

**European Facility on Molten SALT technologies TO power and energy
system applications**

GA Number: 101079303

European Research Executive Agency REA.C3



Funded by
the European Union

SALTOpower



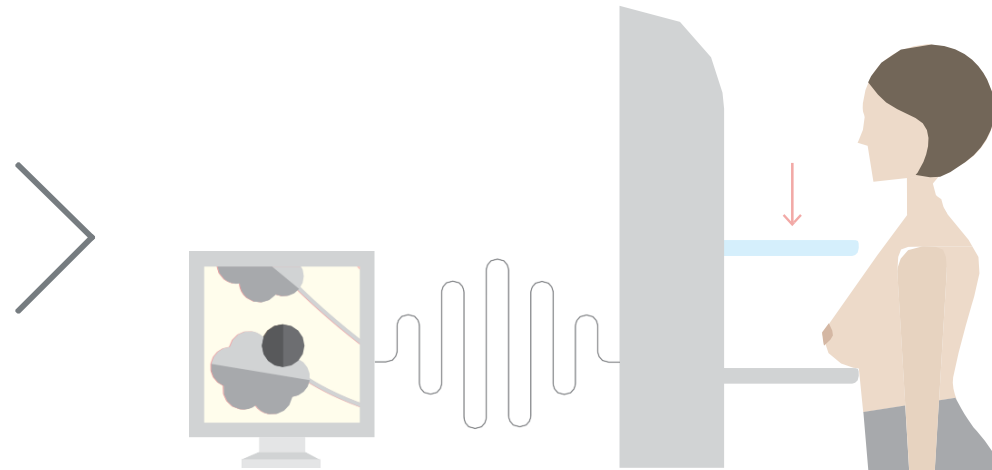
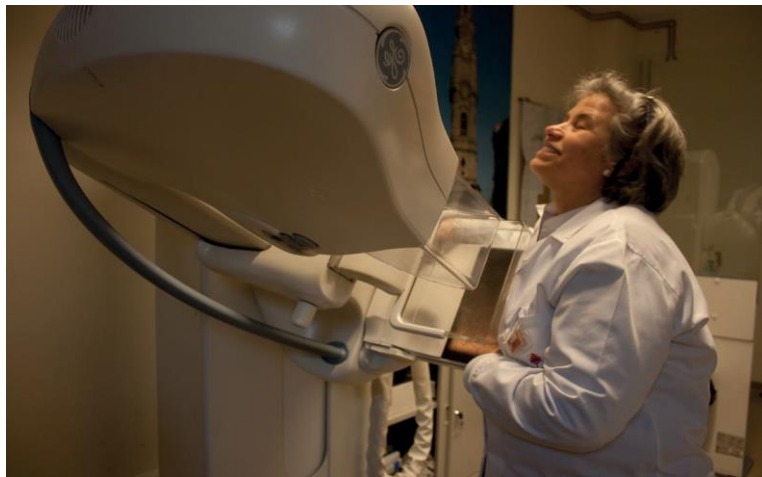
Fast-Track School #3



Some of my background

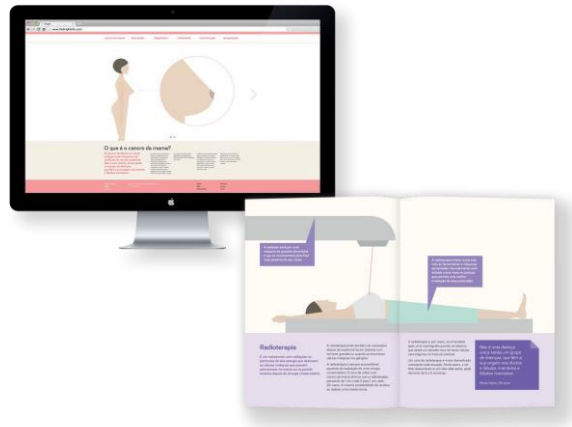
- Biology Degree (FCUP)
- Communication Sciences Degree (FLUP)
- Oncology Master's Degree (IPO Porto)
- Health Education Master's Degree (ISPUP)
- Digital Media in Healthcare PhD (UT Austin | Portugal)

Infographics and Health: Breast Cancer

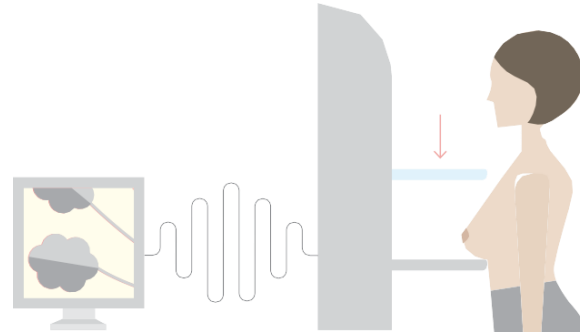


Concebemos **soluções creativas** baseadas
em **infografias**, com o objectivo de **comunicar**
informação credível e eficiente em **saúde**.

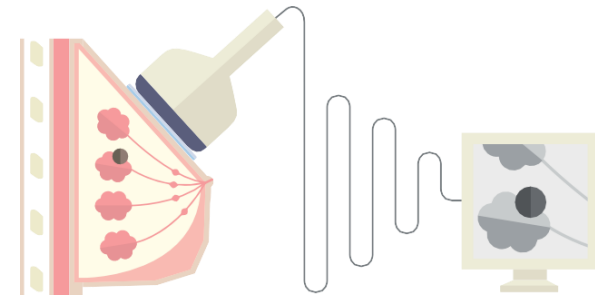
Guia



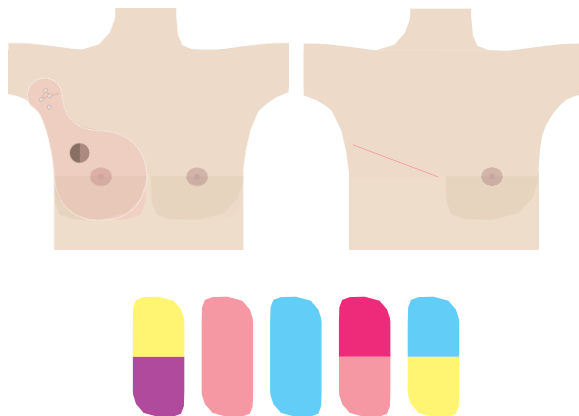
Prevenção



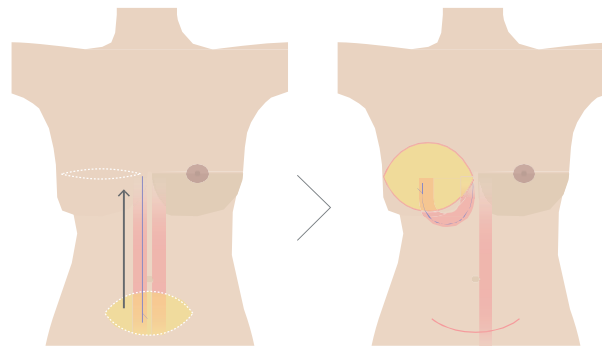
Diagnóstico



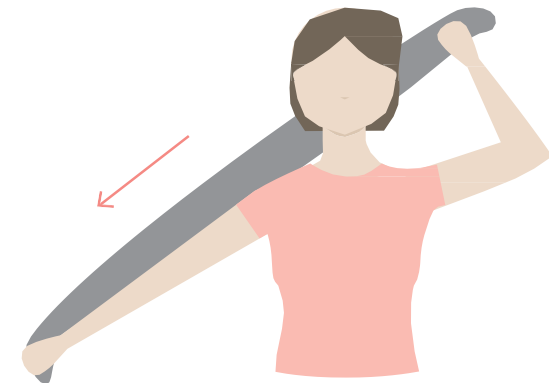
Tratamento



Reconstrução



Recuperação



The background of the image is an abstract pattern of numerous thin, diagonal lines. These lines are primarily in shades of blue, ranging from a deep navy to a lighter, almost white blue. The lines are oriented diagonally, running from the top-left towards the bottom-right. They vary in length and thickness, creating a sense of depth and movement. The overall effect is reminiscent of a starry night sky or a close-up of a textured surface like fabric or paper.

BRIGHT

MIGUEL - 8 YEARS OLD IN HOSPITAL FOR THE LAST 4 MONTHS



- High anxiety
- Low physical activity
- Low body response to treatments

- Exergaming Technology

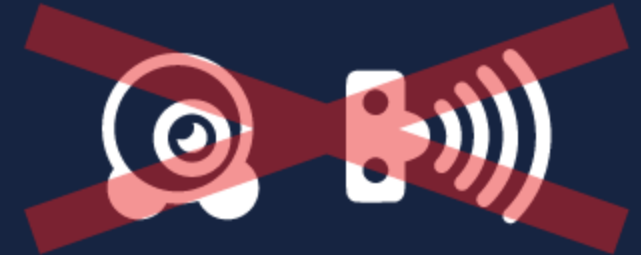
Algorithm-based
technology
transforms the 2D
camera

The 2D camera
detects 3D bodies

Physical Exercise
regulated by
Machine Learning



NO hardware
sensors



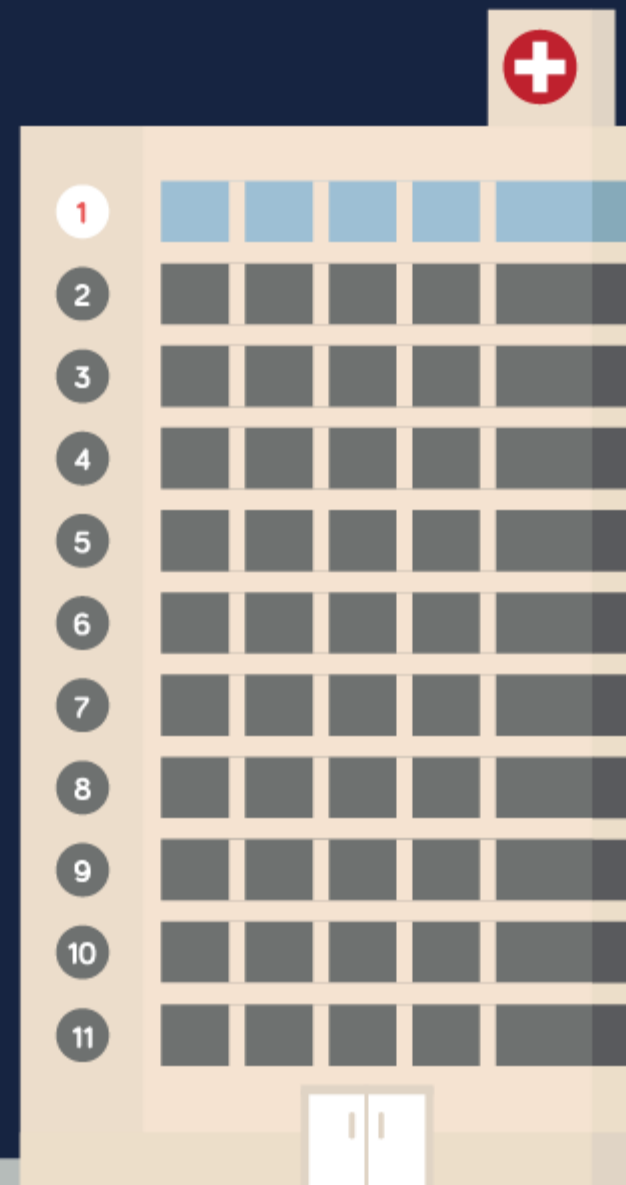
The physical exercises recommended by physiotherapists
are included in videogame challenges.





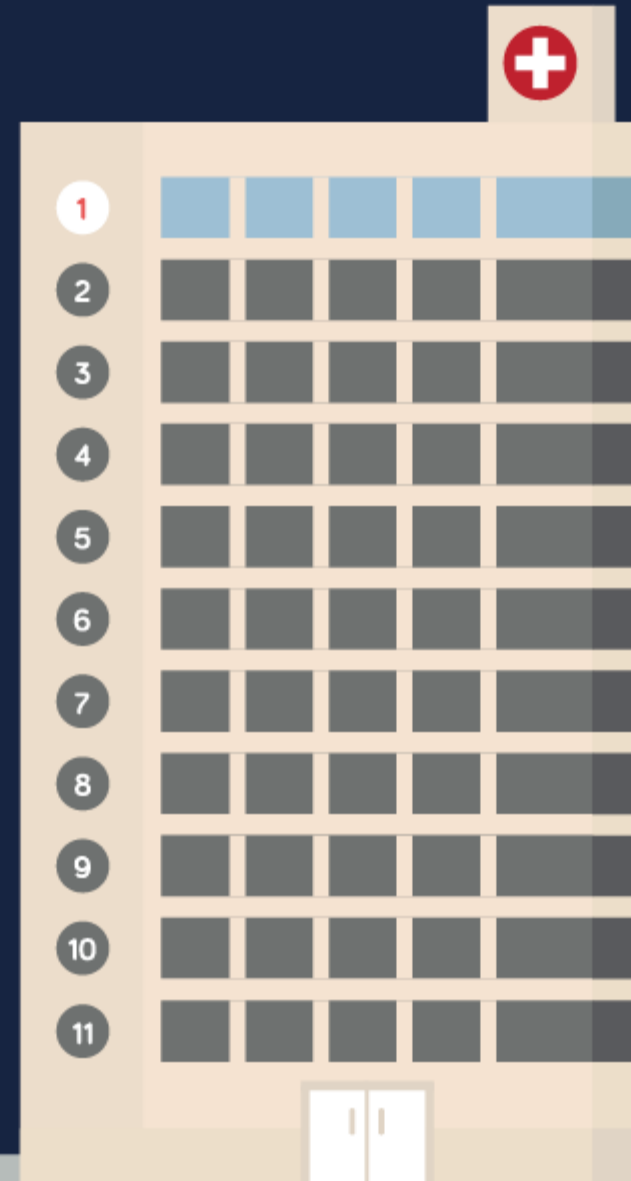
BRIGHT

- Hospital Challenges: Blood Collection



BRIGHT

- Hospital Challenges: Chemotherapy



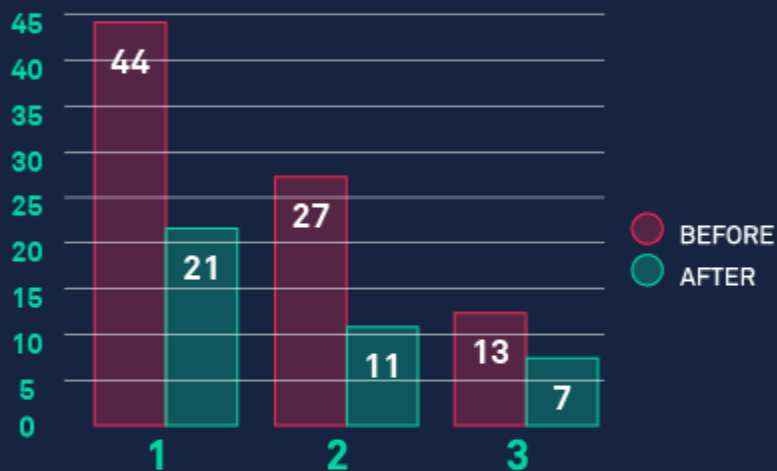
• First Clinical Trial Results

Anxiety crisis reduction

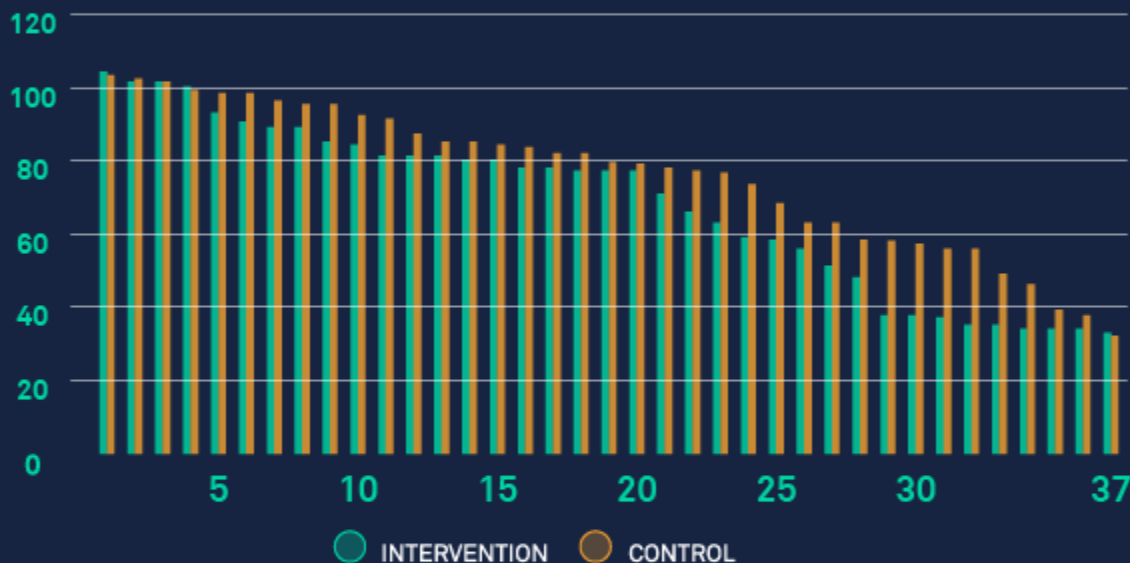
1- Number of pain complaints during blood collections

2- Number of panic attacks and crying episodes during chemotherapy

3- Number of panic attacks and crying episodes during hospitalization



Length of hospital stay



96% were more motivated to continue the treatment **after playing**

- Less 9% of hospitalized days
- An average of less 2,000 euros per stay

PLAY THE ODDS



Development of a game-based
communication tool to help parents
and children facing hereditary cancer risk

DOMÍNIOS DE ATUAÇÃO

1



Self-awareness

2



Parental Dyad

3



Patient-Professional
Communication

4



Parent-Child
Communication

A FORMAÇÃO DE 4 GRUPOS DE CO-CRIAÇÃO MULTIDISCIPLINARES

Especialistas de Aconselhamento Genético

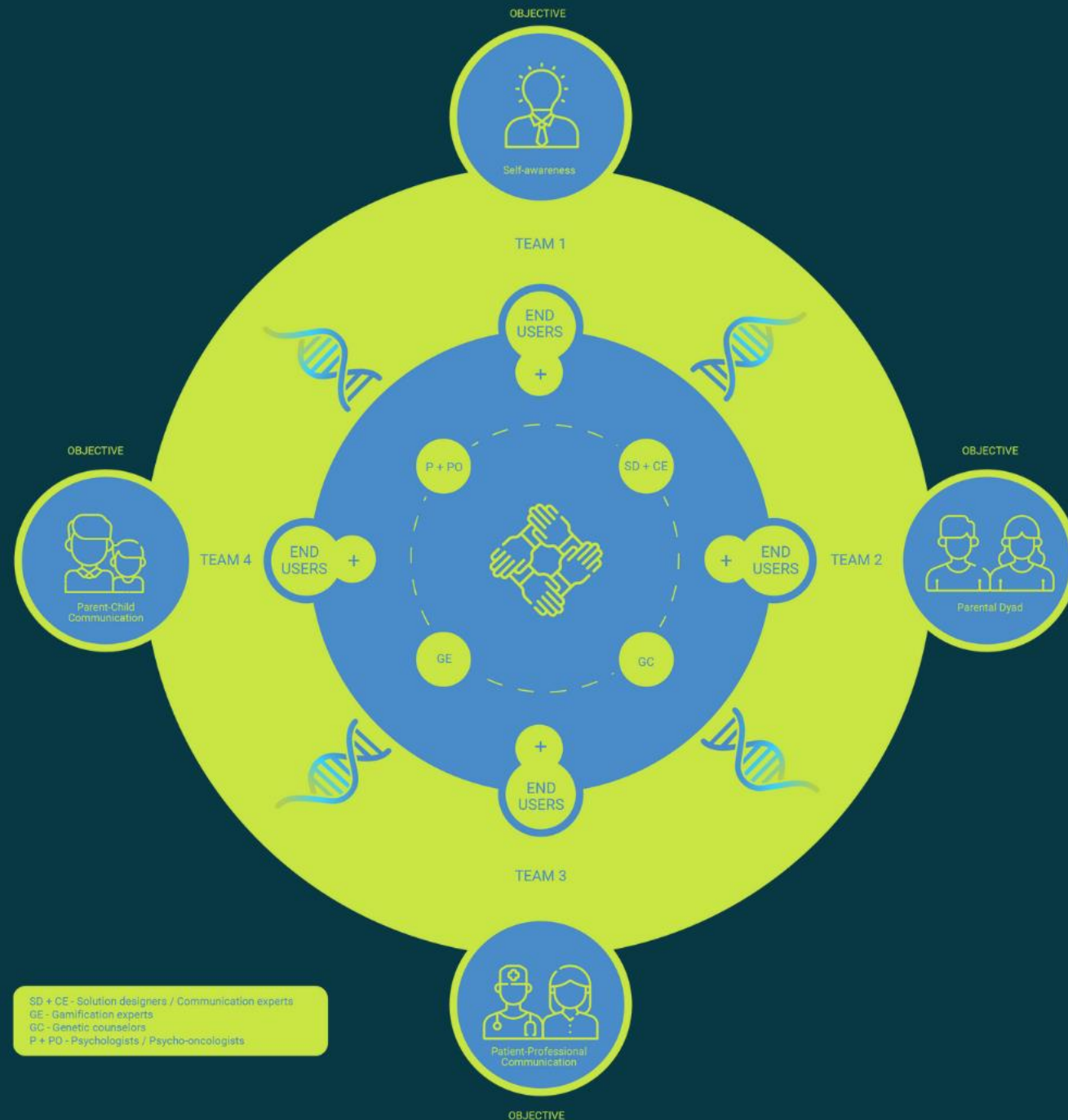
Psicólogos

Especialistas em Gamificação

Designers de Comunicação

+

Famílias e pessoas portadoras de síndromes genéticas, educadores e membros da sociedade civil







IDENTIFICATION OF NEEDS RELATED TO THE MUNICIPALITY AND DEVELOPMENT OF AN ADOLESCENT EMPOWERMENT STRATEGY

OUR MAIN GOALS

Create a MANIFESTO, having the school's teenagers as disseminators of a message to other schools.

COLLABORATION

Bring communication and public health professionals together with adolescents.

IDEATION

Think of formats and content that can promote behavioral change

INTEGRATION

Integrate this content into the journalist's routine

DISSEMINATION

Promote mass dissemination of content



RECRUITMENT OF RELEVANT STAKEHOLDERS TO IMPLEMENT THE STRATEGY = MULTIDISCIPLINARY KNOWLEDGE

1 PUBLIC HEALTH
SPECIALIST

1 COMMUNICATION
SPECIALIST

1 CIVIL PROTECTION
MEMBER

63 HIGH SCHOOL
STUDENTS



IMPLEMENTATION OF A CO-CREATION PROGRAM FOR THE PRODUCTION OF PERSUASIVE MATERIALS

**BRAINSTORMING
SESSIONS**

**KEY
MESSAGES**

**COMMUNICATION
MATERIALS**

NARRATIVE

**PERSUASION
TRIGGERS**

**DECISION MAKING
PROCESS**

**STUDENTS IN
ASSEMBLY**

**USE OF ONLINE
VOTING
SOFTWARE**

**ACCEPTANCE
> 75%**



IMPLEMENTATION OF A CO-CREATION PROGRAM FOR THE PRODUCTION OF PERSUASIVE MATERIALS

SHORT MOVIE (79,4%)

ANIMATED (82,5%)

NON-ANIMATED (17,5%)

INFLUENCER / MEDIA
PERSONALITY (84,1%)

SOCIAL NETWORKS (77,8%)

KEY MESSAGES

Danger of crowds at school gates (96,8%)
Promote the importance of preventive measures
in leisure activities (88,9%)
How to act with other colleagues during breaks (82,5%)
Not sharing food and objects with colleagues (76,2%)
Knowing how to put on the face mask correctly (76,2%)

COMMUNICATION MATERIALS

NARRATIVE

TONE

HUMOROUS (34,9%)

REGRETFUL (4,8%)

NOSTALGIC (55,2%)

PESSIMISTIC (3,1%)

PERSUASION TRIGGERS

EVERY DAY COUNTS

A SHORT MOVIE ABOUT THE
IMPORTANCE TO LOOK LIFE AS
A BIG OPPORTUNITY



- Gustavo, a 15-year-old boy, knows what it's like to miss someone.
- In the midst of a pandemic, Gustavo complies with the rules, because he knows that any rule is less harsh than the pain of losing someone.
- Most of the informative elements of the short movie are given by Gustavo's social networks.

EVERY DAY COUNTS

A SHORT MOVIE ABOUT THE
IMPORTANCE TO LOOK LIFE AS
A BIG OPPORTUNITY



- One of the main radio stations in Portugal has partnered with our project.
- The station director, Pedro Ribeiro, has a morning show that is accompanied by some teenagers on their way to school.
- Pedro Ribeiro was the narrator of Gustavo's story.



SCHOOL AND EMPOWERMENT

ENCOURAGING BEHAVIOUR
CHANGE WITH PARTICIPATORY
ACTIVITIES

A CITY AS A LIVING LAB

OUTDOORS WITH THE FIGURE
OF THE MAIN CHARACTER WERE
PRINTED



Left
brain

I am the left brain.
I am a scientist. A mathematician.
I love the familiar. I categorize. I am accurate. Linear.
Analytical. Strategic. I am practical.
Always in control. A master of words and language.
Realistic. I calculate equations and play with numbers.
I am order. I am logic.
I know exactly who I am.

Right brain

I am the right brain.
I am creativity. A free spirit. I am passion.
Yearning. Sensuality. I am the sound of roaring laughter.
I am taste. The feeling of sand beneath bare feet.
I am movement. Vivid colors.
I am the urge to paint on an empty canvas.
I am boundless imagination. Art. Poetry. I sense. I feel.
I am everything I wanted to be.

Left brain

I am the left brain.
I am a scientist. A mathematician.
I love the familiar. I categorize. I am accurate. Linear.
Analytical. Strategic. I am practical.
Always in control. A master of words and language.
Realistic. I calculate equations and play with numbers.
I am order. I am logic.
I know exactly who I am.

Slow System (2)

Considered
Effortful
Focused
Secondary
Lazy

Right brain

I am the right brain.
I am creativity. A free spirit. I am passion.
Yearning. Sensuality. I am the sound of roaring laughter.
I am taste. The feeling of sand beneath bare feet.
I am movement. Vivid colors.
I am the urge to paint on an empty canvas.
I am boundless imagination. Art. Poetry. I sense. I feel.
I am everything I wanted to be.

Fast System (1)

Automatic
Intuitive
Instinctive
Primary
Rapid
Blind

THINKING PROCESS

Kahneman proposes that evolution has given us two systems for decision making:

System 1 is permanently connected to our senses and operates automatically, intuitively evaluating the environment, using rules of approximation and associations that allow for rapid decision-making with little or no conscious effort;

Daniel Kahneman,
Behavioural economist



THINKING PROCESS

Kahneman proposes that evolution has given us two systems for decision making:

System 2, which comes into play for more complex decision making, is more orderly and requires effort to calculate and formalize judgments in a dialogue with **System 1** (which is more likely to jump to conclusions).

Following a process of deliberation, System 2 is able to verbalize the result.

Daniel Kahneman,
Behavioural economist



THINKING PROCESS and MARKETING

We easily identify ourselves with System 2 and rational (and slow) decision making.

However, it is primarily System 1, that of intuition and (rapid) emotion that governs our choices, often despite ourselves.

If marketing is to facilitate choice, it needs to understand the weighting that comes into play between System 1 and System 2 in the consumer's choice-making process



Behaviours are determined by implicit forces

These multiple sources of influence find their origins in 5 fundamental forces:

1. We make our decisions mainly from intuition.
2. Our decisions are affected by mental shortcuts and biases.
3. We are emotional creatures.
4. We are social creatures.
5. Our decisions are affected by the choice environment.



Automatic Decision Processes



Amsterdam Schiphol Airport, 2009

- Small stickers with the image of a fly.
- Reduction of urinary contamination / spillage by 80%.



Definition:

TO NUDGE IS TO
“ALERT, REMIND OR
MILDLY WARN”

Definition:

A nudge must:

1. Intervene in **choice architecture**
behavior in a predictable way
2. Alter people's **behaviour**
3. **Without forbidding any options or significantly**
changing their economic incentives.

Definition:

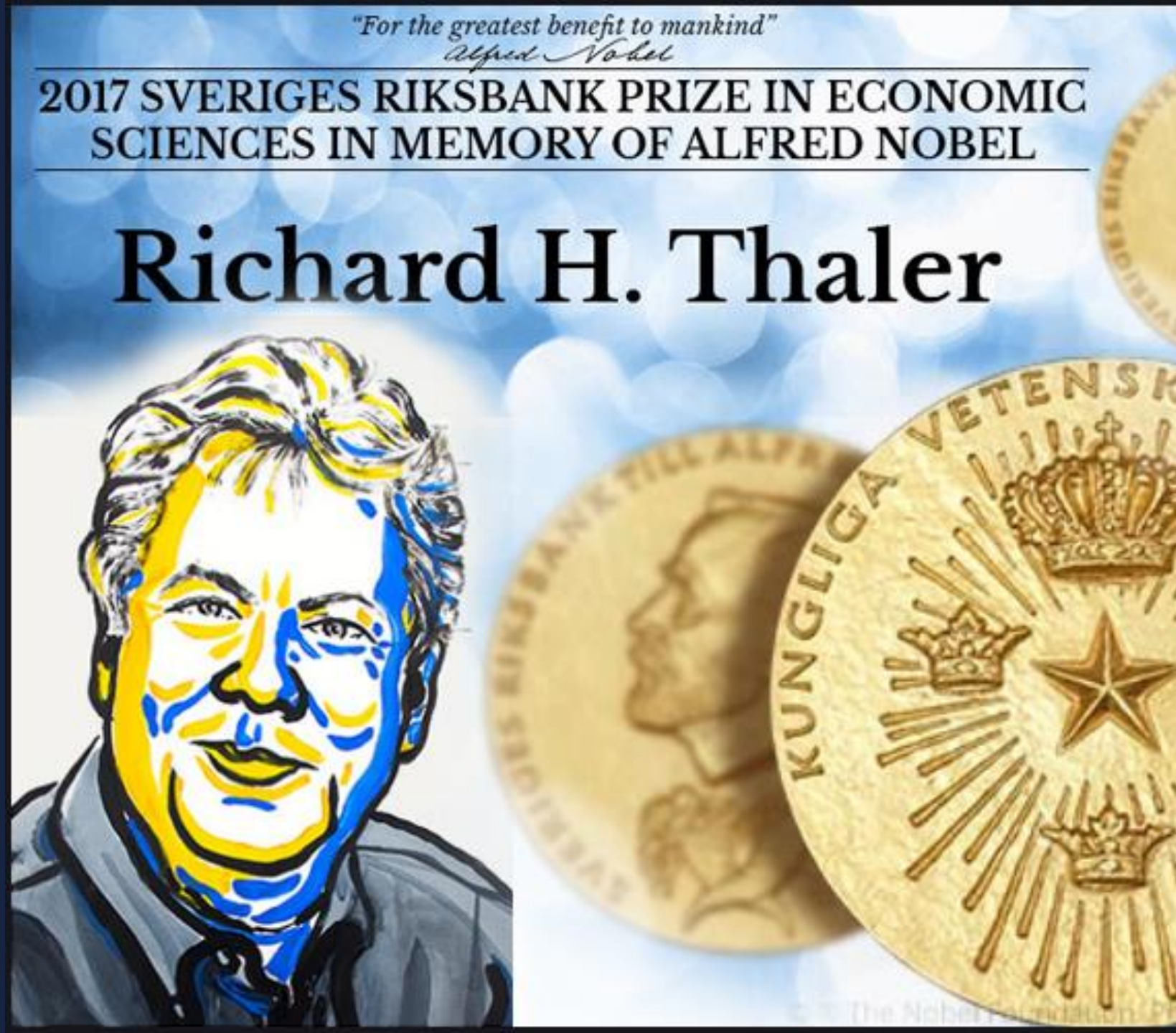
To count as a mere nudge, the intervention must be easy and cheap to avoid. **Nudges are not mandates!**

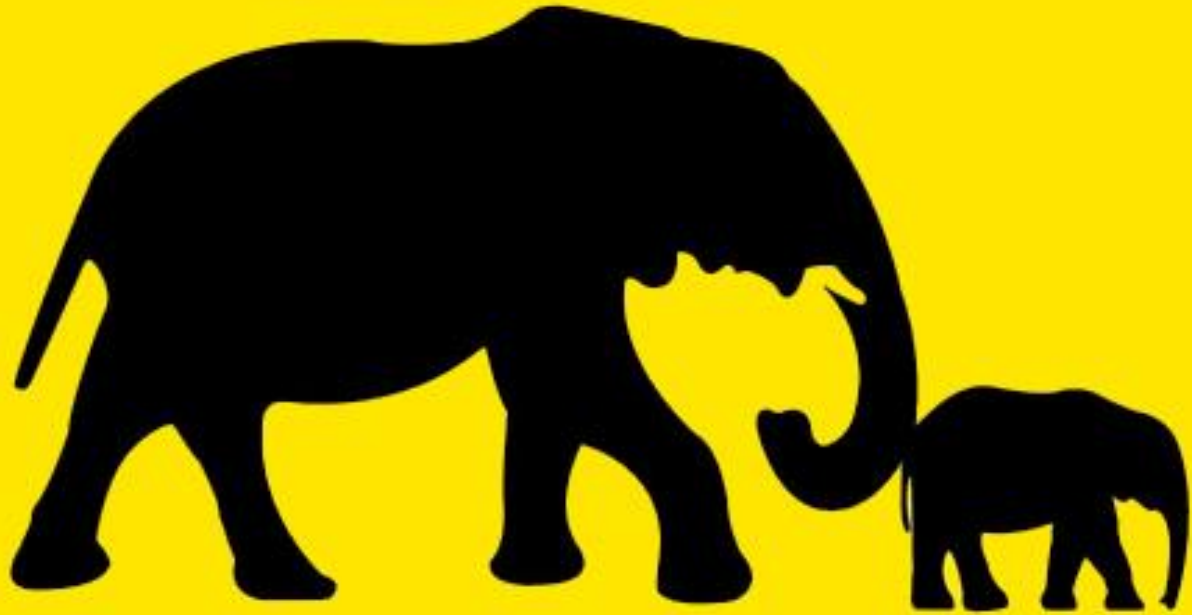
Putting fruit at eye level counts as a nudge.
Banning junk food does not.

Nudge Theory

Behavioral Economics

“the **organization of the context** in which people make decisions, in order to **predictably influence** them through **Science**”





Nudge

Nudge = small push, orientation for people to act rationally in their own interest

“SMALL DETAILS, **LARGE EFFECTS**”

Probably the largest 'real' optical illusion in the world is the St Louis arch above.



“SMALL DETAILS, **LARGE EFFECTS**”

Contrary to (very persistent perception) the arch is exactly as wide as it is tall.

This classic optical illusion is due to **our eyes automatically heightening a shape that points upwards and thins as it rises.**

Horizontal-Vertical Illusion – 18-20% plus



“SMALL DETAILS, LARGE EFFECTS”

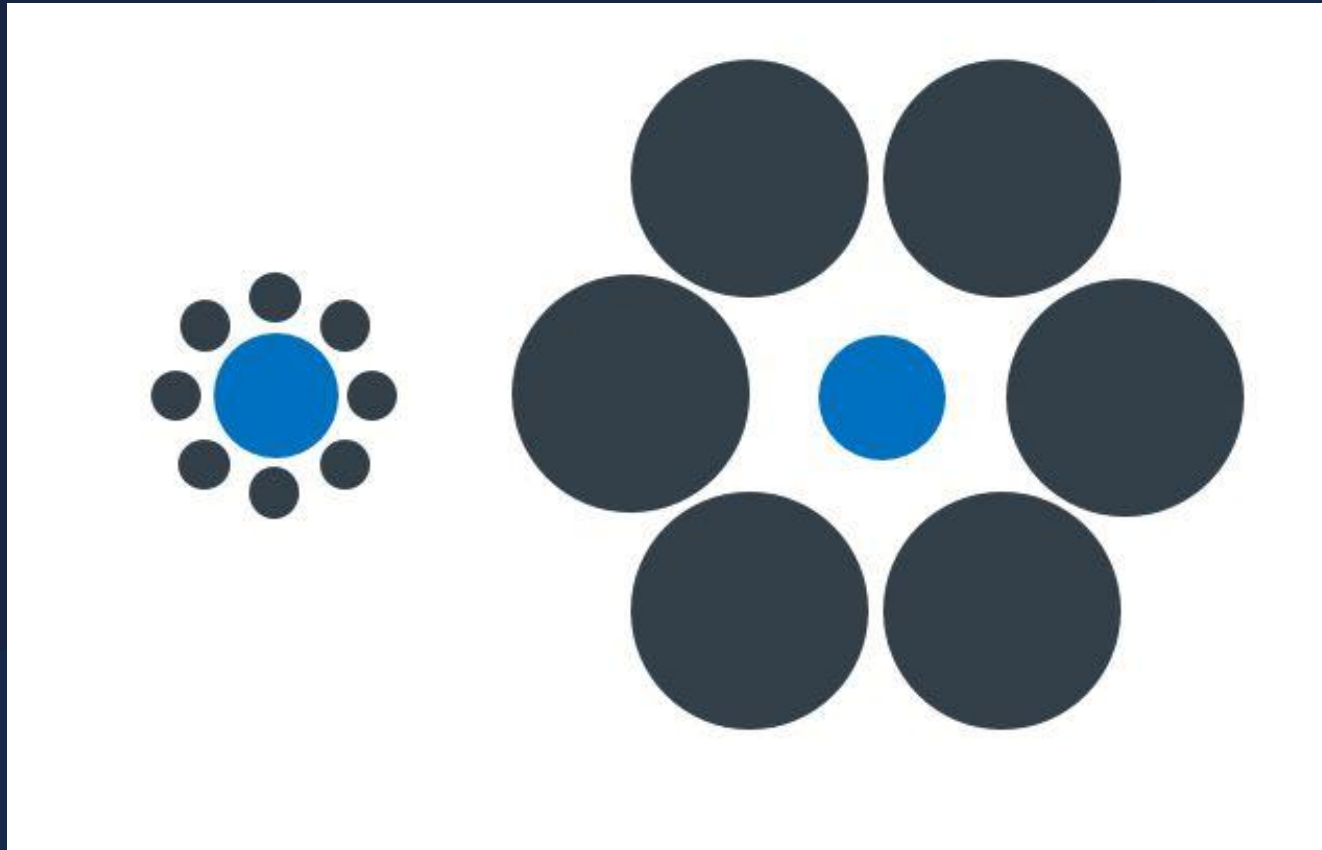


“SMALL DETAILS, LARGE EFFECTS”



- 30% juice

“SMALL DETAILS, **LARGE EFFECTS**”



“SMALL DETAILS, **LARGE EFFECTS”**



“SMALL DETAILS, **LARGE EFFECTS**”



“SMALL DETAILS, **LARGE EFFECTS**”



“SMALL DETAILS, **LARGE EFFECTS**”

The primacy effect describes the tendency for information that we learn first to be weighted more heavily than is information that we learn later

Intelligent, hardworking, impulsive, critical, stubborn, envious

Envious, stubborn, critical, impulsive, **hardworking, intelligent**

“SMALL DETAILS, LARGE EFFECTS”

The primacy effect describes the tendency for information that we learn first to be weighted more heavily than is information that we learn later

8 x 7 x 6 x 5 x 4 x 3 x 2 x 1 (mean = 2250)

1 x 2 x 3 x 4 x 5 x 6 x 7 x 8 (mean = 540)

“SMALL DETAILS, **LARGE EFFECTS**”

The primacy effect describes the tendency for information that we learn first to be weighted more heavily than is information that we learn later

Asch (1946)

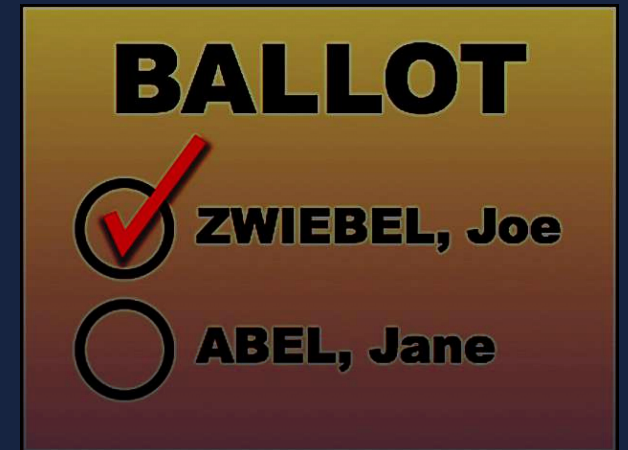
Murdoch (1962)

Glanzer and Cunitz (1966)

“SMALL DETAILS, **LARGE EFFECTS**”

The primacy effect also in Politics

- Study of the 1998 Democratic primary in New York City, in which the order of candidates' names was rotated by precinct.
- In 71 of 79 individual nominating contests, candidates received a greater proportion of the vote when listed first than when listed in any other position.
- In 7 of those 71 contests the advantage to first position exceeded the winner's margin of victory



Joanne M. Miller and Jon A. Krosnick: The Impact of Candidate Name Order on Election Outcomes, *Public Opinion Quarterly* 62(3), Autumn 1998, pp. 291-230

J.G.S. Koppell and J.A. Steen: The Effects of Ballot Position on Election Outcomes, *Journal of Politics* 66(1), February 2004, pp. 267-281.

Thorsten Faas and Harold Schoen: The importance of being first: Effects of candidates' list positions in the 2003 Bavarian state election, *Electoral Studies* 25(1), March 2006, pp. 91-102.

Daniel E. Ho and Kosuke Imai: Randomization Inference with Natural Experiments: An Analysis of Ballot Effects in the 2003 California Recall Election, *Journal of the American Statistical Association* 101(475), 2006, pp. 888-900.

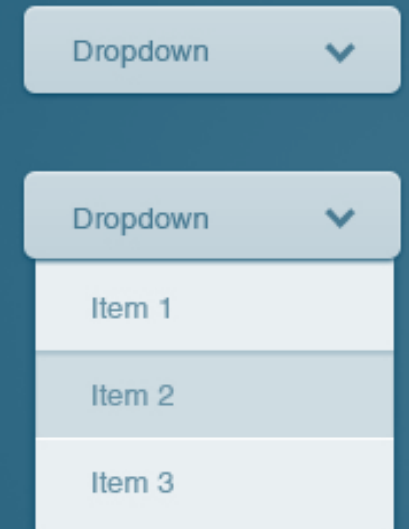
Jon A. Krosnick: In the Voting Booth, Bias Starts at the Top, *The New York Times*, November 4, 2006.

“SMALL DETAILS, **LARGE EFFECTS**”

Drug prescription by physicians

- When doctors select the drug they want to prescribe, they click on a drop down menu.
- Previously, **branded drugs** were listed at the top of that menu and **generics at the bottom**.
- Patel flipped the order – it had an astounding effect. Before the trial, the generics prescribing rate at Penn Medicine was around **75.0%**.
- Immediately after the change in the drop down order, the **generic prescribing rate increased to 98.4%** and remained there for the **10-month test period**

Mitesh S. Patel, Penn Medical School of Innovation



“SMALL DETAILS, **LARGE EFFECTS**”

WE USE HEURISTICS TO TAKE DAILY DECISIONS



Calories Ordered

Healthier	Normal	Big	King	<div></div> 86
Standard	Small	Normal	Big	<div></div> 93
Unhealthy	Mini	Small	Normal	<div></div> 114

Using the word « **normal** » as a reference point is one of our heuristics.

CONVERT BEHAVIOURAL INSIGHTS INTO NUDGES

100 biases

Ambiguity effect
Anchoring
Attentional Bias
Availability heuristic
Availability cascade
Backfire effect
Bandwagon effect
Base rate neglect or Base rate fallacy
Belief bias
Bias blind spot
Choice-supportive bias
Clustering illusion
Confirmation bias
Congruence bias
Conjunction fallacy
Conservatism or Regressive
Conservatism (Bayesian)
Contrast effect
Curse of knowledge
Decoy effect
Denomination effect
Distinction bias
Duration neglect
Empathy
Endowment effect
Essentialism
Exaggerated expectation
Experimenter's or Expectation bias

Functional fixedness
Focusing effect
Framing effect
Frequency illusion
Gambler's fallacy
Hard-easy effect
Hindsight bias
Hostile media effect
Hyperbolic discounting
Illusion of control
Illusion of validity
Illusory correlation
Impact bias
Information bias
Insensitivity to sample size
Irrational escalation
Just-world hypothesis
Knowledge bias
Less-is-better effect
Loss aversion
Mere exposure effect
Money illusion
Moral credential effect
Negativity bias
Neglect of probability
Normalcy bias
Observer-expectancy effect
Omission bias
Optimism bias³

Ostrich effect
Outcome bias
Overconfidence effect
Pareidolia
Pessimism bias
Planning fallacy
Post-purchase rationalization
Pro-innovation bias
Pseudocertainty effect
Reactance
Reactive devaluation
Recency bias
Recency illusion
Restraint bias
Rhyme as reason effect
Selective perception
Simmelweis reflex
Social comparison bias
Social desirability bias
Status quo bias
Stereotyping
Subadditivity effect
Subjective validation
Time-saving bias
Unit bias
Well travelled road effect
Zero-risk bias

CONVERT BEHAVIOURAL INSIGHTS INTO NUDGES

This is a list of 21 Drivers of Influence that impact our behaviour.

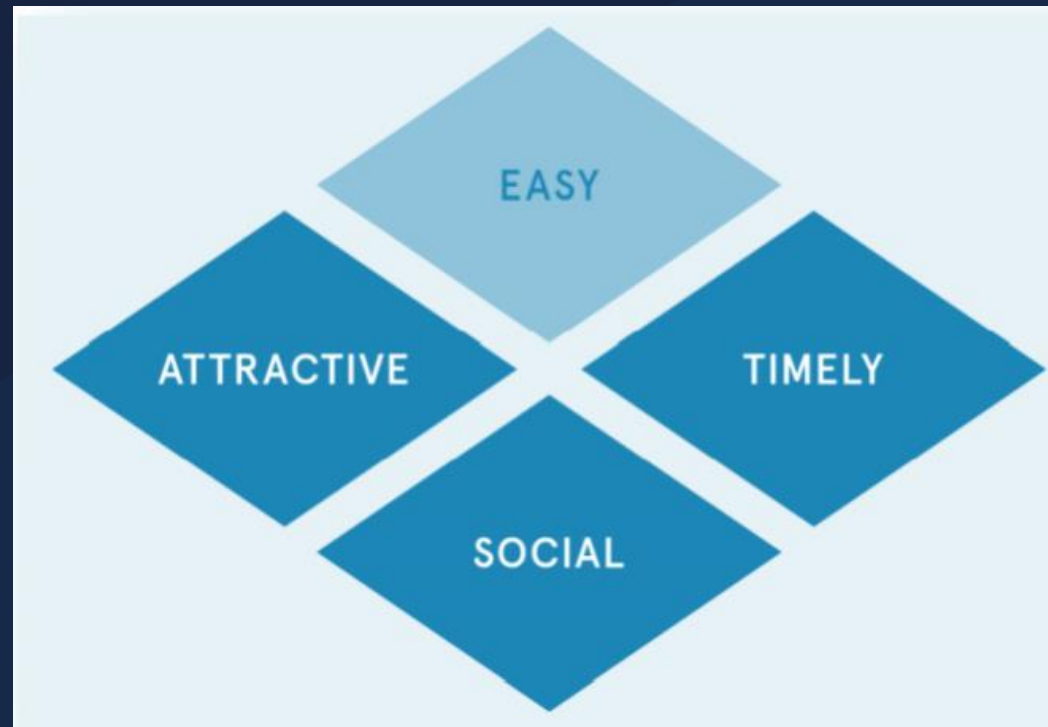


NUDGE RECIPE

	T RANSMITTER	Choose the right messenger to reinforce the message		N EXT STEP AT A TIME	Make the task seem easier by going on step at time
	H ABITS	Promote the development of new habits through new triggers and appropriate rewards		F RAMING	Create a choice context that encourages the desired behaviour
	E GO	Give value to the action by rewarding with recognition		I MMEDIACY	Postpone constraints and efforts in the future while immediately providing advantages
	D EFAULT	Create a default choice sequence that leads to the desired behaviour		N OSTALGIA	Activate the feeling of nostalgia
	R ECIPROCITY	Engage in a logic of reciprocity by creating a social debt		F AIRNESS	Show the fairness of the targeted behaviour
	I NCENTIVES	Encourage a behaviour with money, goodies or social reward		L OSS AVERSION	Mention the loss provoked by not adopting the desired behaviour
	V ALUE	Highlight the scope of work realised to justify the price		U PPER / LOWER ANCHORING	Generate favourable associations and reference points
	E MOTION	Generate an emotional response through images, visuals and embodied stories		E ASINESS	Simplify the desired behaviour
	R EWARDS	Reward with positive feedback		N ORMS	Encourage the need for conformity
	S ALIENCE	Attract attention by making an item salient		C OMPARTMENTALIZE	Materialise invisible flows (like efforts, expenses) with objects you can visually handle
				E NGAGEMENT	Generate commitments to promote consistency

“SMALL DETAILS, **LARGE EFFECTS**”

EAST, four simple ways to apply behavioural insights



Snacks and Snacks

Because we are multitasking when snacking, we tend to eat a lot more than we think.

Example: we eat chips mindlessly, without thinking about it. We aren't able to properly control our consumption.

In a 2012 study, Wansink and Rozin tested the effect of introducing a red potato chip every ten chips in a pack.



They compared the consumption of people who were given a standard pack of chips to the consumption of those who had the packs with red chips in it.

They found that the group with the red chips consumed **50% less** calories than the other group



A close-up photograph of a person's hand holding a large stack of potato chips. The chips are arranged in a neat, wavy stack. Most of the chips are a pale yellow color, but there are several red chips interspersed within the stack. The hand is positioned on the left side of the frame, with the thumb and fingers visible, holding the stack. The background is dark and out of focus.

The red chips act as implicit alerts

- they allow the consumers to keep track of consumption more easily
- they also suggest that they have eaten enough.

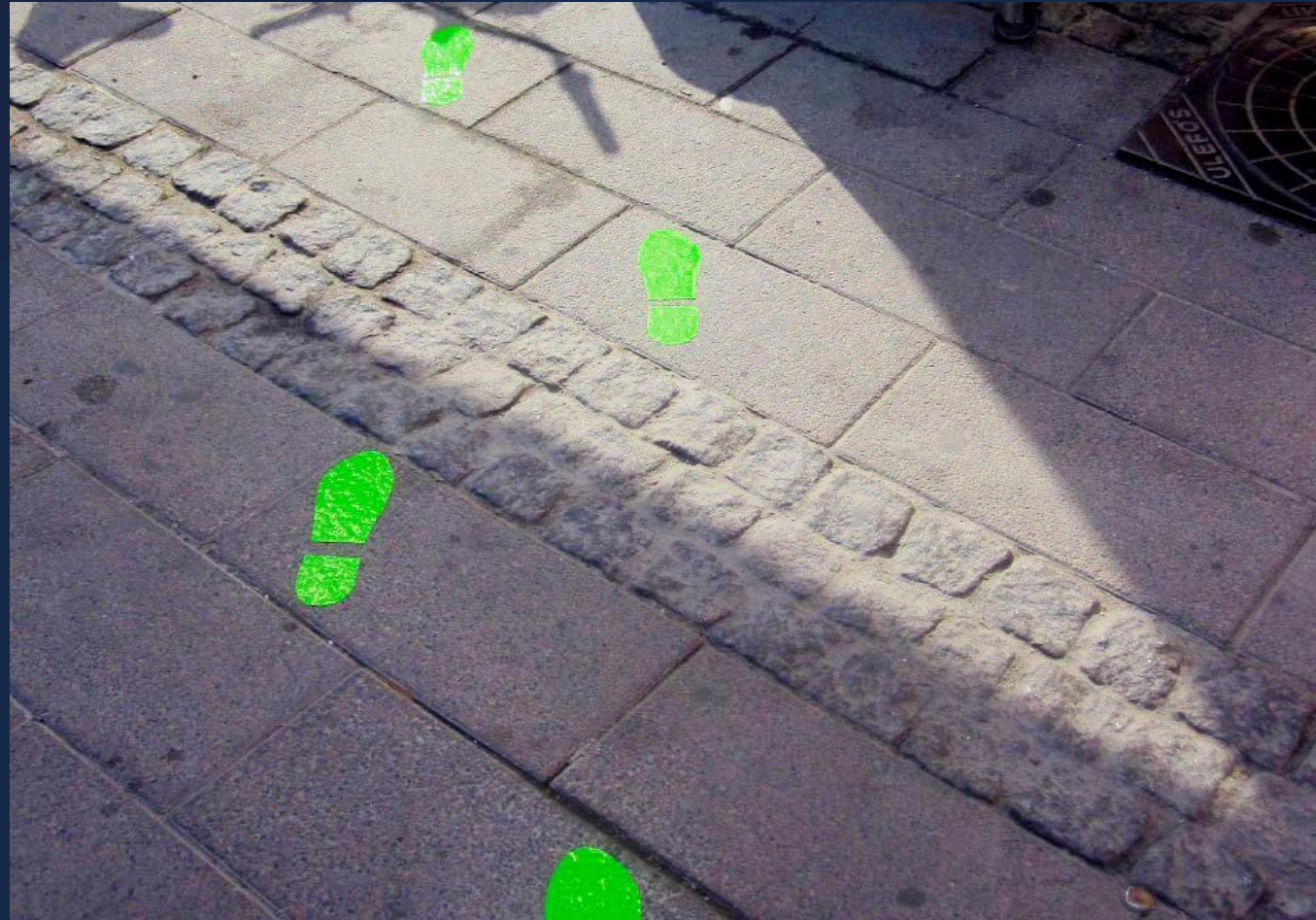
Littering behaviour

In 2011, Pelle G. Hansen and his students from Roskilde University came up with a litter-reducing nudge that they proceeded to test in the streets of Copenhagen.

First, the students handed out free caramels to pedestrians. Then they counted the number of wrappers on the street, in the street's garbage cans, on side streets and in bicycle baskets.

Finally, they placed green footprints that led to the bins, handed out caramels again and repeated the counting exercise.

**46% decrease in wrappers
ending up on the streets.**



Organ Donation

Status quo or default bias

“Opt-In Default”

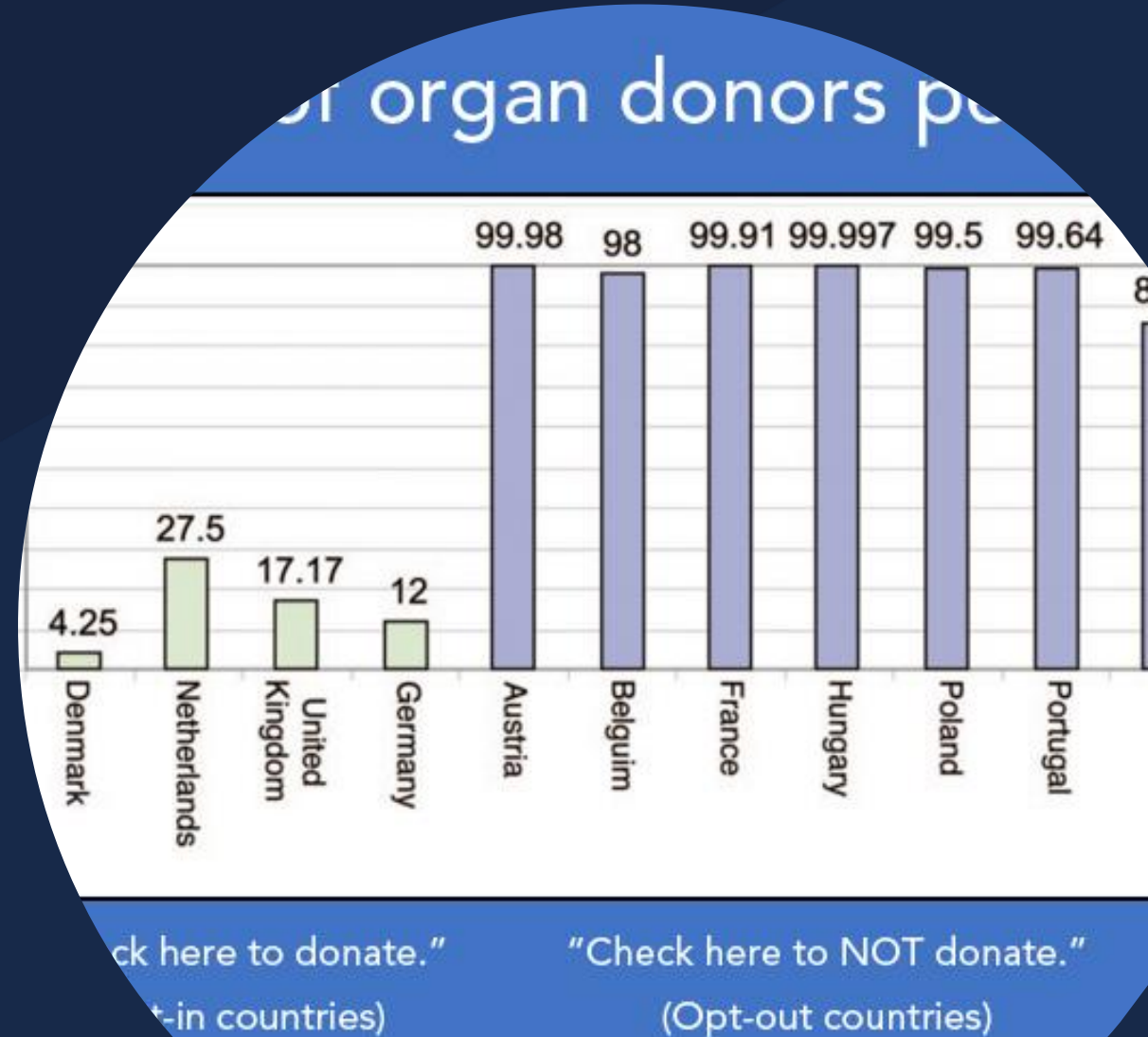
☐

Check this box if you wish to participate in the organ donor program.

“Opt-Out Default”

☐

Check this box if you **DO NOT** wish to participate in the organ donor program.



The NUDGE Project: Unlocking sustainable energy behaviours through nudges

Energy | 4th March 2024



©shutterstock_Wanan Wanan_2316251567

The Horizon Europe-funded NUDGE¹ (NUGing consumers towards enerGy Efficiency through behavioural science) project sought to explore the potential of behavioural interventions, also known as behavioural nudges, **at incentivising consumers to make energy-saving choices.**



RE STARTUPS

SOLShare

Delivering renewable energy to vulnerable communities

Details of the startup:

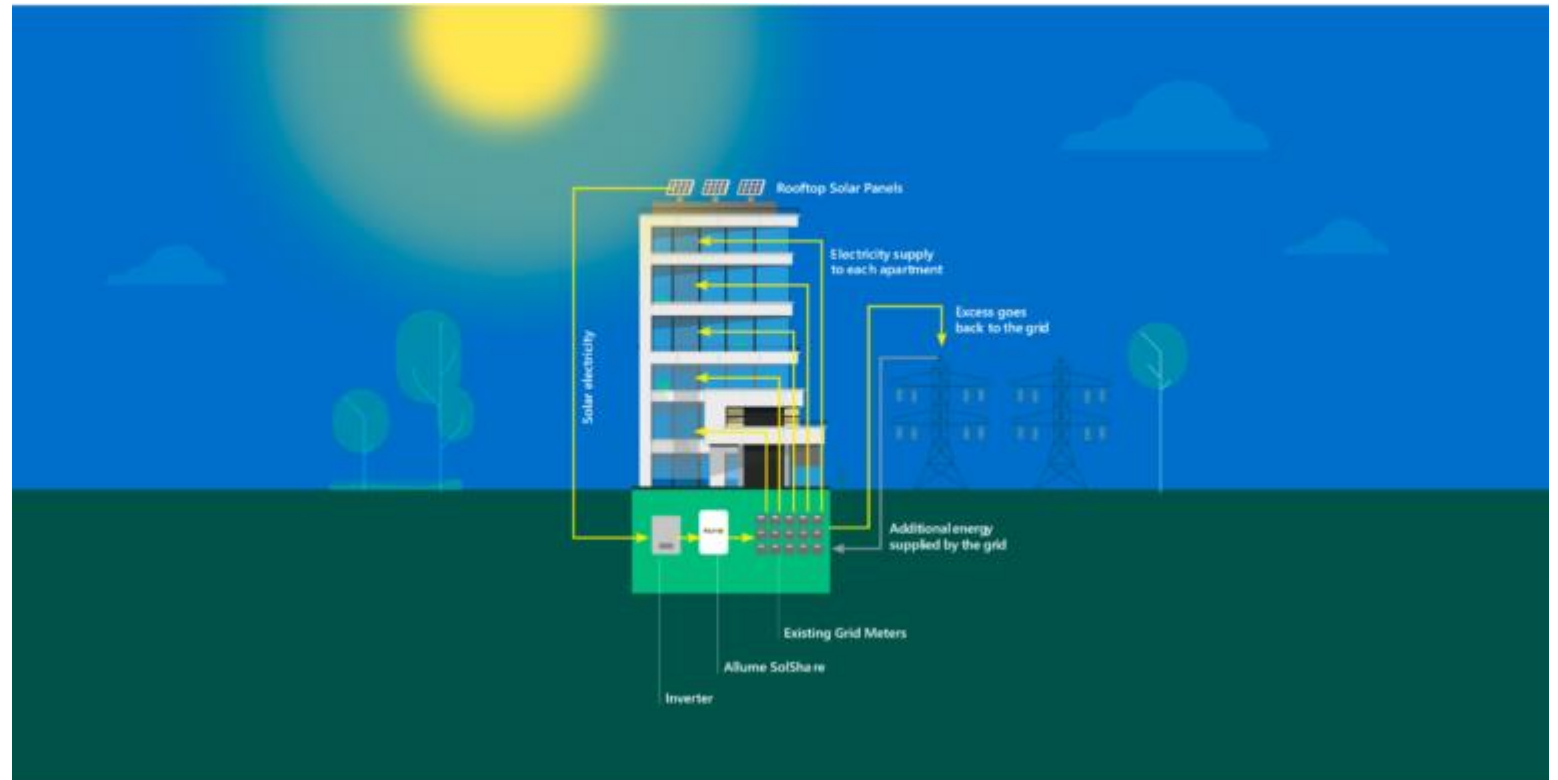
Founded: 2014

Total funding amount: \$2.8M

Industry: solar energy

Applications: solar energy grid platform

Solar energy can help underprivileged communities access energy despite their economic limitations and geographical isolation. Not only do they gain independence from raising electricity prices, often outside their budget, but from the infrastructure that doesn't develop in their favour.



FlexiDAO

Helping consumers and producers move to a 24/7 carbon-free power grid through blockchain

Details of the startup:

Founded: 2017

Total funding amount: \$ 7M

Industry: renewable energy

Applications: energy traceability improvement

Blockchain is a great tool for improving security and making financial services more accessible and democratic, but can it also contribute to the environment? It turns out it can also fuel the growth of the renewable sector, improving energy traceability. How exactly? The data on the blockchain is stored in immutable chains, which, once added, cannot be modified or deleted. Such a model enables individuals and businesses to trace and prove their energy production and usage.



Introducing



Flexidao

Glint Solar

Helping companies and investors find optimal places for creating solar farms

Details of the startup:

Founded: 2020

Total funding amount: 3.1M

Industry: solar energy

Applications: solar farm prospecting

There are many misconceptions about solar energy production, one of them being their suitability for any environment. While some would assume the more sun, the better, solar panels are actually the most efficient in moderate sunlight and heat. Solar plant in the middle of the desert is, thus, not the best idea, neither by the rainy coast, since the humidity decreases the panel efficiency.



WHY ARE UNICORNS IMPORTANT?



TECH-SAVVY

Unicorns leverage digital tools for automation, cloud computing and analytics.



DISRUPTIVE

Unicorns bring innovative and affordable solutions to the market.



CONSUMER-FOCUSED

Unicorns offer products that solve user problems.



EFFICIENT

Unicorns build minimum viable products to be repeatedly tested and adjusted.



GROWTH-DRIVEN

Unicorns have a vision for growth and a plan to scale the company.





**More than
unicorns**

A new
paradigm



HOW DOES SUSTAINABILITY HELP STARTUPS ACHIEVE UNICORN STATUS?

COMBINATION OF GREAT OPPORTUNITIES



According to Deloitte, young professionals expect not only creative freedom but also adherence to ethical standards and corporate accountability for promises.



According to the investment bank Morgan Stanley, almost 90% of investors say they are interested in investing in sustainable businesses.



Decision-makers used to think that a responsible approach to the environment hindered rapid business development, but today sustainability is one of the most important catalysts in the startup ecosystem

RE UNICORNS

Goodleap

GoodLeap is a point-of-sale platform for sustainable home solutions.



[For Partners](#)

[For Homeowners](#)

[Company](#)

[Contact Us](#)

[Partner Center](#)

[My Account](#)

[Enable Accessibility](#)

Details of the startup:

Valuation: \$12.00B (October 2021)

Country: United States

State: California

City: Roseville

Started in: 2003

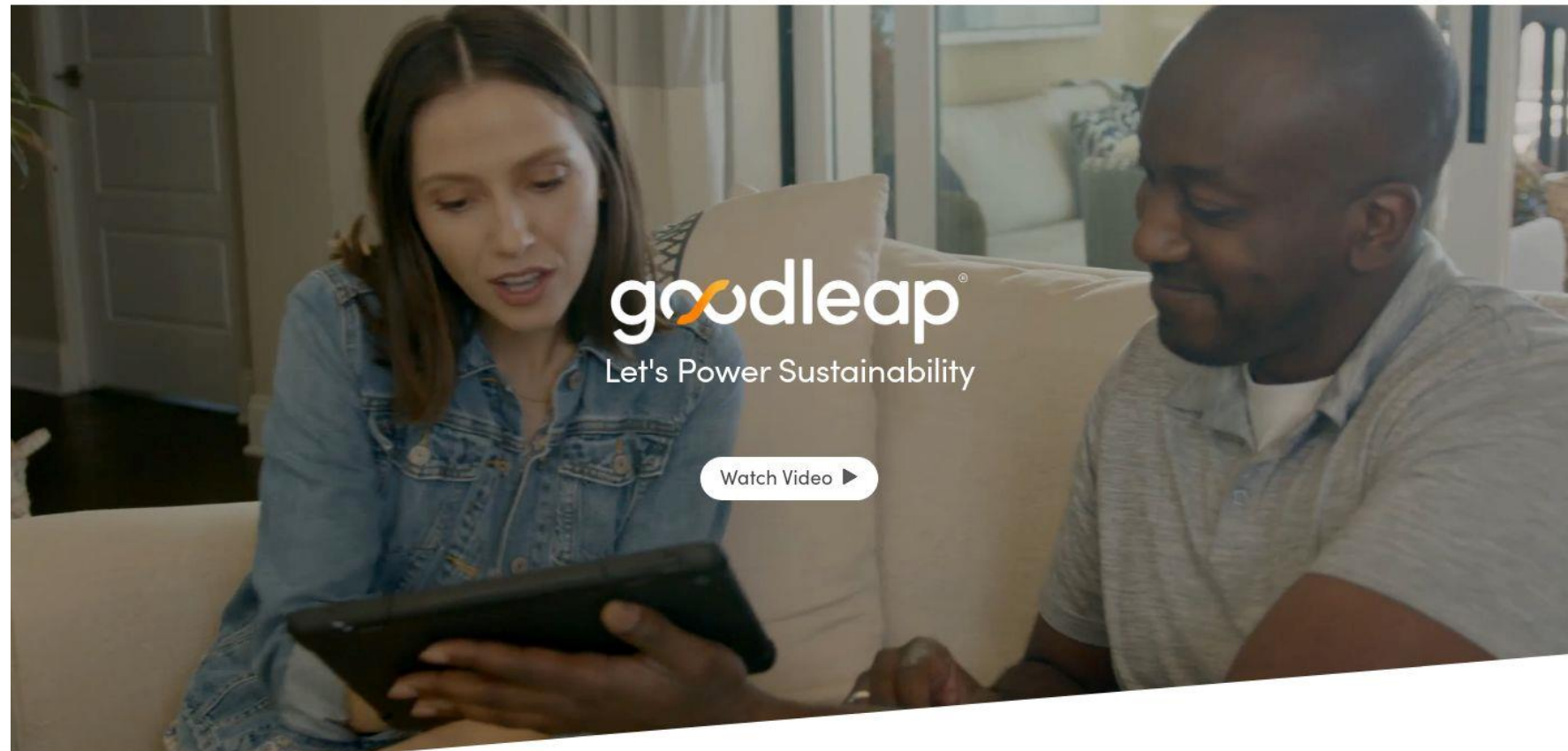
Founders: Hayes Barnard

Number of employees: 1,000-5,000

Funding: \$1,800.00M

Funding rounds: 2

Number of investors: 8



Aurora Solar

Aurora Solar is a software-as-a-service company that evaluates solar installation projects using aerial imagery.

Details of the startup:

Valuation: \$4.00B (May 2021)

Country: United States

State: California

City: San Francisco

Started in: 2013

Founders: Christopher Hopper,
Samuel Adeyemo

Number of employees: 101-250

Funding: \$523.47M

Funding rounds: 5

Number of investors: 8

The image shows a screenshot of the Aurora Solar website. The header features the Aurora logo and navigation links: Products, Resources, Company, Careers, Pricing, Login, and a 'Schedule Demo' button. A vertical list of steps (Plan, Design, Simulate, Sell, Finance, Permit) is on the right, with 'Sell' highlighted in red. The main content area has a date 'March 2' and the headline 'Join us for Sunrise 2023'. Below the headline is a sub-headline: 'See how the latest advancements in Aurora and HelioScope are making solar sales, design and delivery easier and faster.' and a 'Learn More' button. On the right, a laptop displays a 3D house model with solar panels, and two floating cards show financial estimates: 'Pre-Solar' with a monthly payment of \$121.50 and 'Post-Solar' with a monthly payment of \$18.97. The bottom of the page has navigation arrows and a 'Scroll' button with a downward arrow.

aurora

Products Resources Company Careers Pricing

Login Schedule Demo

Plan
Design
Simulate
Sell
Finance
Permit

March 2

Join us for Sunrise 2023

See how the latest advancements in Aurora and HelioScope are making solar sales, design and delivery easier and faster.

Learn More

Pre-Solar Year 1 estimate
Solar cost: \$121.90
Fixed costs: \$0.00
Average monthly payment: **\$121.50**

Post-Solar Year 2 estimate
Solar cost: \$121.90
Fixed costs: \$0.00
Average monthly payment: **\$18.97**

Scroll

Gokin Solar

Gokin Solar focuses on the research and development and production of high-efficiency large-size photovoltaic silicon wafers.

Details of the startup:

Valuation: \$2.88B (April 2022)

Country: Japan

State: Kagoshima

City: China

Started in: 2019

Funding: \$597.35M

Funding rounds: 3

Number of investors: 21



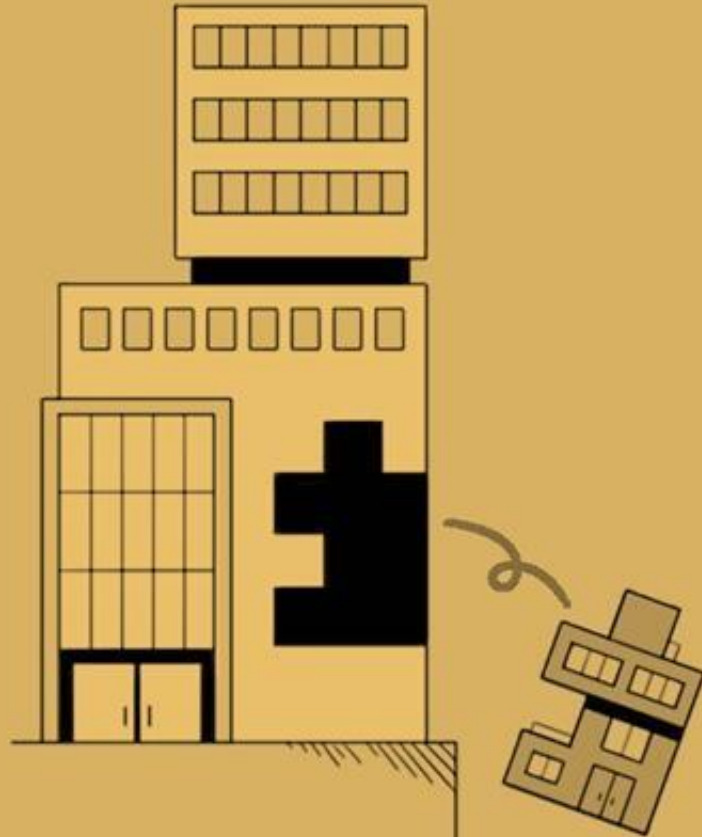
Spin-off vs Start-ups

innovative company in its initial phase, with great growth potential, usually related to the technology area.



< 3 years

< 10 years



Spinoff

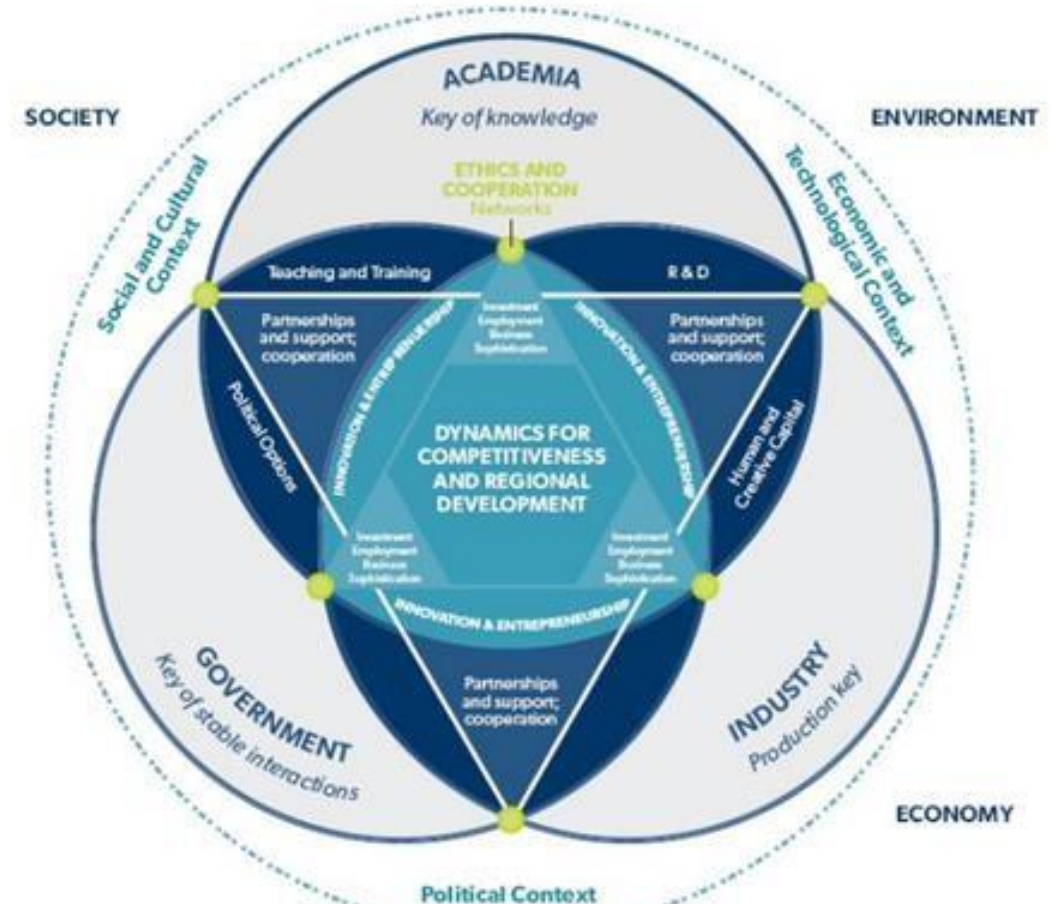
['spin-, ðf]

The creation of a new independent company by selling or distributing new shares of its existing business.

From Universities to Spin-offs

- **Universities** foster the crucial interaction between **Industry** and **Government**, contributing to the development of knowledge economies and knowledge societies (**Triple Helix Model of Innovation**)
- The transfer of knowledge from Universities often occurs with the establishment of new companies, or **University Spin-offs**.
- **These spin-offs** are an agile, less bureaucratic and more dynamic way for knowledge and technology produced in the Academia to reach the market.

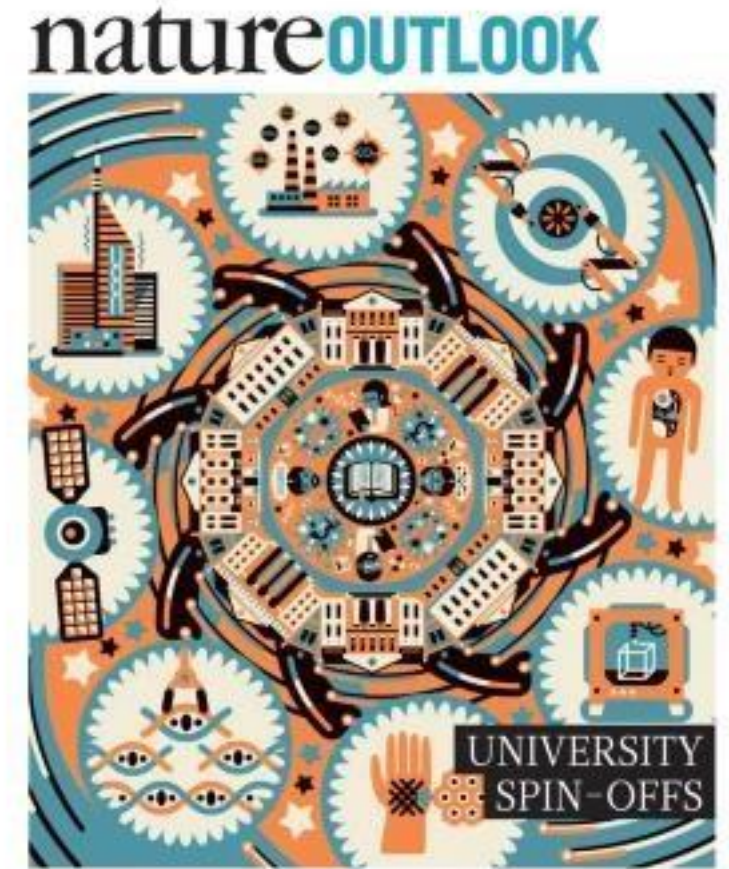
Figure 1
Farinha and Ferreira's Triple Helix Triangulation model²



University spin-offs potentiality

Four potential innovation pathways are identified:

- (i) **Creating** new industries that are entirely new with no technological antecedent in the regional economy;
- (ii) **Transplanting** industries from elsewhere;
- (iii) **Diversifying** into technologically related industries;
- (iv) **Upgrading** existing industries.



The stories behind
22 science-based start-ups

<https://www.nature.com/articles/545S1a>

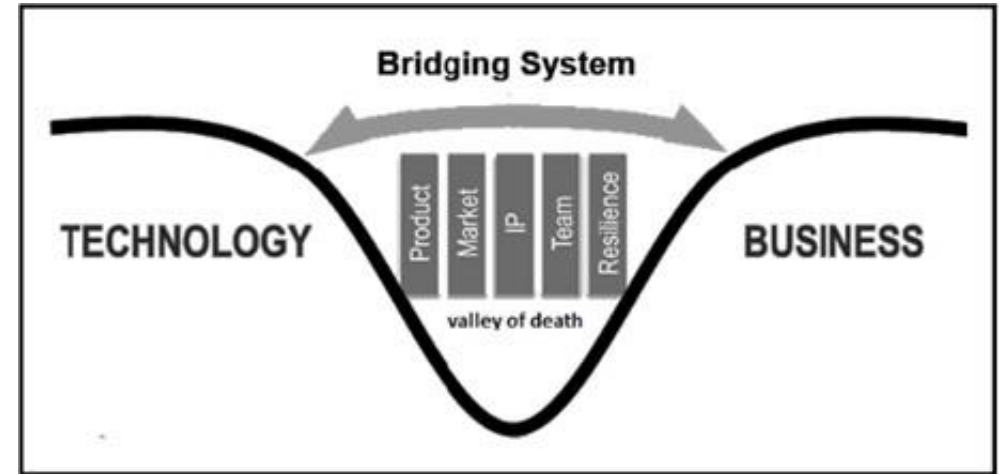
Spin-offs and the Green Transition

- **Universities play a key role in the Green Transition.**
- The promotion of University Spin-offs **has become a measure** adopted by many European universities to facilitate the commercialization of new technologies and knowledge that can lead to **more sustainable economies and societies.**
- University-based companies have been widely acclaimed by **local and regional governments** for their contribution to **the transformation of low-tech sectors into high-tech industries**, especially through **stimulating sustainable process design**, increasing **regional productivity**, and creating **new employment opportunities** in sustainable sectors

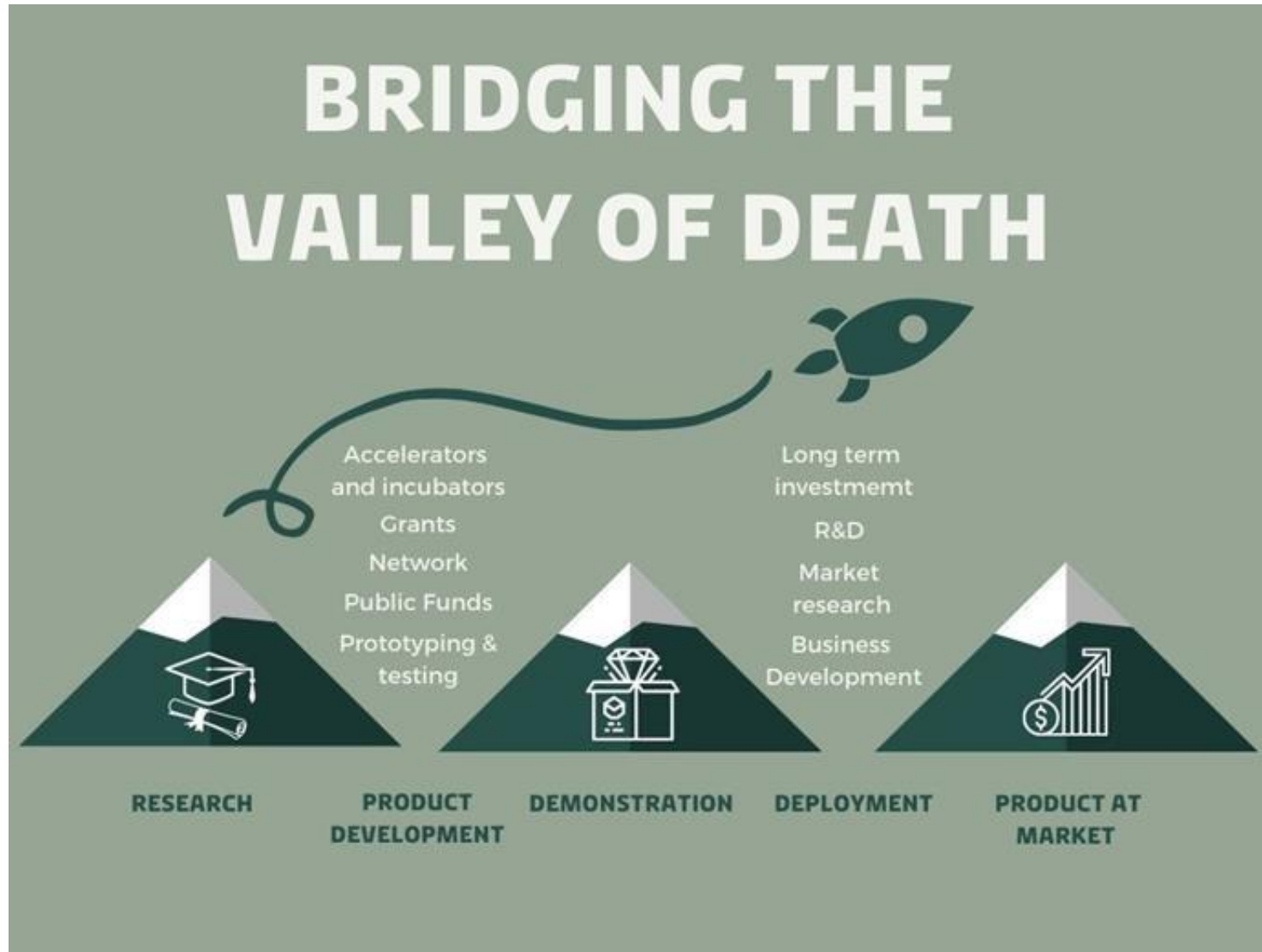


Clean Tech Industry and the Valley of Death

- Nonetheless, there are **acknowledged gaps** in the journey from university research to its commercialization, metaphorically known as **valleys of death**.
- This refers to the fact that **many promising discoveries never get out of the lab and into the market**, and consequently a lot of potential goes unfulfilled.
- Important knowledge for the **Green Transition** has remained within the walls of Universities, affecting the development of the Clean Tech Industry.



Universities are working to bridge these gaps



HOW?

By creating an efficient **infrastructure and collaboration** with their surrounding ecosystem

SUCCESS CASES



Quaise launches with \$6 million to unlock Earth's most abundant clean energy source

MIT spinoff Quaise Inc. has raised \$6 million in a funding round led by The Engine. The company is working to develop and commercialize a new hybrid deep drilling technology for geothermal energy, pioneered by Paul Woskov and a team at MIT's Plasma Science and Fusion Center. The early research for this technology was supported through MITEI's Seed Fund grant program.

JUNE 8, 2020 - [BUSINESSWIRE](#)

MIT Energy Initiative connects MIT research teams with industry and government sectors to develop solutions to the world's energy challenges

SUCCESS CASES

Stanford | ENERGY

Stanford Climate Ventures

[Home](#)

[People](#)

[Student Testimonials](#)

[FAQs](#)

Energy 203: Stanford Climate Ventures

Since autumn 2016, the course has been the launchpad for 79 distinct projects, resulting in 38 new companies. These companies have raised over \$470 million to pursue further development, and SCV companies currently employ more than 450 people in 13 different countries on 5 different continents.

Stanford Climate Ventures is a project-based course sequence that practices the creation of transformational climate ventures and innovation models.

SUCCESS CASES

SWI swissinfo.ch

Swiss perspectives in 10 languages

Science >

Swiss universities launch green energy coalition



Entrepreneurship & Innovation

Many groundbreaking ideas are born at ETH Zurich. Some of them have the potential to survive in the market and make a positive contribution to our society. Support the young

entrepreneurs of tomorrow - so that ETH is not only a place full of inventive talent, but also an entrepreneurial hotspot in Switzerland.



Promoting start-ups: Pioneer Fellowship

#entrepreneurship #startup



Centre for Students and Entrepreneurs

#icethz #innovationhub #startup

Switzerland's federal institutions of technology ETH Zurich and EPFL have launched a major renewable energy initiative with partners aimed at developing solutions to stock and transport green power. Training new entrepreneurs is part of the strategy.

European Facility on Molten SALT technologies TO power and energy system applications
GA Number: 101079303
European Research Executive Agency REA.C3

SALTOpower



UNIVERSIDADE
DE ÉVORA



Deutsches Zentrum
für Luft- und Raumfahrt
German Aerospace Center



Italian National Agency for New Technologies,
Energy and Sustainable Economic Development



Funded by
the European Union

Spin-Off Facility

Empowering Entrepreneurship: The Role of Spin-off Facilities

CASACCIA, ROME, 09.-10.05.2023

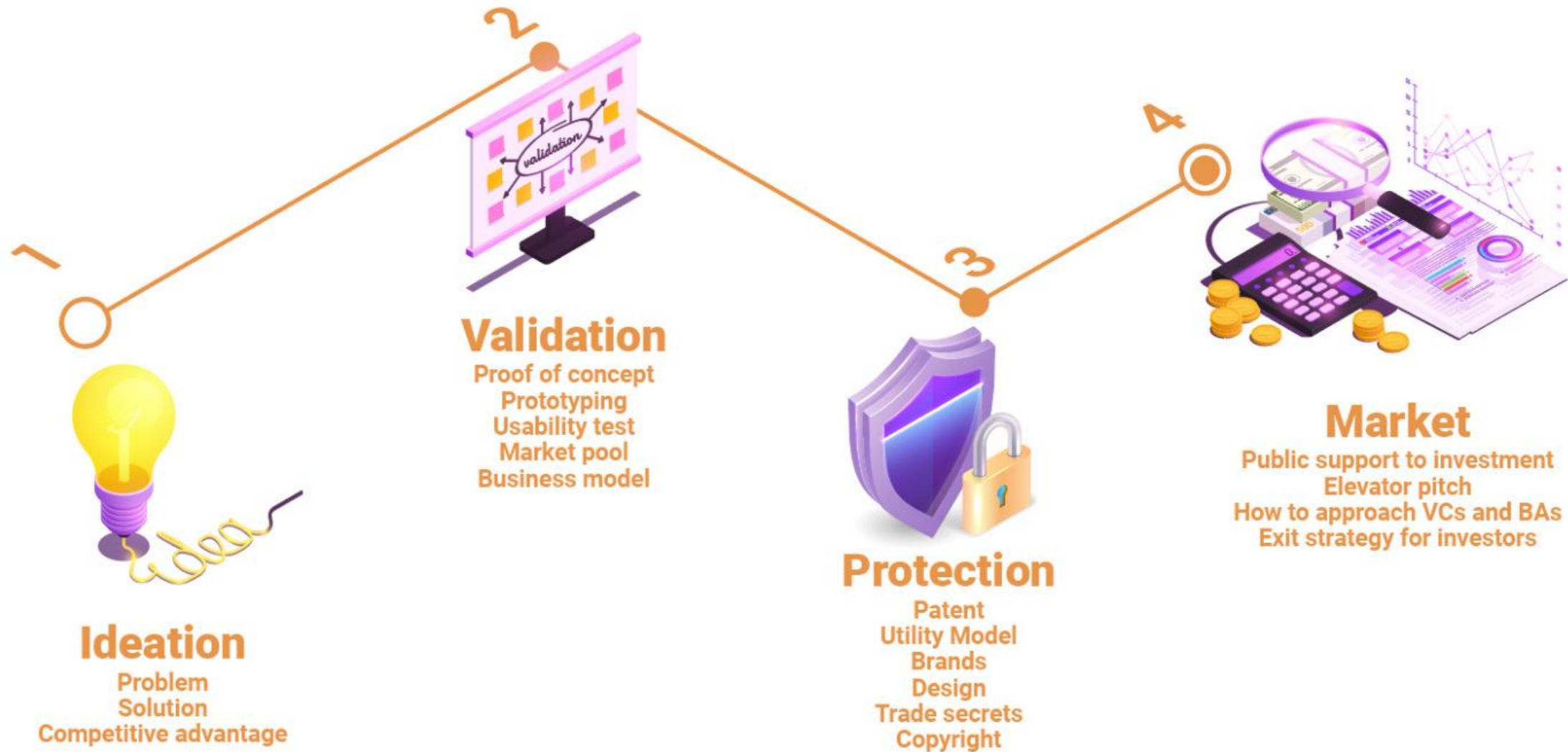
Spin-off Facility

The Spin-off Facility would be a multidisciplinary hub focused on accelerating research, innovation, and commercialization of next-generation renewable energy technologies.

This facility would leverage expertise that are more efficient, cost-effective, and scalable.

SALTOpower

Spin-off Facility



Ideation



Problem



Top priority need

Solution



The “best option”?

Competitive advantage



Value proposition

the unique benefits and value a product or service offers to its target customers

Innovation
stages



Validation



Proof of concept
Prototyping
Usability test
Business model

**Innovation
stages**

Protection



Innovation
stages

Patent
Utility Model
Trade marks
Design
Trade secrets
Copyrights



Protection



**Innovation
stages**

Trade marks

- NOKIA
- Product "208"
- Start-up tone

Patents & utility models

- Data-processing methods
- Operating system
- Operation of user interface

Design

- Form of overall phone
- Arrangement and shape of buttons
- Position and shape of screen

Trade secrets

- Some technical know-how kept "in-house" and not published

Copyright

- Software
- User manuals
- Ringtones
- Start-up tone
- Images

Market



Elevator pitch

Public support to investment

How to approach VCs and BAs

Exit strategy for investors

**Innovation
stages**



