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Lisbon School of Economics & Management
Universidade de Lisboa

Master in Innovation and Research for Sustainability

Evaluation and Management of R&I Projects

Module I: Module I: Introduction to R&D+I Management

Lecture 1: Crafting an R&D + Innovation Strategy

Ana Casaca

2026

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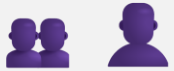
Class Principles

No distractions

Getting Started is more important than "being right“ 🚀

Work Together, Alone



Time-boxing obsession

Hi from Ana 👋

- 48y, married, 2 kids & 1 dog
- **Global Director of Innovation**
  @Galp
- **Board Member**
  European Innovation Council
- **Invited lecturer**
  @ISEG | @Catholic University | @Porto Business School
- **MBA**
  Porto Business School
- **Microbiologist**
  Catholic University

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Hi from Marco 👋

- 43y, married, 2 kids
- **Head of Industrial Innovation**
  @Galp
- **Invited lecturer**
  @ISEG
- **MBA**
  Lisbon MBA (Católica | Nova)
- **PhD**
  Geosciences @ The University of Sydney
- **Geologist**
  FCUL

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Welcome 👋

👉 Module I: Introduction to R&D+I Management

Lecture 1: Crafting an R&D+I Strategy

- Overview of R&D + Innovation: Its importance and impact
- Exploring Innovation Types: Understanding the diversity in innovation

Lecture 2: Applying R&D+I Management

- Developing R&D+I Capabilities: Techniques to enhance innovation
- Implementing R&D+I: Strategies for effective teamwork and innovation
- Practical Components: Hands-on exercise to define a Thesis, a Roadmap of Innovation and OKRs

👉 Module II: Project Lifecycle in R&D and Innovation

Lecture 3: R&D+I Project Fundamentals: From Conception to Market

- Project Initiation: Scope definition and scientific and technical merit
- Project Planning: Strategy development, identifying challenges, and risk assessment
- Practical Components: Hands-on exercise to define project scope using a short case study

Lecture 4: R&D+I Project Fundamentals: From Conception to Market

- Project Execution: Leading RD&I teams, fostering creativity, managing change, and overseeing project progress.
- Project Closure: Capturing lessons learned and assessing project impact on value creation.
- Practical Components: Checklist or templates for project closure activities, such as lessons learned and impact assessments
- Project assignment presentation & discussion

Lecture 5: Real-World Applications

- Presentation of Real Case Studies: discussion & analysis of how to evaluate a R&D+I project

👉 Module III: Assessing R&D and Innovation Projects

Lecture 6: Evaluating R&D+I Projects

- Core Evaluation Elements: Key factors in assessing projects, including technology feasibility and investment criteria.
- Practical Components: Analyze an R&D project to assess its value proposition and evaluation criteria using a checklist or template covering financial, technical, and market aspects

Lecture 7: Evaluating R&D+I Projects

- Business Model Design: Analyze phases, investments, outcomes, and financial/social impact.
- Financial Metrics: Explore profitability, cost of capital, and their role in assessments.
- MVP Definition: Learn to outline an MVP with essential features.
- Practical Activity: Calculate financial indicators like profitability and cost of capital for a sample project

Lecture 8: Real-World Applications

- Presentation of Real Case Studies: discussion & analysis of how to evaluate a R&D+I project

Lecture 9: Evaluating R&D+I Projects

- Risk Management: Techniques for analyzing and mitigating project risks
- Practical Components: Framework to identify and prioritize risks for a hypothetical R&D+I project | Mitigation strategies for high-priority risks and discuss their potential effectiveness

👉 Module IV: Real-World Case studies

Lecture 10: Group Project Presentations

- Dedicated to project assignment discussion

Lecture 11: Real-World Applications

- Presentation of Real Case Studies: discussion & analysis of how to evaluate a R&D+I project

Lecture 12: Group Project Presentations

- Group project presentations
- Integrating Different Perspectives of Project Evaluation

Assessment

Assessment comprises:

- exam - 65%
- group project assignment presentations and report – 25%
- individual participation and debate in class and workshops - 10%

The exam is designed to assess students' understanding of the lectures class, the course book, articles and other materials referenced in the lectures.

The exam consists of essay questions and concept explanations. It may also contain multiple choice questions.

The individual participation evaluation is based on interactive discussions and debate. Evaluation of individual participation in the class, contributes to assess the students' problem-solving skills.

The group project assignment is designed to enable students to apply the knowledge gained in class to a specific R&D project. This not only enhances their understanding of the subjects taught but also equips them with the skills needed to make informed assessments in real-world scenarios.

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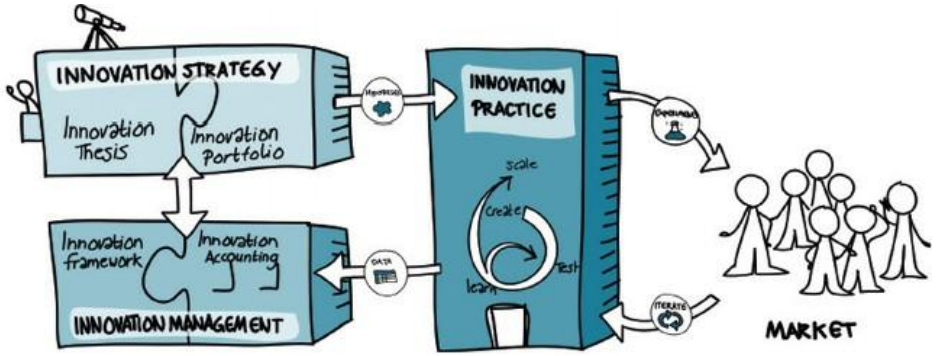
Module I Plan 👋

Exploit & explore, organize for R&D+ innovation



👉 **Lecture 1:** *Crafting an R&D+ I Strategy*

- Overview of R&D + Innovation: Its importance & impact

- Exploring Innovation Types: Understanding the diversity in innovation

👉 **Lecture 2:** *Applying R&D+ I Management*

- Developing R&D+I Capabilities: Techniques to enhance innovation

- *Implementing R&D+I: Strategies for effective teamwork and innovation*
- *Practical Components: Hands-on exercise to define a Thesis, a Roadmap of Innovation and OKRs*

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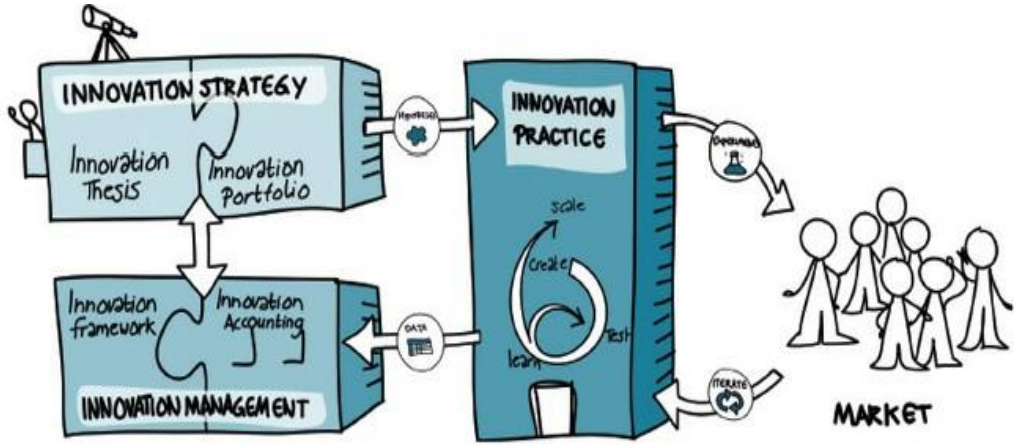
An innovation leader must be able to:

Design and articulate an R&D Innovation Strategy

The high-level plan that guide where an organization will (and will not) innovate, in alignment with the organization's overall business goals



Establish a collaborative R&D Innovation Practice & Culture

The processes, methods, techniques, attitudes, values, and behaviors that an organisation cultivates in order to encourage and support innovation

Why are we here?

Why you will probably live longer than most big companies

Big companies used to have a lifespan of 61 years, it's now down to 18

By Emeritus Professor Stéphane Garelli

https://www.imd.org/research-knowledge/articles/why-you-will-probably-live-longer-than-most-big-companies/

A recent study by McKinsey found that the average life-span of companies listed in Standard & Poor's 500 was 61 years in 1958. Today, it is less than 18 years. McKinsey believes that, in 2027, 75% of the companies currently quoted on the S&P 500 will have disappeared. They will be bought- out, merged, or will go bankrupt

fortune 500 companies average life-span

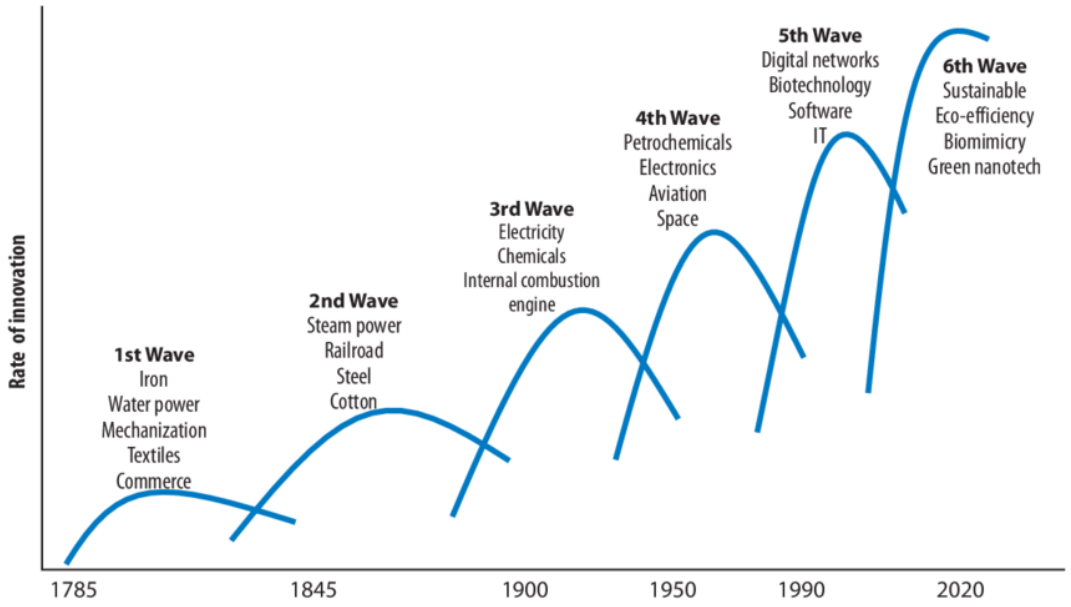
in 1958	today
61 years	**17 years**

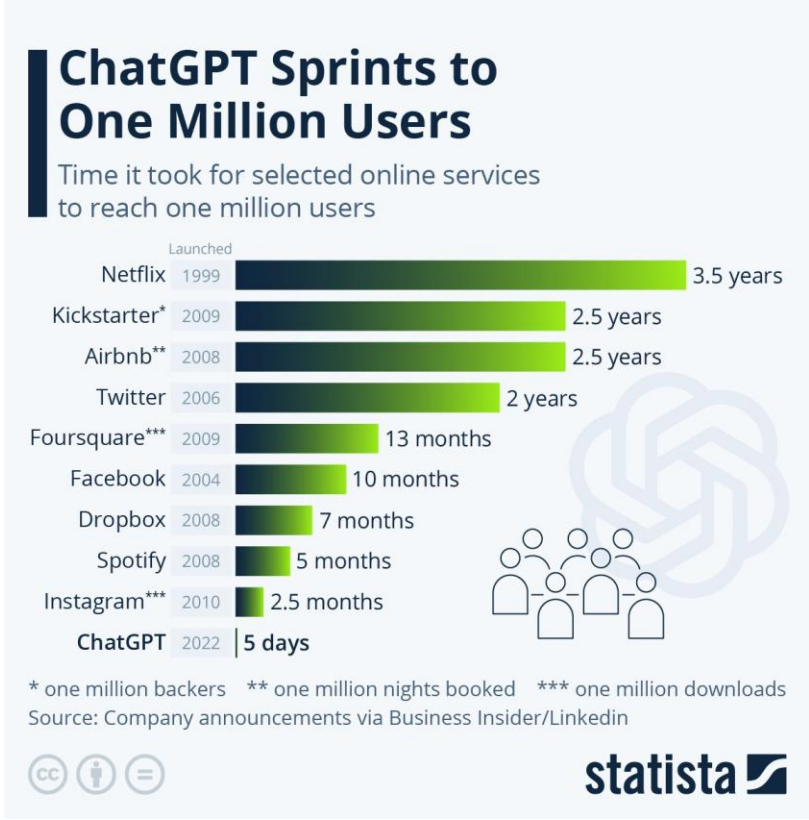
Why are we here?

Time to one million users

Disruption is getting faster and faster

Schumpeter explained this phenomenon through his waves of innovation. Each wave of innovation does not last equally, and that their length is shortened due to the rapid development of new technologies (The Economist, 1999; Levi Jakšić et al., 2018a). Currently, we are living in the 5th & 6th wave of innovation, where digital solutions & clean tech are becoming the leading impetus of change.

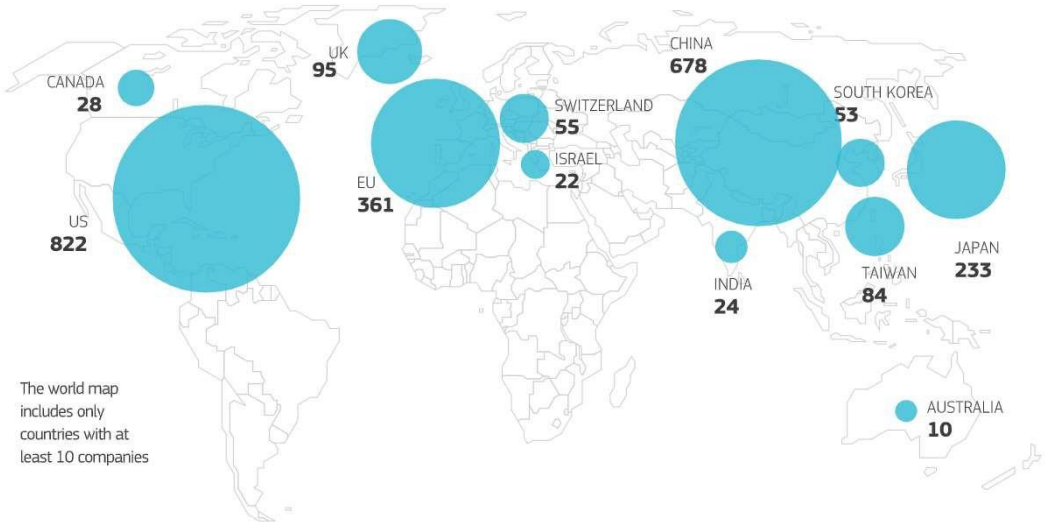


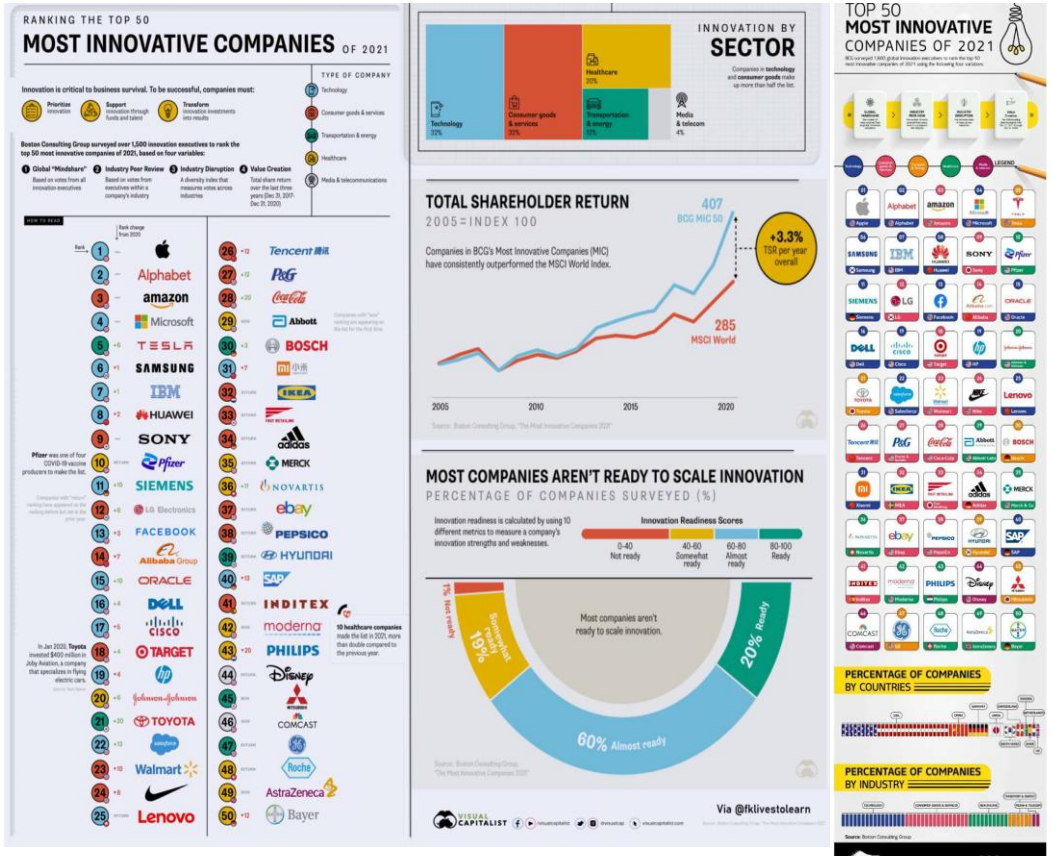


Data explains...

The 2022 Scoreboard comprises the 2 500 companies investing the largest sums in R&D in the world in 2021. These companies, based in 41 countries, each invested over €48.5 million in R&D for a total of €1093.9 billion, which is approximately 86% of the world's business-funded R&D.

EUROPE | **WORLD**





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Defining Innovation

Innovation ≠ R&D

Innovation ≠ Technology

Innovation ≠ Creativity

Innovation ≠ Marketing

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Defining Innovation

Innovation is the **practical implementation** of new ideas that result in the introduction of new goods or services or **improvement** in offering goods or services to the market

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Defining R&D

R&D refers to the **systematic activities that organizations undertake to innovate** & introduce new products or services, or to improve existing ones.

It is a crucial part of the innovation process, involving the **exploration of technology & science** to discover new knowledge & apply it in ways that create new offerings or enhance current solutions

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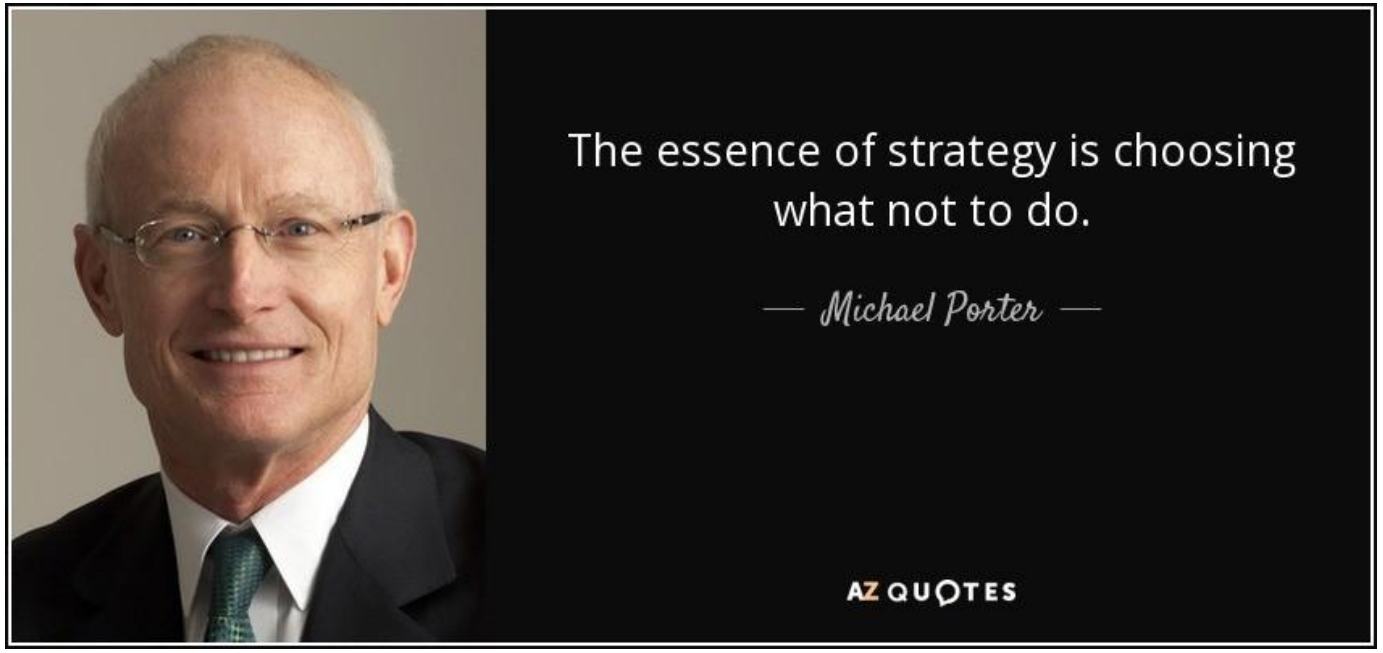
R&D Innovation Strategy is Strategy



Story time about the power of saying no

In 2013 in San Francisco...

WhatsApp Founder

Text, text, text…

Substitute the sms

Meanwhile in Portugal...

Talk

- Real-time conversations;
- Online and offline notifications;

Share

- Share any type of media – videos, pictures & sounds;
- From anywhere – camera, YouTube, Google Images, etc.
- Instantly – just a few taps;

Play

- Win or buy coins to access special items & personalization;
- Offer interactive virtual gifts;
- Play casual game matches with your friends;

And how Do Innovations Differ in the world?

First there are different types of innovation…

- **Product** Innovation
- **Service** Innovation
- **Marketing** Innovation
- **Process** Innovation
- **Business Model** Innovation
- **Source of supply** Innovation
- **Organization** Innovation
- **Social** Innovation
- …

INNOVATION = Multidimensional
Every little helps

PRODUCT INNOVATION

Alessi
Chanel
Bang & Olufsen
Ferrari

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SERVICE INNOVATION

Alinea

MARKETING INNOVATION

ne company designed a special app where users can find verything they want.
Oréal's Makeup Genius app is augmented reality technology iat lets customers purchase items from different devices like martphones and tablets.

Absolut: with VR you were in the front row of a concert

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PROCESS INNOVATION

elBulli | Alinea

BUSINESS MODEL INNOVATION

Airbnb| Vinted

NEW SOURCES OF SUPPLY

Melissa | Corkdesign | Aviance

ORGANIZATION INNOVATION

Worten

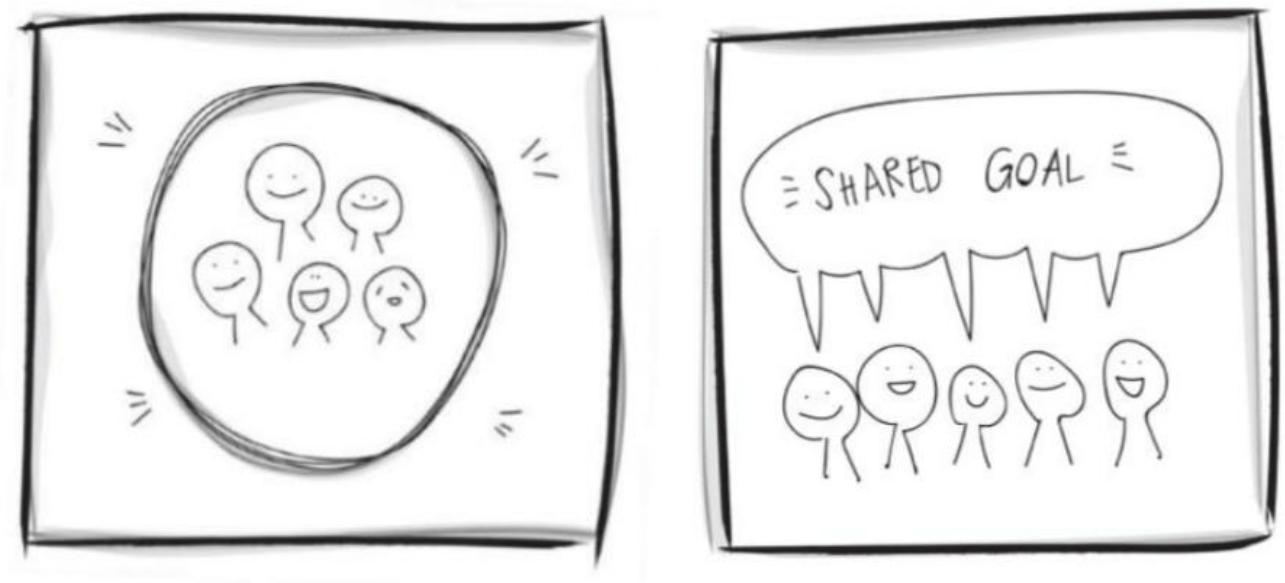
We will work in SQUADS.

Cross-functional teams who together have all the skills and expertise needed to complete the work.

Up to 8 people

Dedicating 20-40% of their time to Digitalism

Selected based on their skills, expertise and mindset



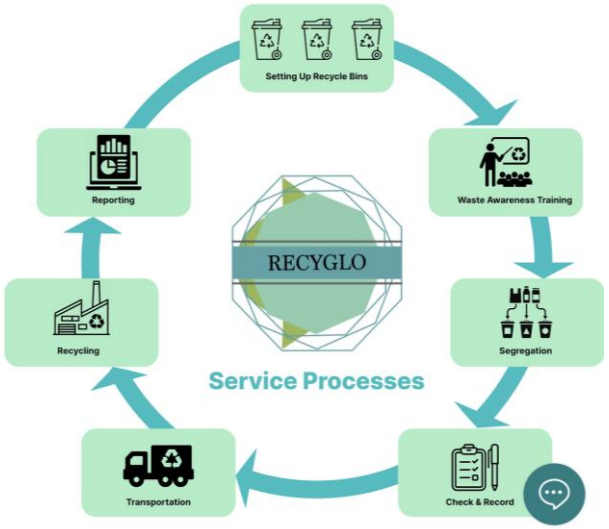
Empowered to make decisions and act

Behave as equals, regardless of rank

Open & honest feedback given – never with judgement

Aiming for ZERO E-MAILS!
We're working side-by-side and speaking to one another directly.

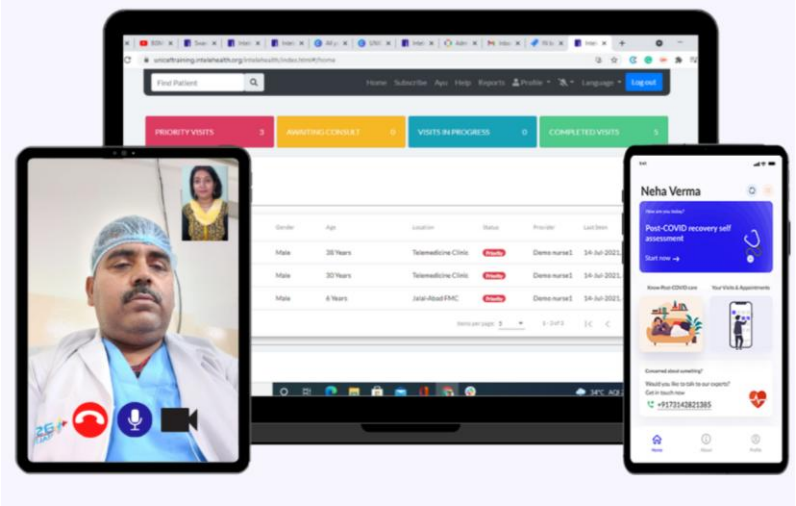
SOCIAL INNOVATION



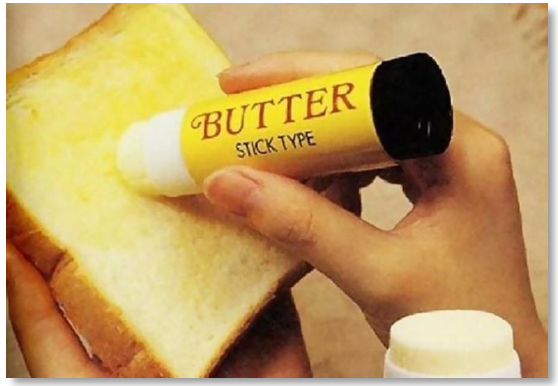
Recyglo is the first ever innovative recycling business in Myanmar. Started by 3 founders who are passionate about social impact and sustainability, our mission is to process recyclable materials in a safe and responsible manner. Currently, Recyglo provides recycling services to 2 high-end office towers, 1 international school, and a few INGO offices and companies.

Scottish biotech start-up Oceanium uses sustainably-farmed seaweed to create food and nutrition products and compostable biopackaging. It believes that a sustainable seaweed farming industry can help mitigate the effects of climate change and create jobs.

Developed at Johns Hopkins University, Intelehealth is a telemedicine platform that connects patients and frontline health workers with remote doctors to deliver primary care services at a distance in countries such as India.

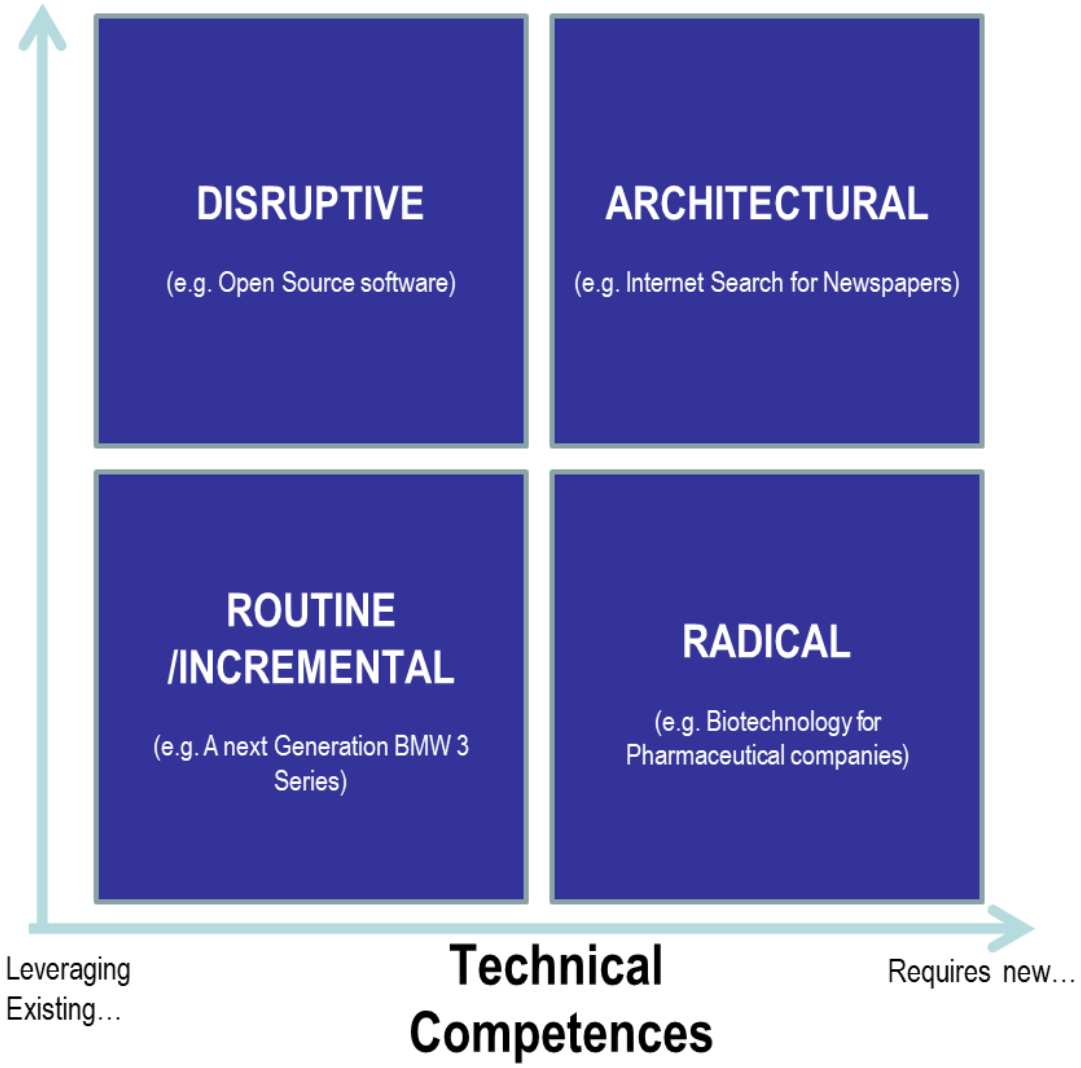


… and not all Innovations Have the Same Impact on the World



http://food-hacks.wonderhowto.com/how-to/spreading-cold-butter-just-got-way-easier-with-these-clever-hacks-0158571/

Source: Wikipedia: https://en.wikipedia.org/wiki/IBM_Personal_Computer



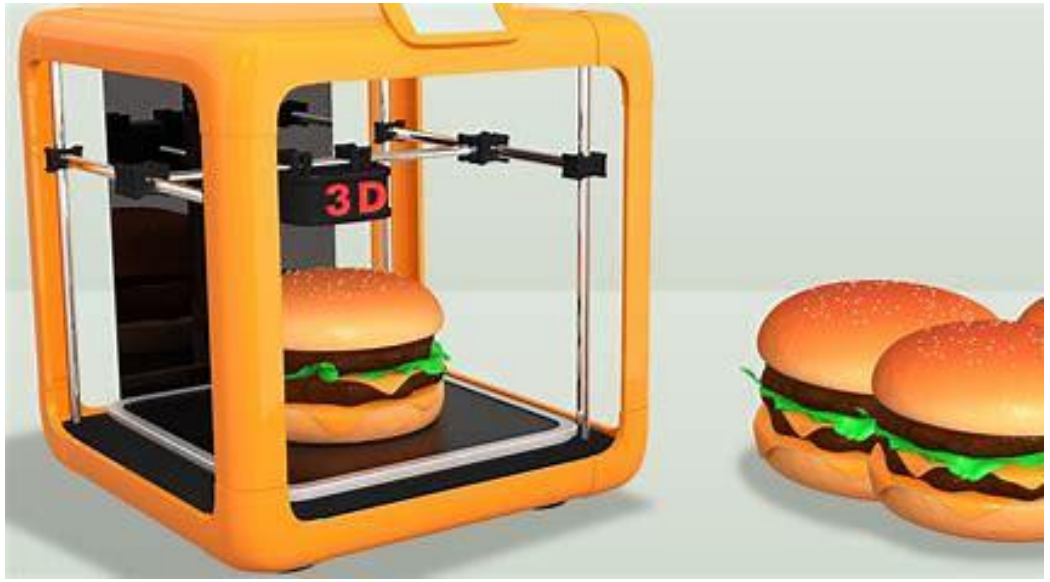
Incremental Innovation

Apple's iPhone: new version each year with small improvements

Amazon's delivery options: various delivery options, (same-day and two-day shipping)

Radical Innovation...

Electric Vehicles



3D printing technology

Development of the internet

Disruptive Innovation

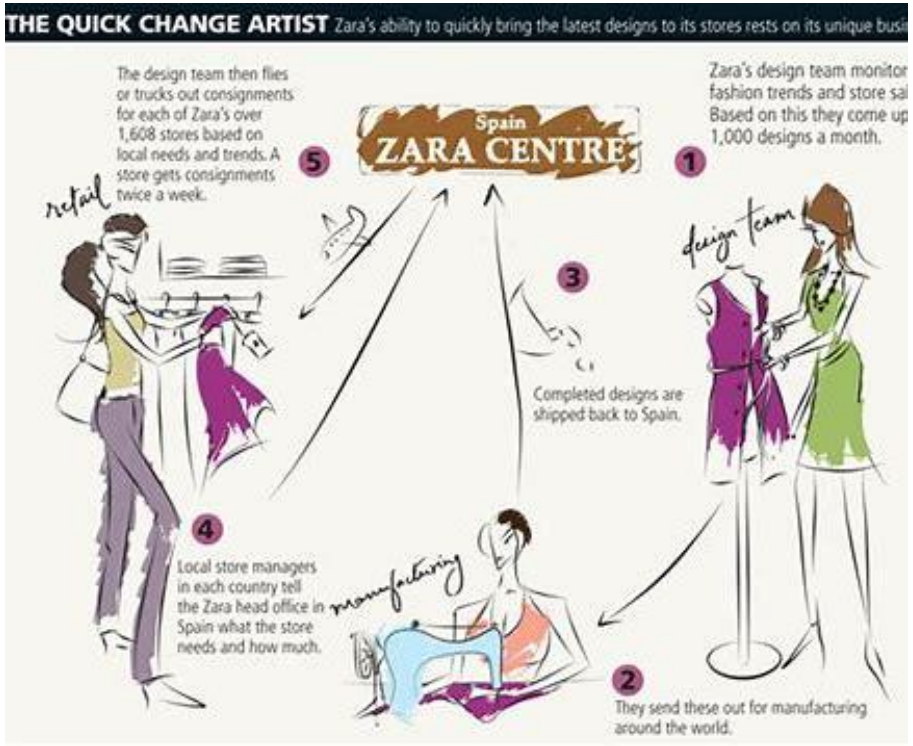
Spotify: disrupted the music industry by offering a streaming service, music on demand without the need to purchase individual songs or albums

Airbnb: disrupted the hospitality industry by offering a platform for people to rent out their homes

Architectural Innovation

An architecture of any product that changes or modifies the way various components of the systems link or relate to each other

IKEA’s flat-pack furniture:shipped and assembled easily, reducing costs and improving convenience for customers



Zara’s supply chain: integrates design, production, and distribution processes to quickly respond to changing fashion trends

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Why Do Organizations Struggle with Disruption?

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Why Do Firms Struggle to Recognize Threats

Doesn’t appear disruptive

Customers don’t ask for it

Requires different capabilities

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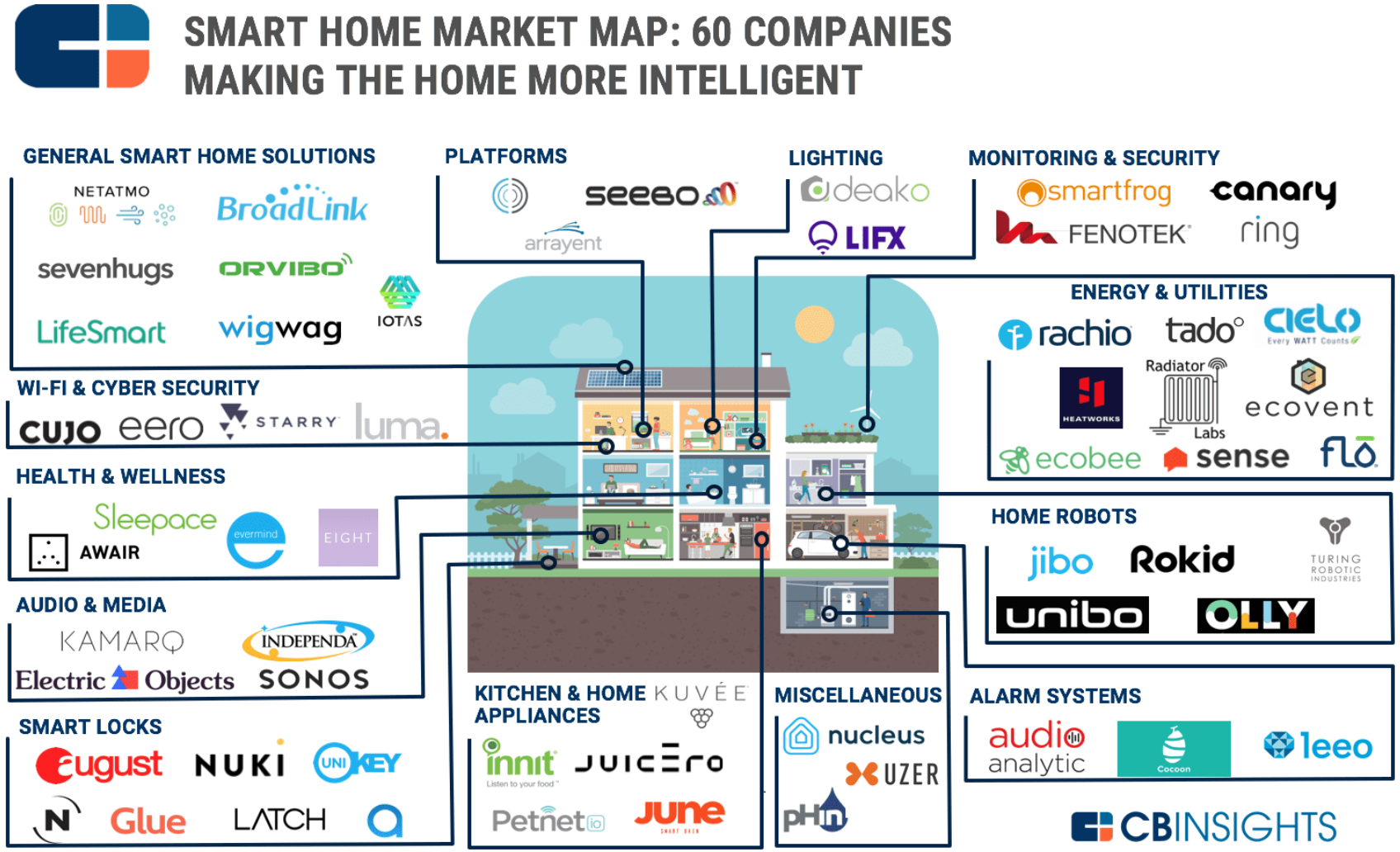
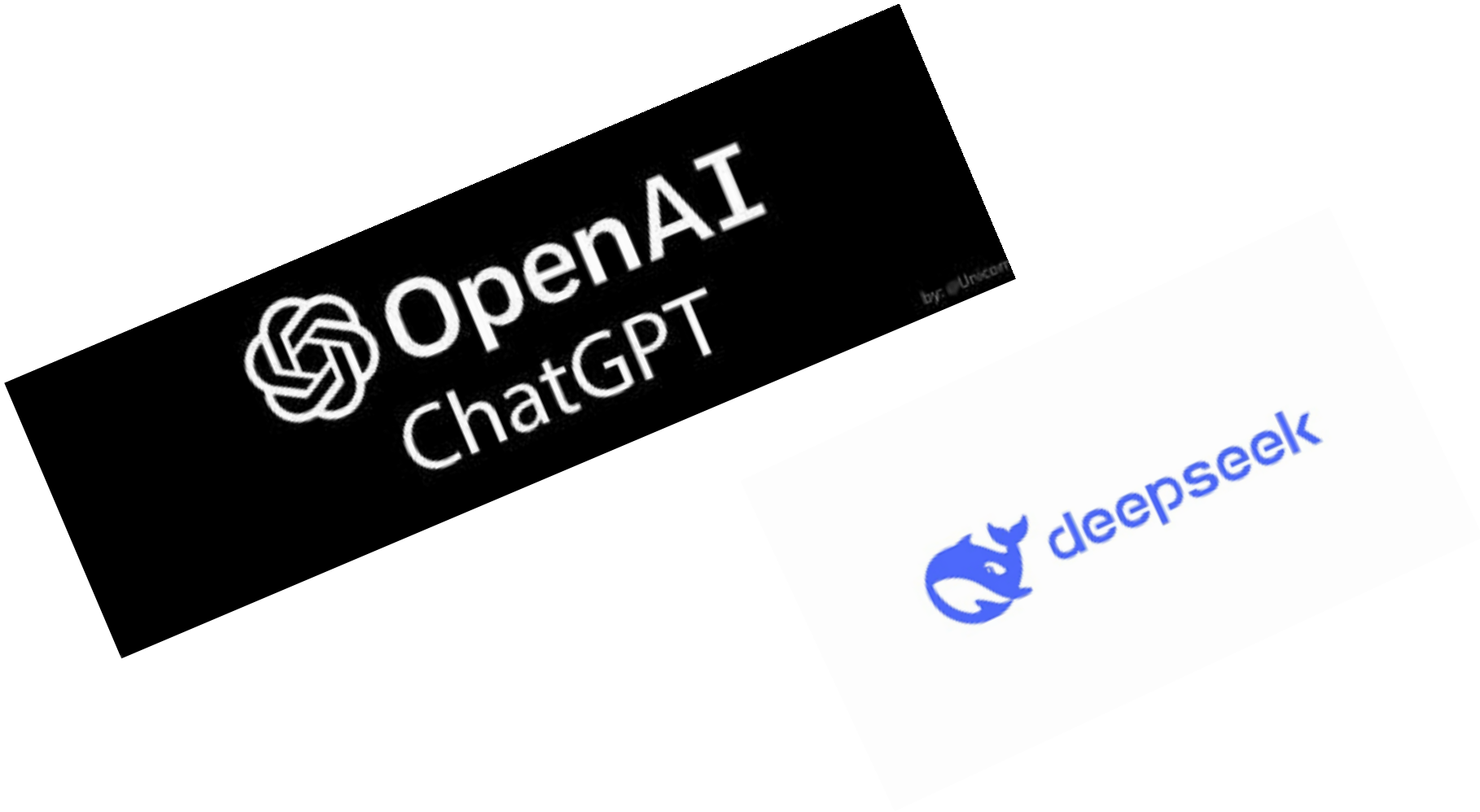
On the top of everything...
The Digital Disruption & ChatGPT arrived...

Digital ecosystems & platforms will play a key role



OpenAI will play an even Greater Role



Key Takeaways

- ✓ Innovation is not R&D
- ✓ There are a lot of types of Innovation
- ✓ Not all Innovations Have the Same Impact on the World
- ✓ Organizations Struggle to Recognize Threats

In 1982, Colgate came up with the weirdest brand extension idea.

BlackBerry was leading the mobile phone market in the early 2000s.
Their key differentiation was the ability to send emails and messages on the go. Its technology, however, quickly became obsolete with the rise of Android and iOS smartphones.
The failed brand stopped manufacturing phones in 2017.