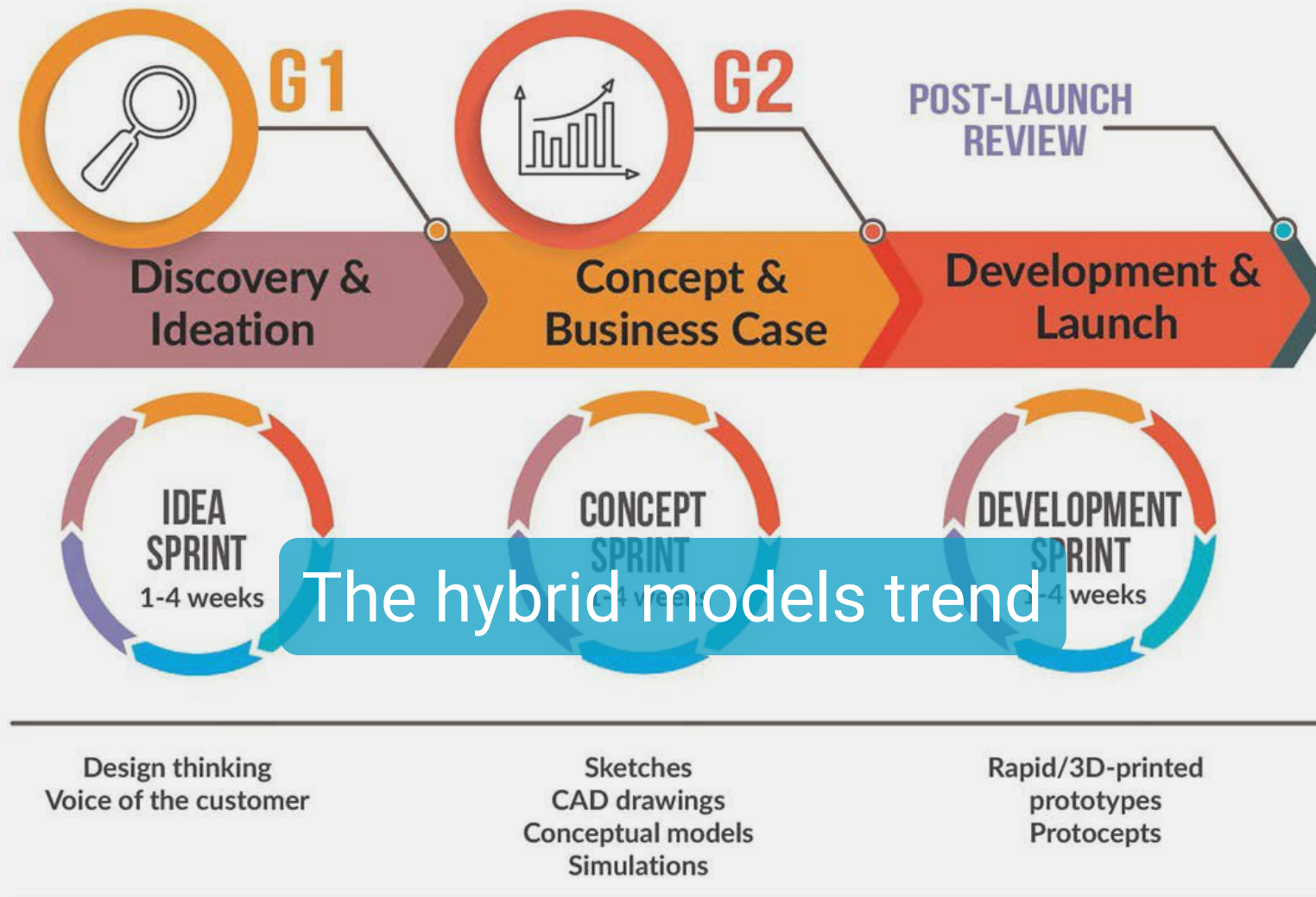


openinnovation.eu

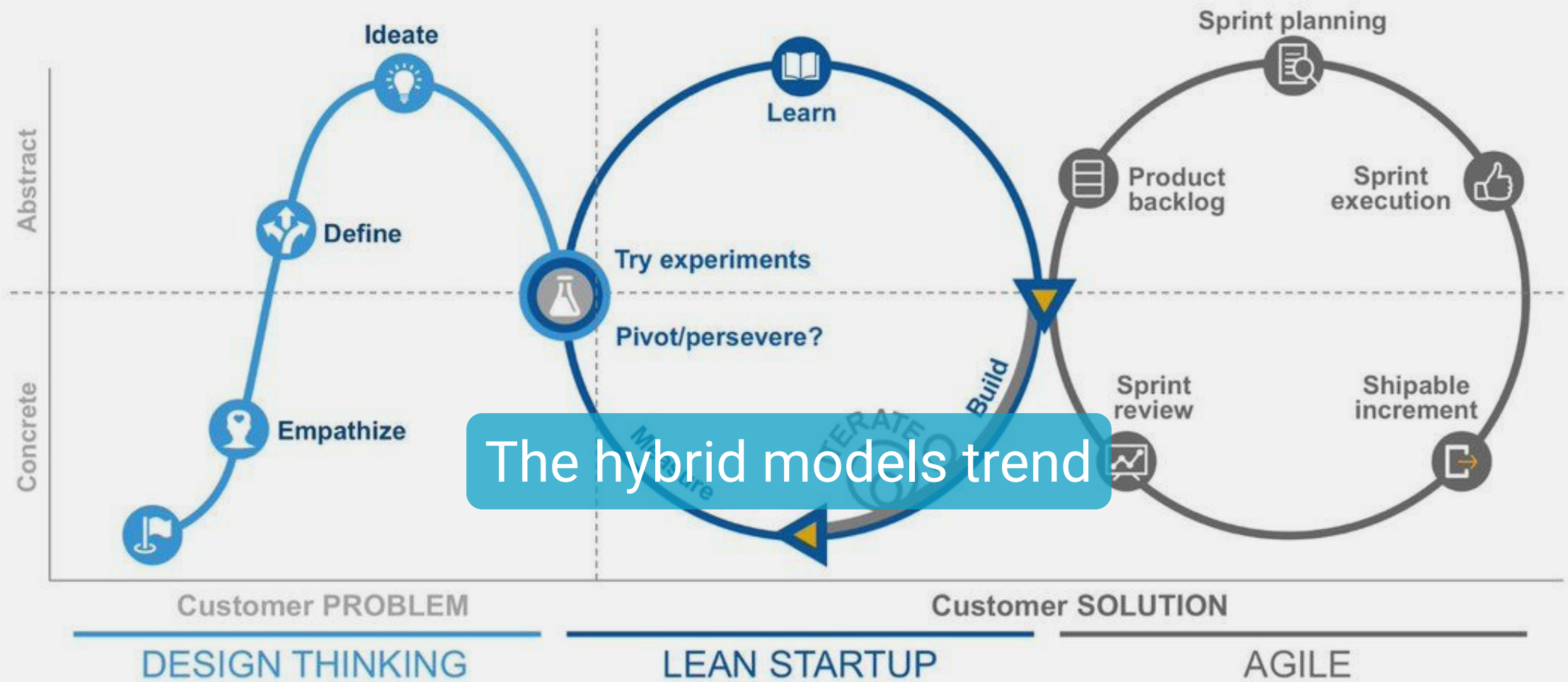
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*Cooper and Sommer (2016)*



*Cooper and Sommer (2018)*



*Gartner (2016)*

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Our research considers the **Stage-Gate** (*Cooper 1990*) process as the leading NPD model with its hybridization with **design thinking** (*Brown 2008*), **Lean Startup** (*Ries 2011*), and **Agile** (*Beck et al. 2001*).

We conducted a single case study (*Eisenhardt 1989*) of a **global manufacturer** leader in the food and beverage industry.

# How the company implements the 4 NPD approaches

1



2



3



4

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INNOVATION RESEARCH  
INTERCHANGE  
*Accelerating Value Creation*



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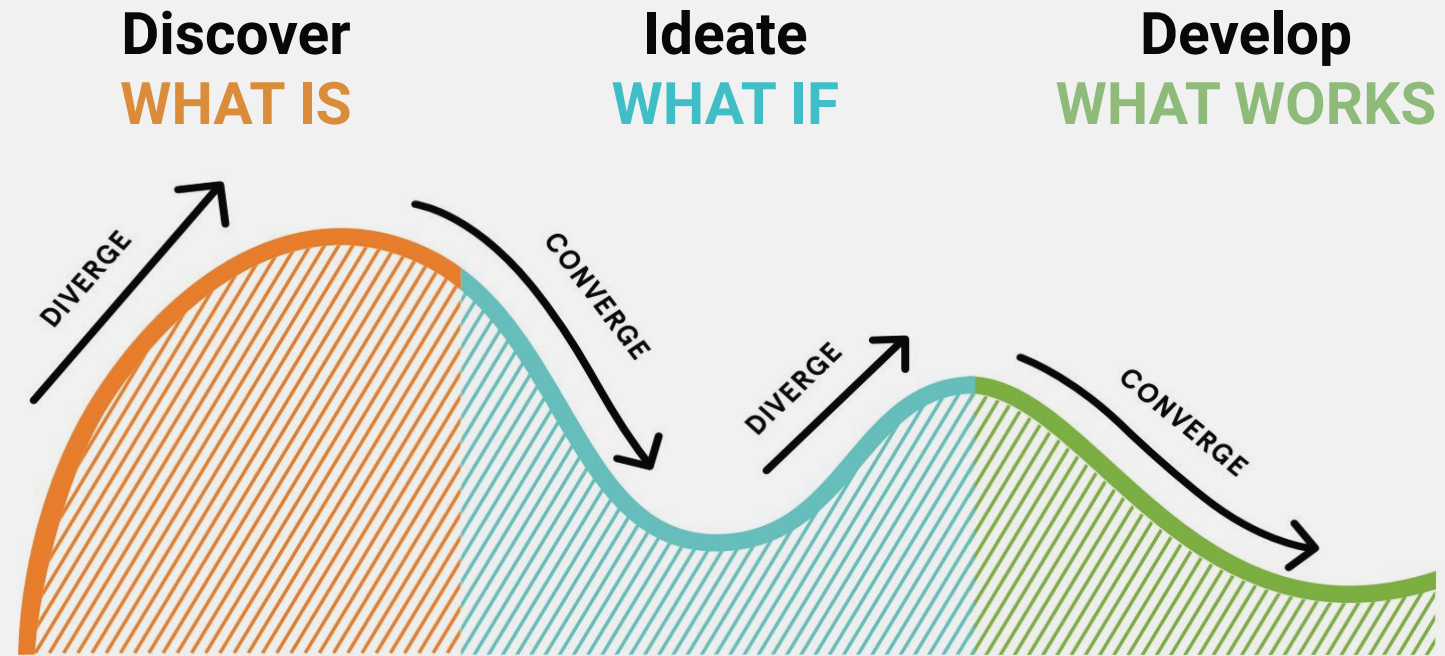
# Stage-Gate



*Cooper (1990)*

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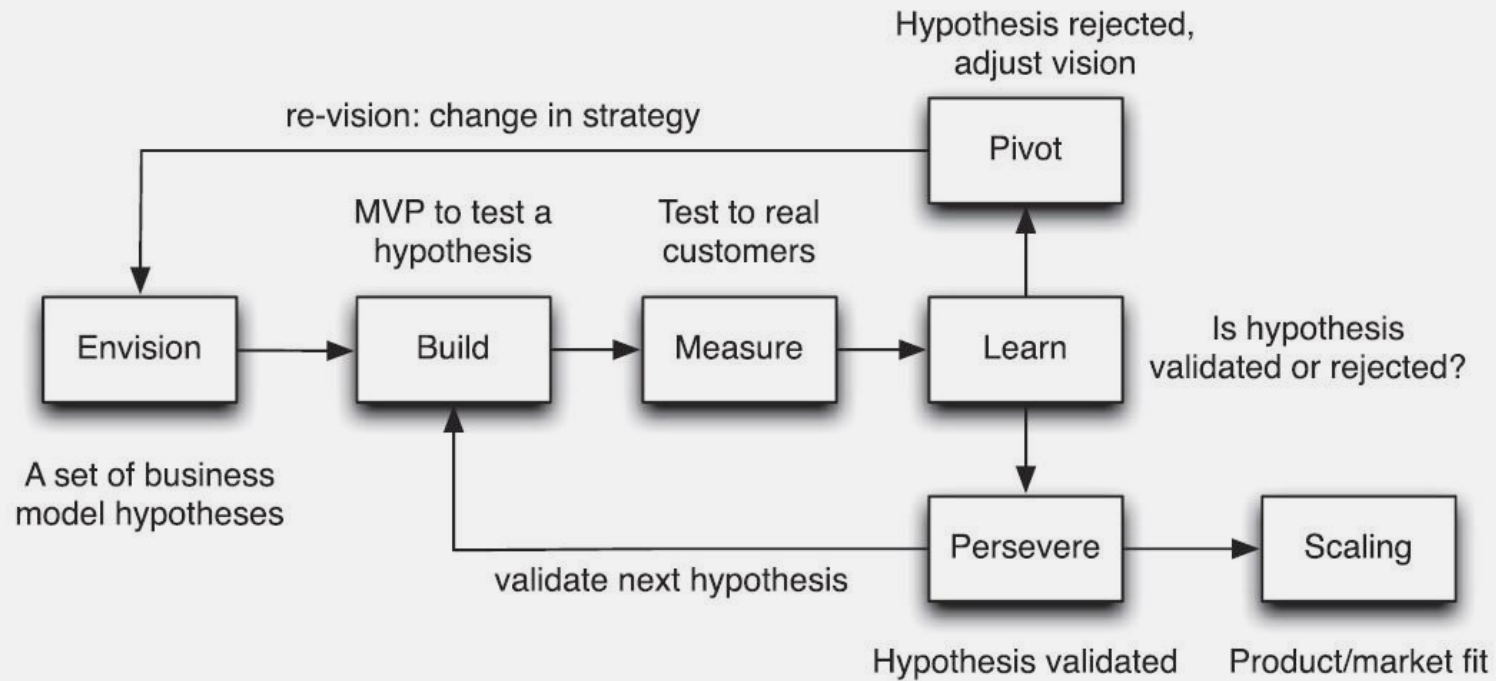
# Design Thinking



*Brown (2008)*

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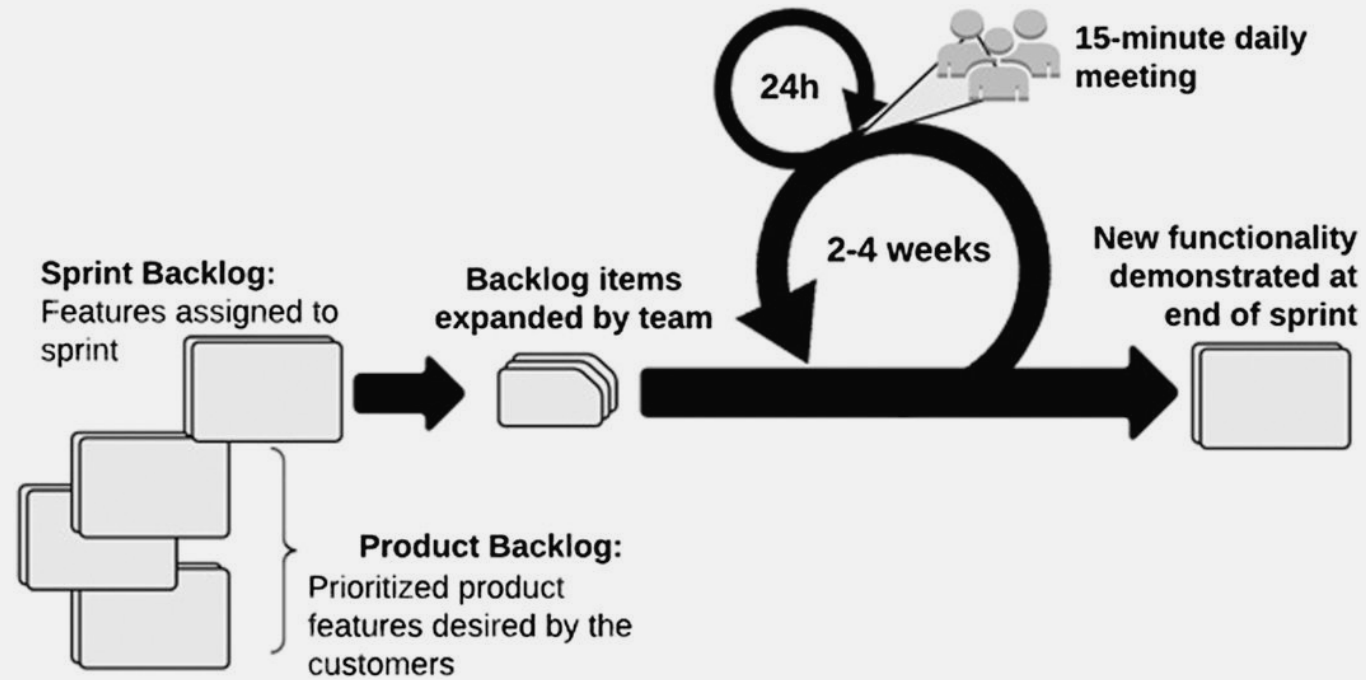
# Lean Startup



*Edison et al. (2018)*

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# Agile



*Sommer et al. (2015)*

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# COEXISTENCE OF 4 APPROACHES WITHOUT GUIDELINES TO CHOOSE AMONG THEM

The case study company has no formal structure to support management decision-making to understanding when, for a given project, it makes sense to activate one methodology over another.

# Question #1 - Voting code: 3585 7939



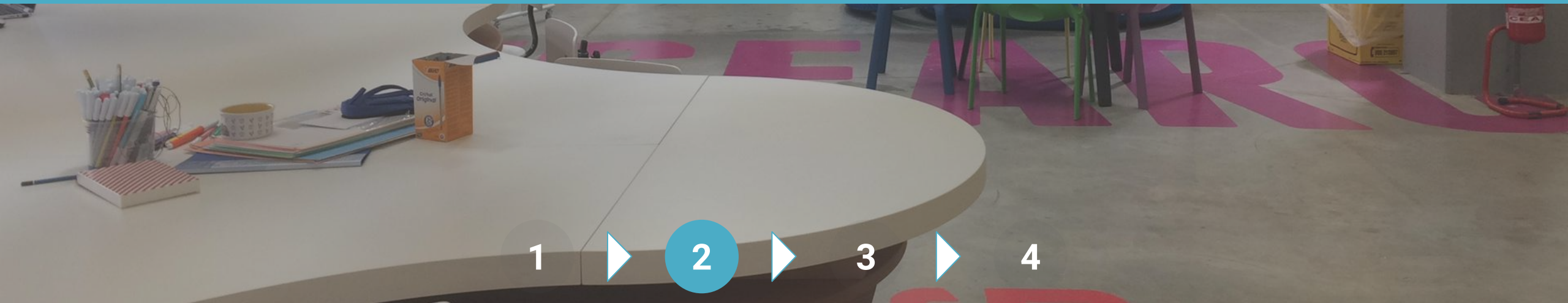
<https://www.menti.com/tghvc41k9f>

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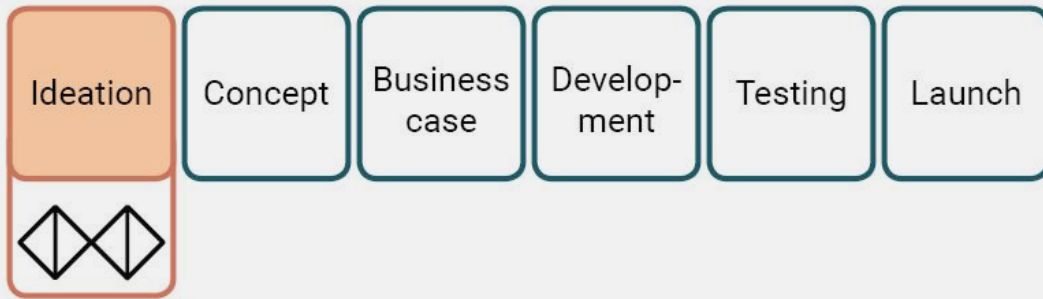


# Hybrid models



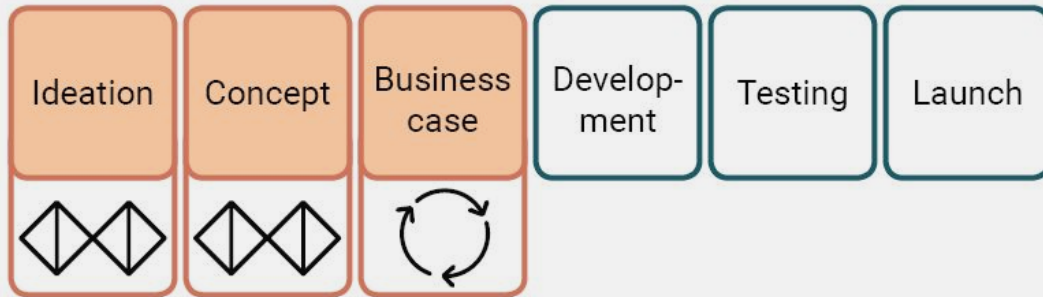
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# Design thinking/Stage-Gate



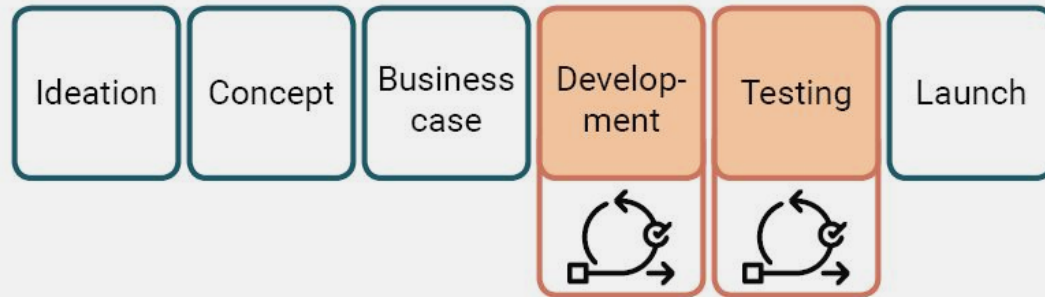
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# Design thinking and Lean Startup/Stage-Gate



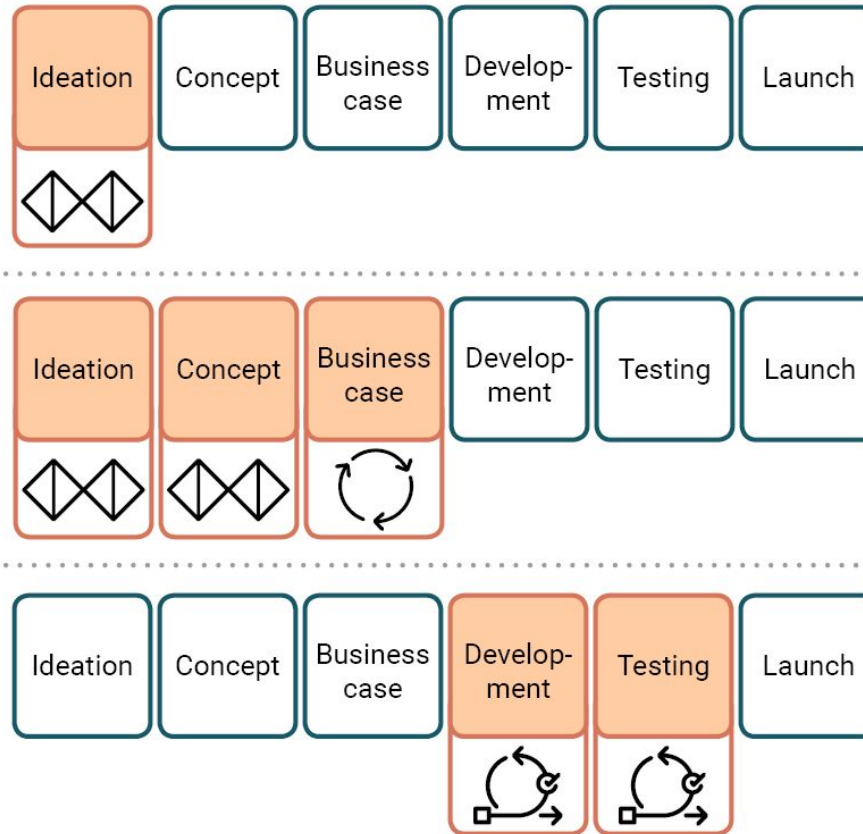
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# Agile/Stage-Gate



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# 3 HYBRID MODELS



# Question #2 - Voting code: 3330 3386



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# Does the company properly activate the hybrid models?



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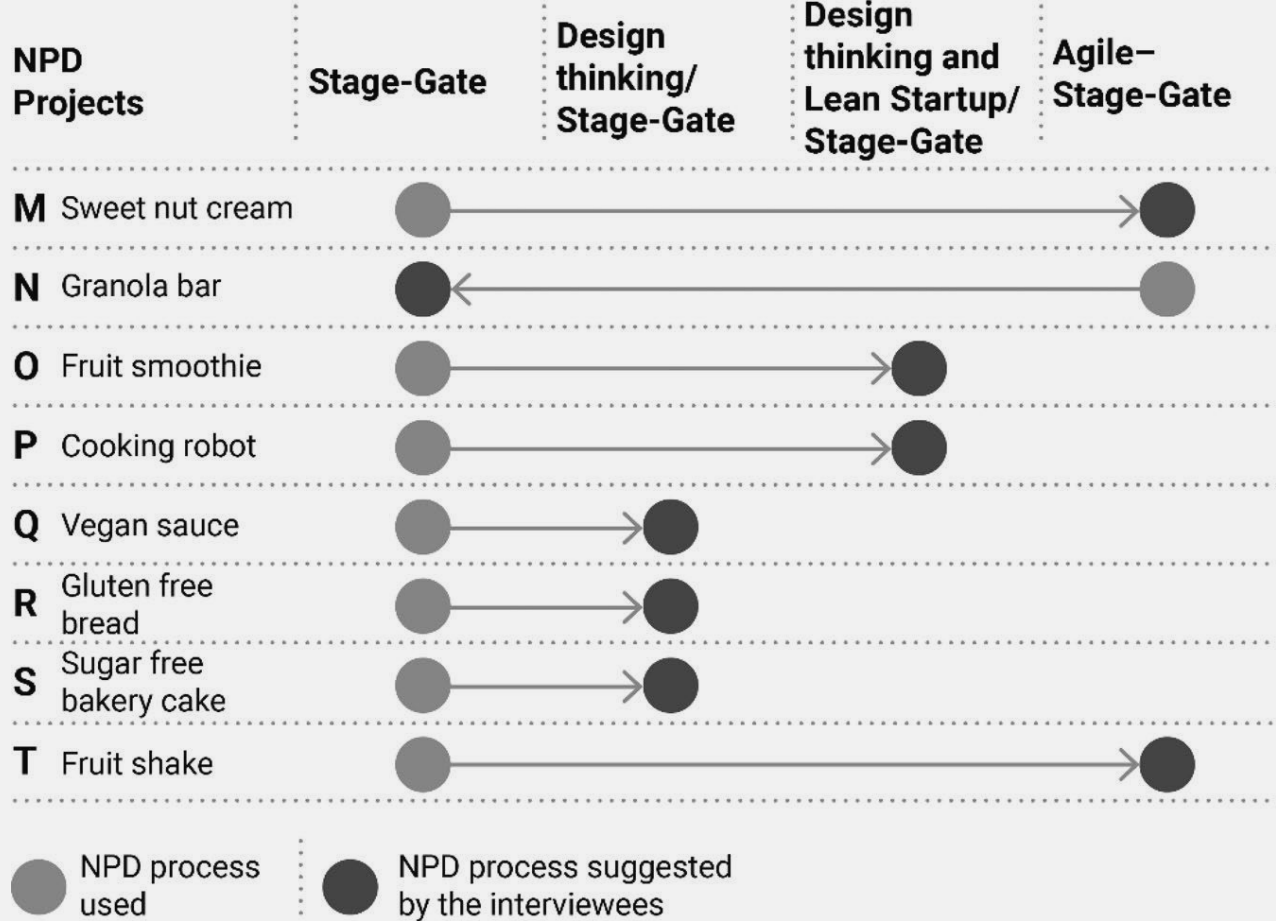
NPD Projects	Stage-Gate	Design thinking/ Stage-Gate	Design thinking and Lean Startup/ Stage-Gate	Agile- Stage-Gate
A Dark chocolate biscuit	●			
B Chocolate tart	●			
C Chocolate-chip bakery snack	●			
D Apricot bakery snack	●			
E Cocoa bakery snack	●			
F Butter cookie	●			
G Biscuits with dried fruit		●		
H Chocolate biscuit		●		
I Legumes main course dish			●	
J Legumes snack			●	
K Fruit jam			●	
L Healthy snack			●	

**YES**

**12/20 [projects]**

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**NO**

**8/20 [projects]**

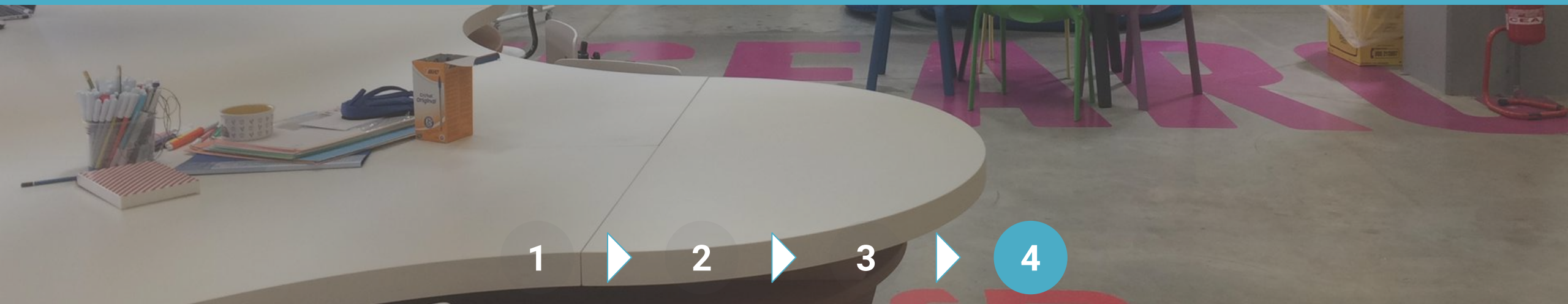
# MISALIGNMENT BETWEEN NPD PROCESSES USED AND SUGGESTED BY THE INTERVIEWEES

When asked, our interviewees could not explain what variables drive management to decide which methodology to embed in the Stage-Gate.

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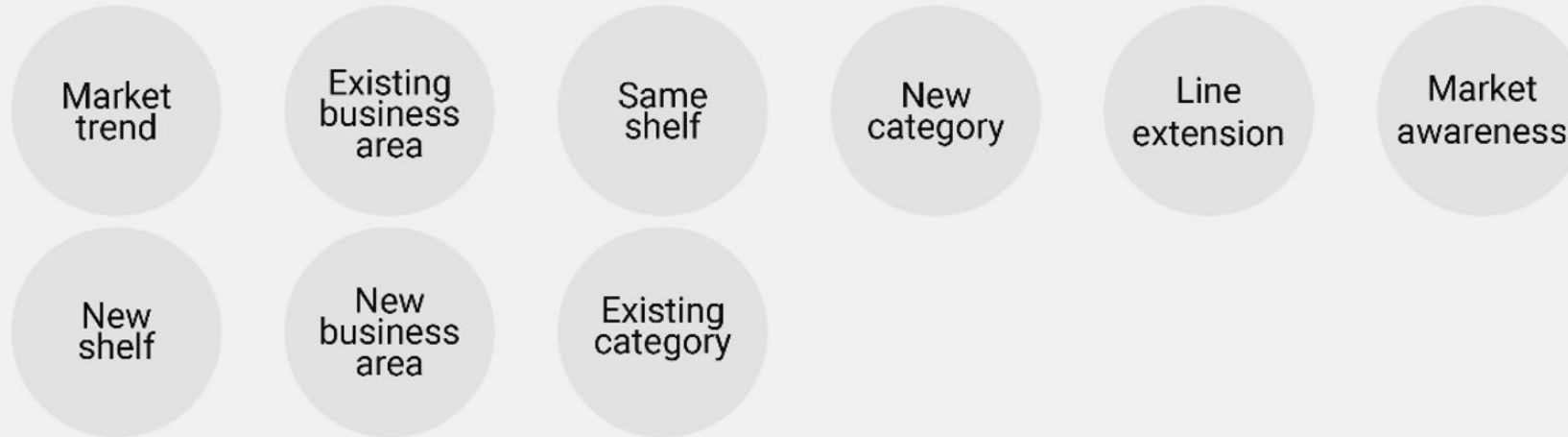


# Decision variables



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## Knowledge about Product Category



## Knowledge about Users



# KNOWLEDGE ABOUT PRODUCT CATEGORY AND ABOUT USERS EMERGED AS CRUCIAL DISCRIMINANT VARIABLES TO IDENTIFY THE PROPER NPD METHODOLOGIES THAT HYBRIDIZE THE STAGE-GATE

According to our interviewees, financial and technological variables are not variables that should drive the ex-ante selection of the NPD methodology.



# The Hybrid Model Matrix



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**Knowledge about Product Category**

New category

Existing category



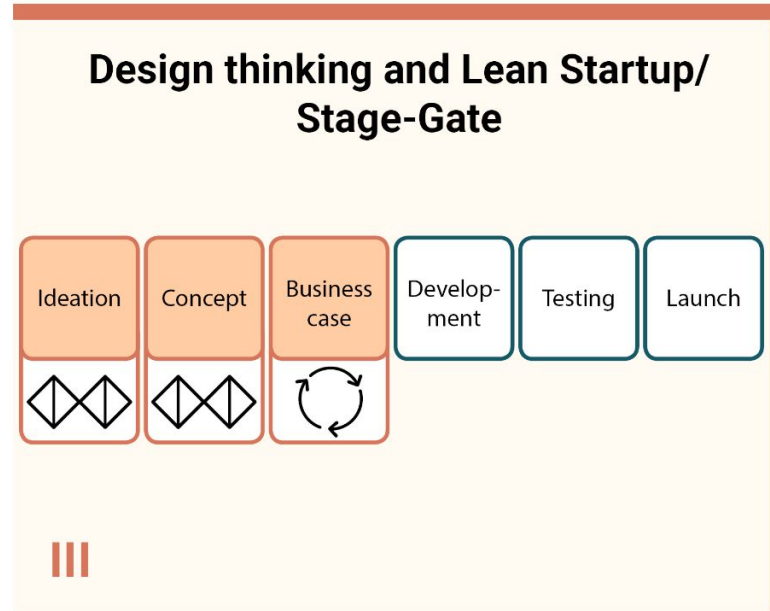
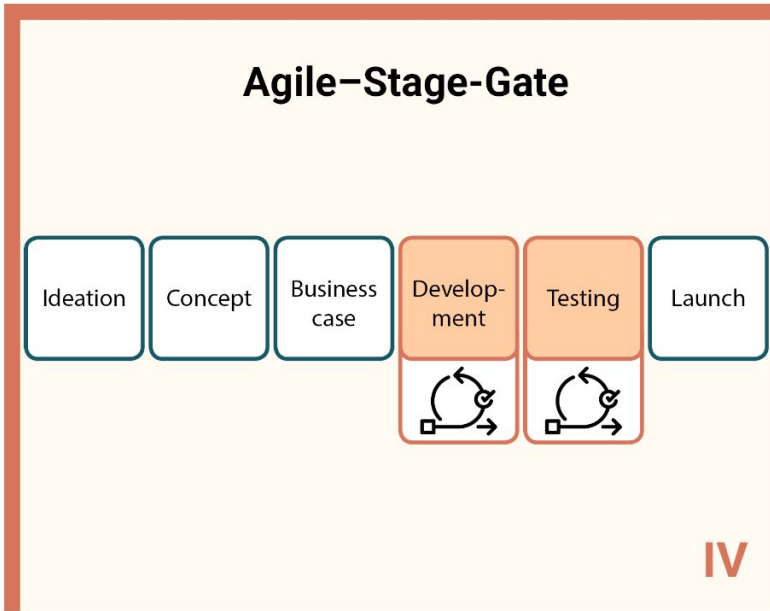
Wide

Limited

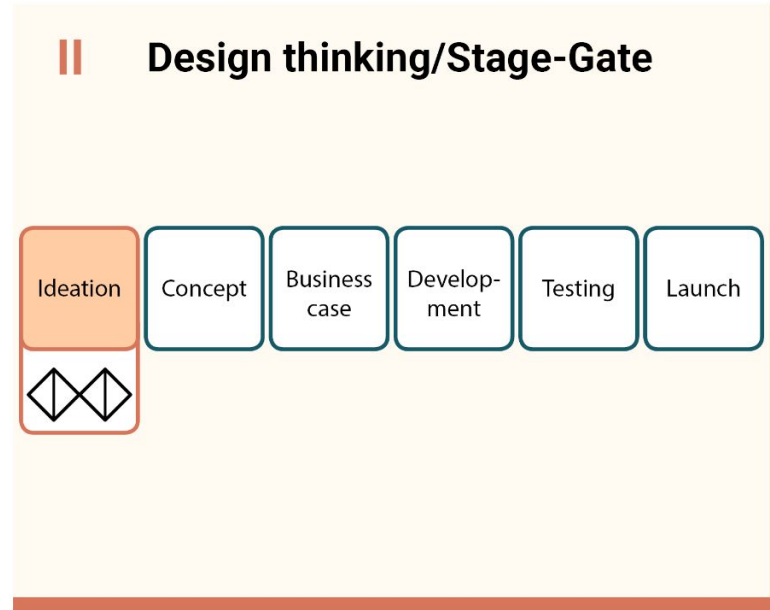
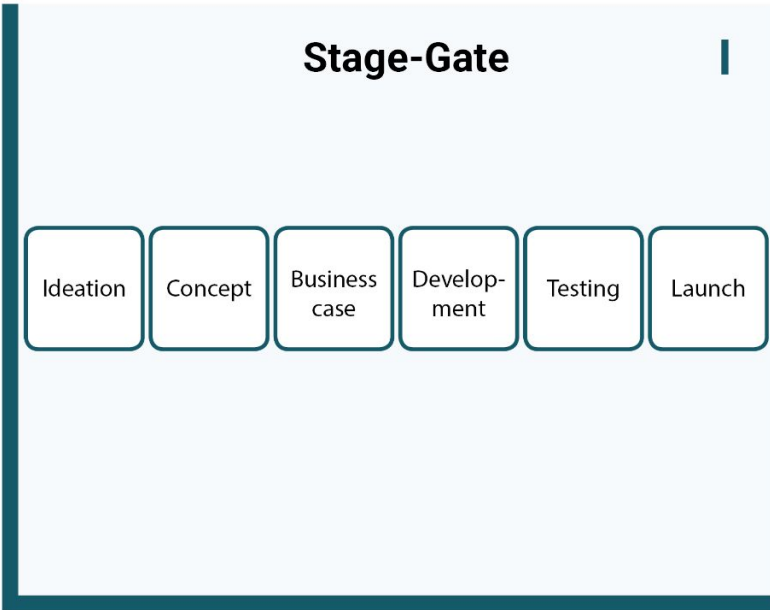
**Knowledge about Users**

**Knowledge about Product Category**

New category



Existing category



Wide

Limited

**Knowledge about Users**



**The Hybrid Model Matrix**  
**supports decision-making and learning,**  
**helps with evaluating users and category knowledge,**  
**and facilitates contingent applications of methodologies.**

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# Question #3 - Voting code: 31 73 38 3



<https://www.menti.com/bg9be1fh8f>

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# Thank You!

Research-Technology Management 64 (5): 18-30.

<https://www.tandfonline.com/doi/full/10.1080/08956308.2021.1942645>

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