

# IO3 – S1

# INNOVATION MANAGEMENT



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# KEY POINTS FOR THE TRAINERS

## Aims to the module:

- Understand what is “innovation” and how to use it to create business opportunities
- Understand the different types of innovation
- How to understand the context in which you are doing business
- How to understand trends and how they might affect your business model
- Understand real life examples of companies who have innovated

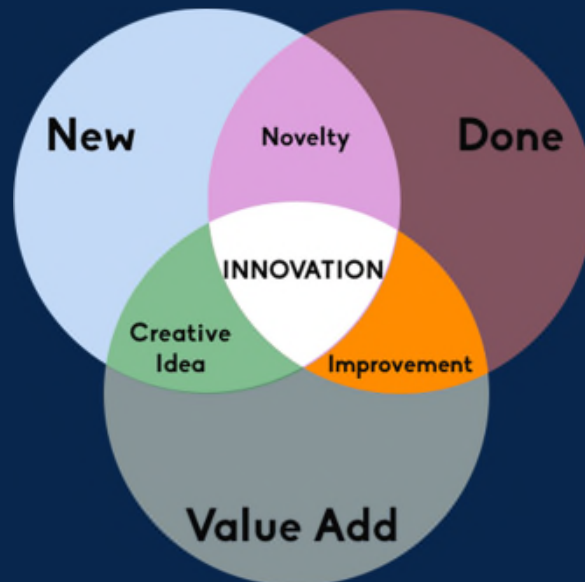
## Notes to trainer:

- Please take the opportunity to add or adjust any of the content to better focus on the needs of your particular group
- There are speaker notes and explanations under each slide
- The module contains a practical session in which learners can look at trends that might affect their business idea
- At the end, there is a glossary of all abbreviations and terms used in the PowerPoint

# INNOVATION CONTEXT

# Innovation

- **(Oslo's Manual):** "Innovation is the introduction to the market of a new or substantially improved product (good or service), of a process, of a new marketing method or of a new organizational method, in the internal practices of the company, in the organization of the workplace or in foreign relations."
- **Practical Definition:** To innovate, normally happens when we are creating a new product, service or process for our company (if it is new to the market will be even more innovative). AND INTRODUCE IT TO THE MARKET.



## INNOVACIÓN (COTEC):

- "Innovation is any **change** (not only technological) based on **knowledge** (not only scientific) that **generates value** (not only economic)"

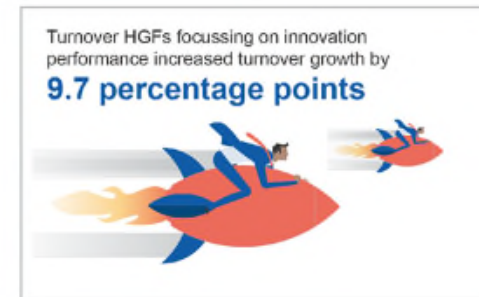
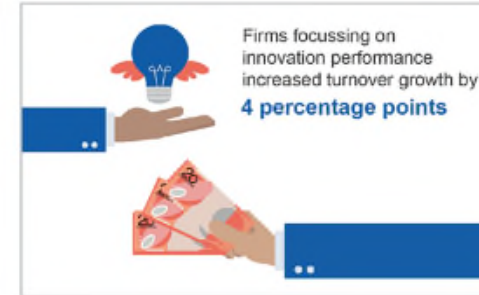
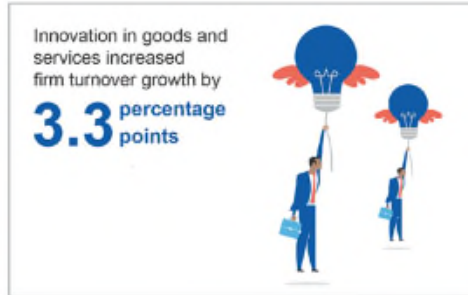


# Innovation types



# Why innovate?

## The impact of innovation on firm growth



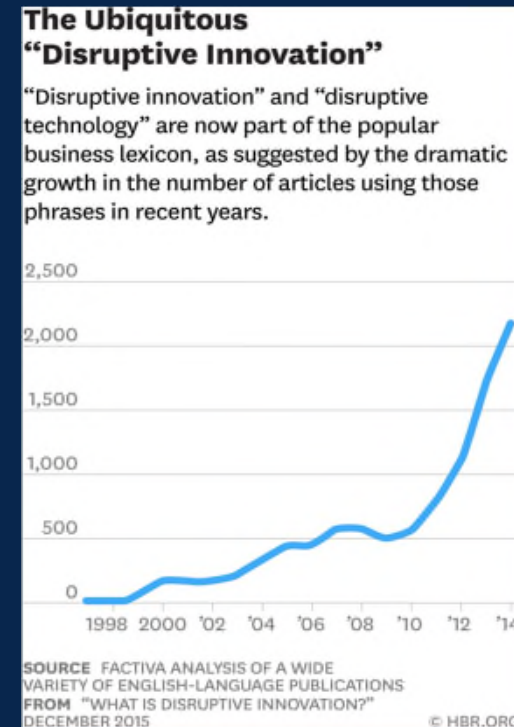
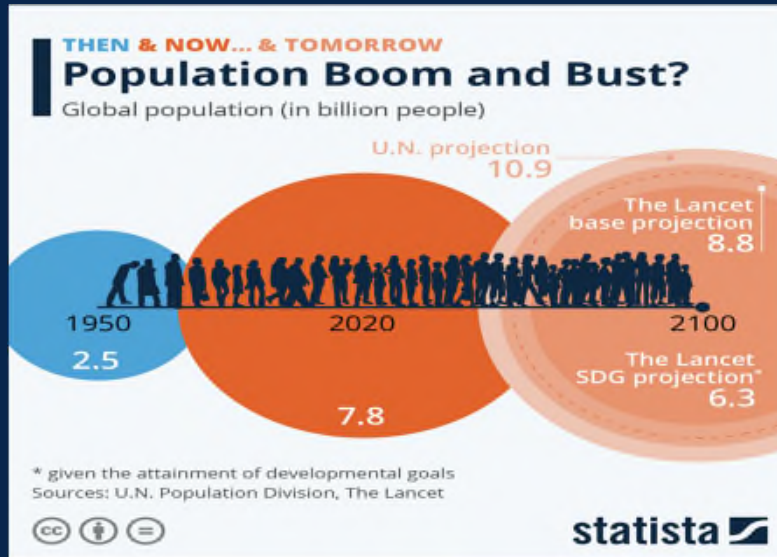
For more information on the report visit [www.industry.gov.au/OCE](http://www.industry.gov.au/OCE)

Sources (left to right): 1) Department of Industry, Innovation and Science (2016) Australian Innovation System Report 2015, Office of the Chief Economist, Canberra, p. 30-31; 2-6) ABS (2017) Characteristics of Australian Business, 2015-16, cat. no. 8167.0; ABS (2017) Business Longitudinal Analysis Data Environment (BLADE), Analysis by Department of Industry, Innovation and Science

# MEGATRENDS

# Innovation are accelerating

## The world population multiplies

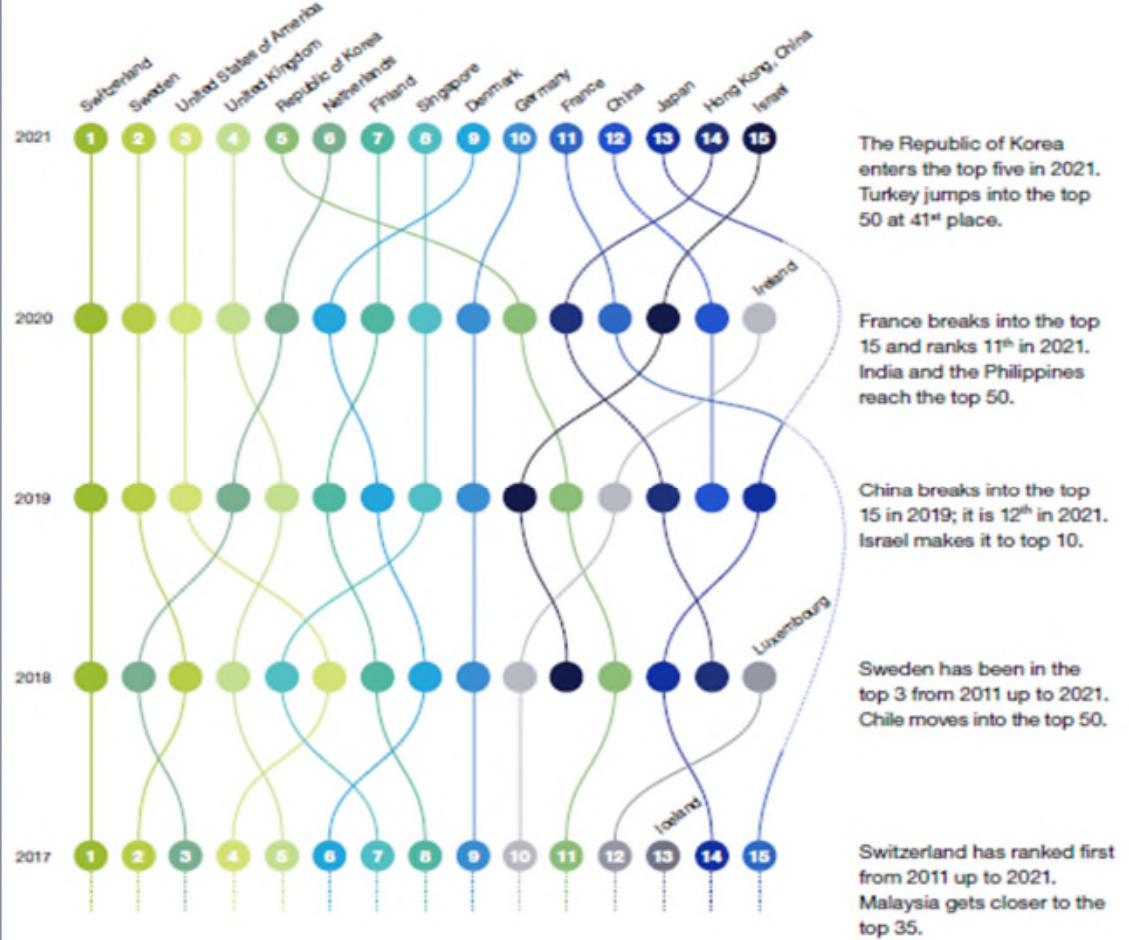


## The population is becoming more educated



- Increased access to information
- The time for the adoption of technologies is getting shorter
- Computing speed doubles every two years
- Investment in R&D is increasing faster

Movement in the GII top 15, 2017–2021



Source: Global Innovation Index Database, WIPO, 2021.

Note: Year-on-year comparisons of the GII ranks are influenced by changes in the GII model and data availability.

# And all these changes in a VUCA context...



Low Volatility	High Volatility
Low Uncertainty	High Uncertainty
Low Complexity	High Complexity
Low Ambiguity	High Ambiguity

With great global challenges to face...



# SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

<b>1</b> NO POVERTY Icon of a family consisting of two adults and two children.	<b>2</b> ZERO HUNGER Icon of a white bowl with steam rising from it.	<b>3</b> GOOD HEALTH AND WELL-BEING Icon of a white heart rate monitor line.	<b>4</b> QUALITY EDUCATION Icon of an open book and a pencil.	<b>5</b> GENDER EQUALITY Icon of a female symbol with an equals sign inside.	<b>6</b> CLEAN WATER AND SANITATION Icon of a water tap with a single drop of water.
<b>7</b> AFFORDABLE AND CLEAN ENERGY Icon of a sun with a power symbol in the center.	<b>8</b> DECENT WORK AND ECONOMIC GROWTH Icon of a bar chart with an upward-pointing arrow.	<b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE Icon of three stacked blocks.	<b>10</b> REDUCED INEQUALITIES Icon of an equals sign inside a circle.	<b>11</b> SUSTAINABLE CITIES AND COMMUNITIES Icon of several buildings of varying heights.	<b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION Icon of a circular arrow representing a cycle.
<b>13</b> CLIMATE ACTION Icon of an eye with a globe as the pupil.	<b>14</b> LIFE BELOW WATER Icon of waves and a fish.	<b>15</b> LIFE ON LAND Icon of a tree and two birds flying.	<b>16</b> PEACE, JUSTICE AND STRONG INSTITUTIONS Icon of a dove and a scale of justice.	<b>17</b> PARTNERSHIPS FOR THE GOALS Icon of four interlocking circles.	The Sustainable Development Goals logo, featuring the United Nations logo and the text 'SUSTAINABLE DEVELOPMENT GOALS'.

# With innovations that address them...

## Sustainability



Industry, Powered By The Sun  
Heliogen HeliHeat



The Future Of Farming  
FarmWise Titan FT-3S



Eco-Friendly Growth  
Pivot Bio PROVEN

## Social Good



A Faster First Response  
Flare



The Sustainable Smartphone  
Fairphone 3+



Water, Water Anywhere  
Skysource WEDEW

## Outdoors



Safer Cycling  
Bantzger WaveCel



A Biodegradable Grill  
CasusGrill



The Ultimate Cooler  
YETI V Series

## Medical Care



A Gentler Exam  
Nella NuSpec Reusable Vaginal Speculum by Ceek Women's Health



Faster Development  
mRNA Vaccines



A Bedsore Solution  
Provia SEM Scanner by Bruin Biometrics



A Personal Bubble  
Under the Weather IntubationPod



At-Home Sampling  
OraSure OMNIgene Oral



The Air Cleanser  
Carrier OptiClean

<https://time.com/collection/best-inventions-2020/>

# And disruptive and enabling technologies

## Technology trends and underlying technologies

### Industry-agnostic trends



#### 1 Next-level process automation...

Industrial IoT<sup>1</sup>  
Robots/cobots<sup>2</sup>/RPA<sup>3</sup>



#### ... and process virtualization

Digital twins  
3-D/4-D printing



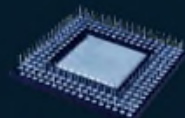
#### 2 Future of connectivity

5G and IoT connectivity



#### 3 Distributed infrastructure

Cloud and edge computing



#### 4 Next-generation computing

Quantum computing  
Neuromorphic chips (ASICs<sup>4</sup>)



#### 5 Applied AI

Computer vision, natural-language processing, and speech technology



#### 6 Future of programming

Software 2.0



#### 7 Trust architecture

Zero-trust security  
Blockchain

### Industry-specific trends

8



#### Bio Revolution

Biomolecules/"-omics"/ biosystems

Biomachines/biocomputing/augmentation

9



#### Next-generation materials

Nanomaterials, graphene and 2-D materials, molybdenum disulfide nanoparticles

10



#### Future of clean technologies

Nuclear fusion  
Smart distribution/metering  
Battery/battery storage  
Carbon-neutral energy generation

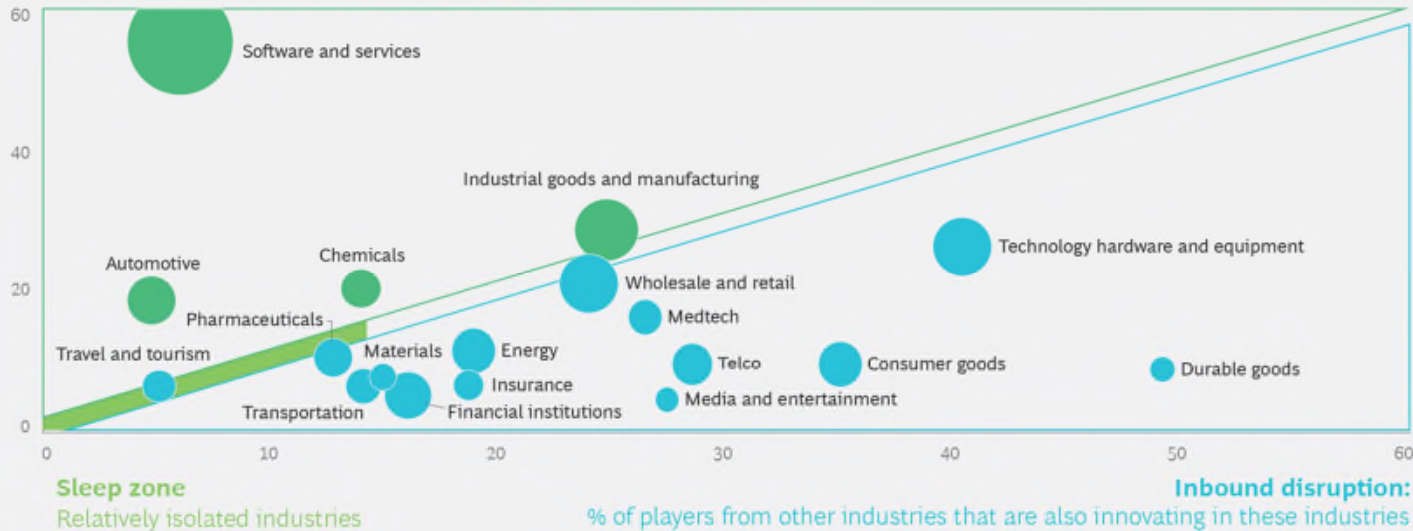
<https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/the-top-trends-in-tech>

# That facilitate disruptive innovation

EXHIBIT 3 | Most Boundary Breakers Come from Software, Automotive, Industrial Goods, and Chemicals

**Outbound disruption:**

% of players in industry that are also innovating in other industries



The majority of companies that disrupt come from the Software, Automotive, Industry and Manufacturing, and Chemical sectors.

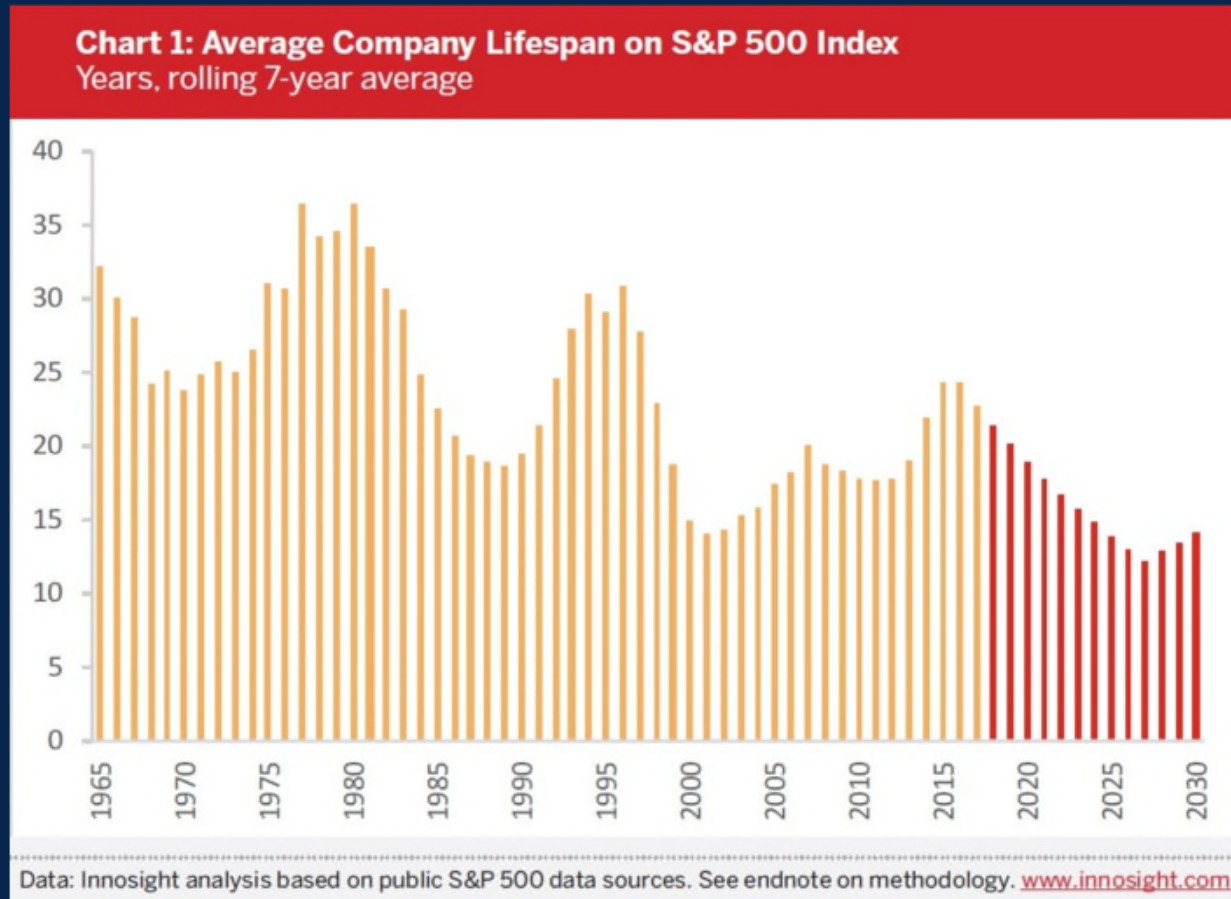
Sources: BCG Global Innovation Survey; BCG i2i team.

Note: The percentages are based on an analysis of the share of votes for players in each industry that are either “inbound” (votes in industry going to players primarily outside own industry) or “outbound” (votes going to players primarily in own industry, received from other industries). Companies playing offense tend to see significantly higher TSR (three-year horizon).

<https://www.bcg.com/publications/2020/most-innovative-companies/successful-innovation>

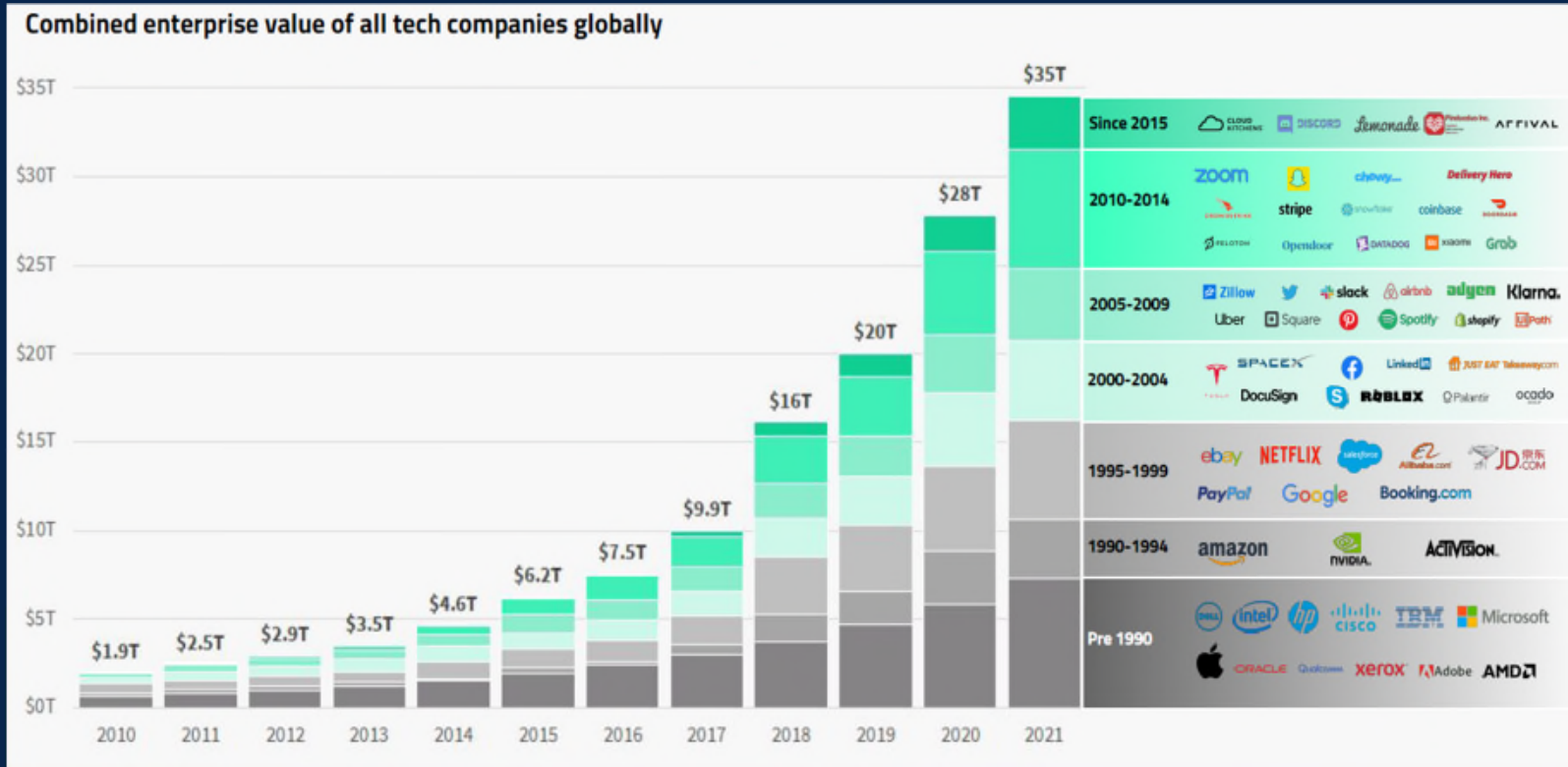
# WHAT ARE THIS MEGATRENDS CAUSING?

# The life cycle of leading companies is shortened





# Many new players emerge



New startups are creating as much value as older ones, if not more.

<https://dealroom.co/reports/corporate-innovation-in-the-entrepreneurial-age>

# Many new players emerge



## Global Unicorn Club

842 Private Companies Valued At \$1B+

CBINSIGHTS

### Artificial Intelligence



### Auto & Transportation



### Consumer & Retail



### Data management & analytics



### Cybersecurity



### E-commerce & direct-to-consumer



### Fintech



## Fintech



### Hardware



### Internet software & security



### Supply chain, logistics, & delivery



### Health



### Mobile & telecommunications



### Travel

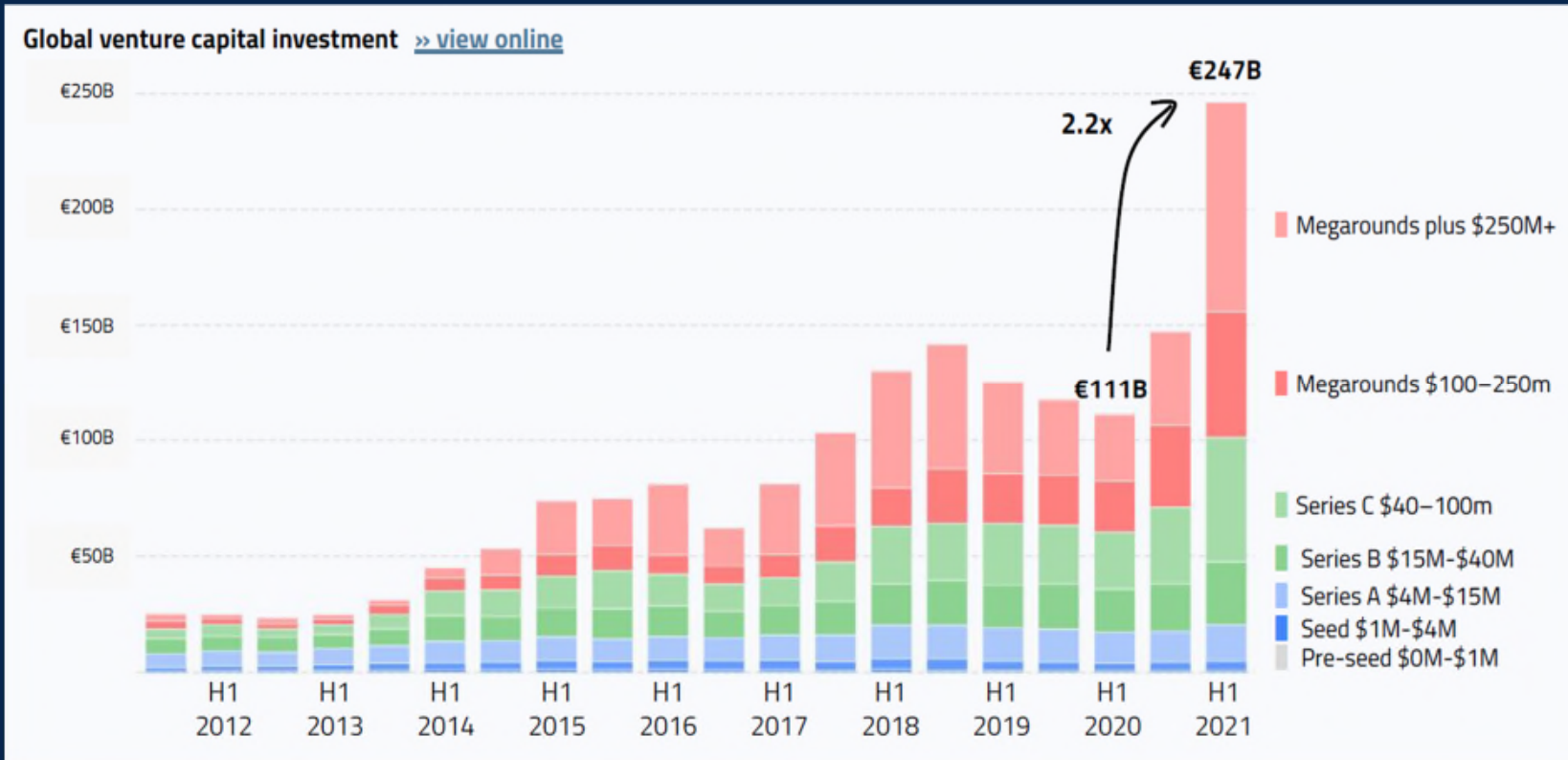


### Other



<https://www.cbinsights.com/research/unicorn-startup-market-map/>

# That feed on a booming venture capital



The volume of investment in startups was doubled in 2021

<https://dealroom.co/reports/corporate-innovation-in-the-entrepreneurial-age>

# The innovator's dilemma

## - THE - INNOVATOR'S DILEMMA

By  
**CLAYTON  
CHRISTENSEN**

**BS BOARDSTUDIOS**

**! SUCCESSFUL COMPANIES CAN FAIL in the FACE of DISRUPTIVE INNOVATION**

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**ENCOURAGEMENT FOR STARTUPS**

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1 SUSTAINING VS DISRUPTIVE  
2 DIFFICULT TO ADOPT  
3 WHAT DOES IT ALL MEAN } *Agenda*

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**SUSTAINING vs DISRUPTIVE**


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**SUSTAINING INNOVATION**

\* COMPANY IMPROVES PRODUCT'S PERFORMANCE BASED ON FEEDBACK FROM CUSTOMERS. 

\* USUALLY ABOUT REDUCING DEFECTS & MAKING SOMETHING FASTER OR MORE

**POWERFUL**



<https://bookvideoclub.com/the-innovators-dilemma-by-clayton-christensen-video-book-summary/>

Winners	Losers
 <p><b>Innovation:</b> Pioneered streaming video services <b>Result:</b> \$6B revenue (2014)</p>	 <p><b>Mistake:</b> Didn't adapt to streaming video <b>Result:</b> bankrupt (2010)</p>
 <p><b>Innovation:</b> Pioneered digital ride-sharing <b>Result:</b> \$10B revenue (2015)</p>	 <p><b>Mistake:</b> Didn't adapt to digital photography <b>Result:</b> bankrupt (2012)</p>
 <p><b>Innovation:</b> Pioneered eCommerce platforms <b>Result:</b> \$89B revenue (2014)</p>	 <p><b>Mistake:</b> Didn't adapt to eCommerce <b>Result:</b> bankrupt (2011)</p>



**EXPLORE + EXPLOIT**

<p>Your <b>exploration culture</b> cultivates the creation, discovery, validation, and acceleration of completely new ideas that are foreign to an organization.</p>	<p>Your <b>exploitation culture</b> cherishes the management, systematic improvement, and growth of existing businesses.</p>
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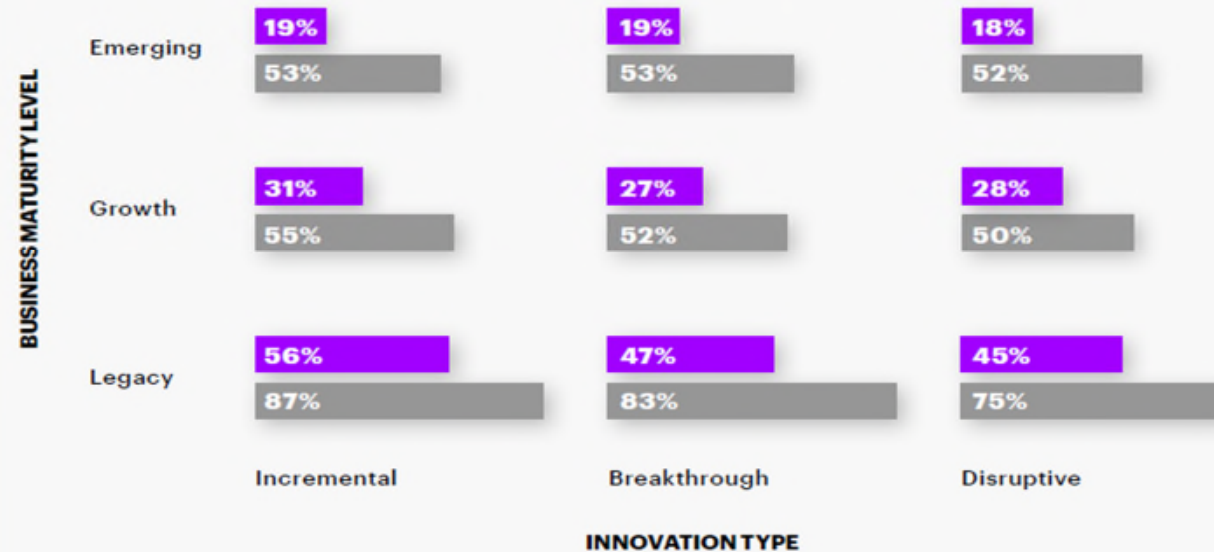
The Invincible Company. Strategyzer

# INNOVATION MODELS (OF REAL COMPANIES)

# How are companies that are committed to innovation reacting?

## Companies are increasing innovation adoption across their business portfolios

% of respondents who expect to apply each type of innovation to a "Large extent" or "Very large extent" "today" vs "in the next 5 years"



■ Current ■ Next 5 years

Sample N=1,090  
Source: Accenture Portfolio Innovation Survey, 2019

# How are companies that are committed to innovation reacting?

## ACCENTURE INNOVATION ARCHITECTURE



### Inspiration

1. Put innovation at the center of corporate strategy
2. Actively communicate the innovation agenda to employees and the investor community
3. Actively build a culture of innovation

### Ideation

4. Everyone generates ideas to improve existing offerings
5. A diverse team of experts generates ideas for brand new offerings
6. Identify disruptive ideas with the help of tech partners

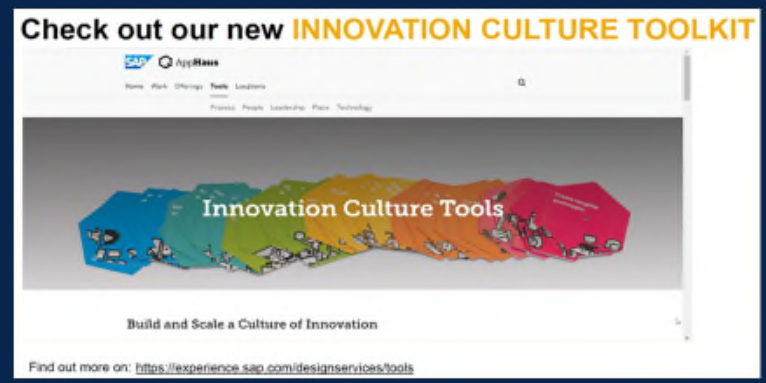
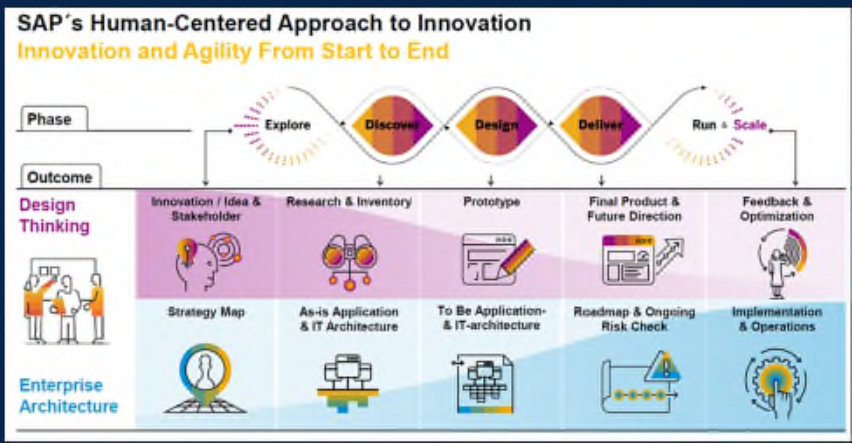
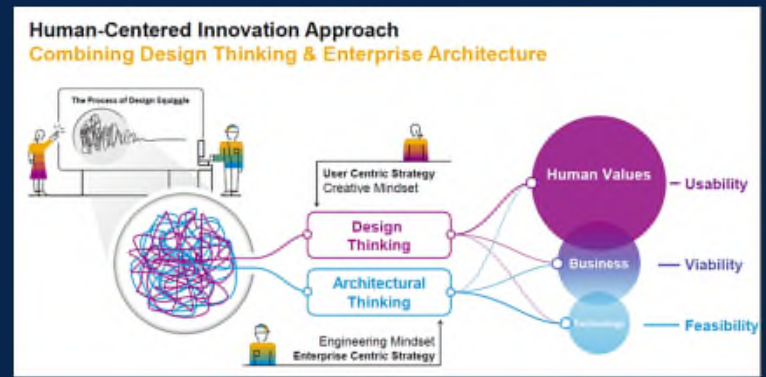
### Experimentation

7. Experimentation investments are made as part of the budgeting lifecycle
8. Experimentation investments are funded gradually
9. Experiments are conducted by an innovation lab/digital factory

### Scaling

10. Scale with technology partners
11. Scale with talent partners
12. Scale through an innovation lab/digital factory

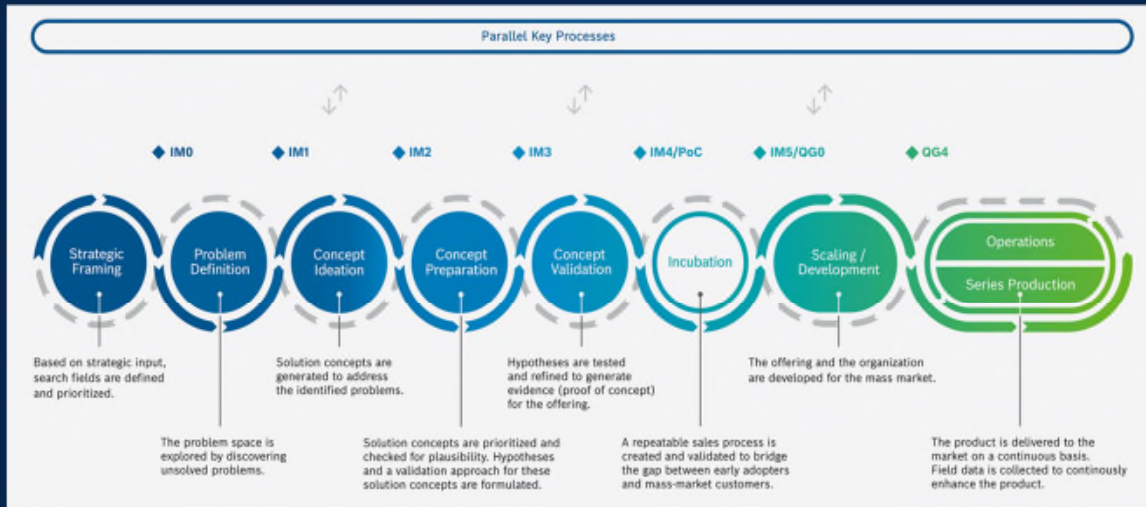
# How are companies that are committed to innovation reacting?



[https://assets.dm.ux.sap.com/webinars/sap-user-groups-k4u/pdfs/210421\\_sap\\_proven\\_innovation\\_methodology.pdf](https://assets.dm.ux.sap.com/webinars/sap-user-groups-k4u/pdfs/210421_sap_proven_innovation_methodology.pdf)



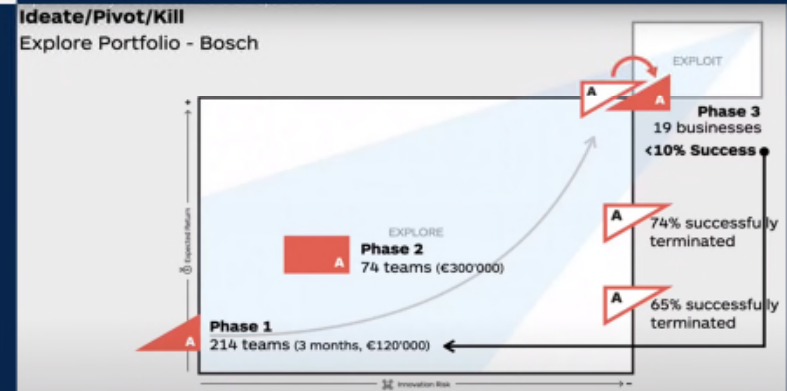
# How are companies that are committed to innovation reacting?



<https://www.bosch-innovation-consulting.com/our-services/innovation-process-design/>



ACCIO. Exponential Day 3: Local leaders to disrupt the world  
 ([https://www.accio.gencat.cat/ca/activitats/g-rans-actes/exponential-day/2021?utm\\_source=POST&utm\\_medium=21-13-boto&utm\\_campaign=exponential-day-3](https://www.accio.gencat.cat/ca/activitats/g-rans-actes/exponential-day/2021?utm_source=POST&utm_medium=21-13-boto&utm_campaign=exponential-day-3))



# QUESTIONS...



A hand in a white sleeve is shown drawing a lightbulb with a pen. The lightbulb is part of a larger line drawing that includes a jagged line graph and a vertical arrow pointing upwards. At the bottom of the image, there is a large white triangle with an orange triangle at its base. The text "PRACTICAL SESSION" is written in white, bold, uppercase letters across the center of the image.

# PRACTICAL SESSION

# Mapping trends identification

Reflect on the current business model of your company, and your customers and their needs

- Which **products** of your company do you see most threatened?
- What changes in **customers** can threaten us (Trends, Priorities, Journey, ...)
- What **technologies** will impact your business
- What changes do you sense in your **Sector** (New players, Legislation, ...)
- What other **relevant changes** and/or **trends** are taking place (outside your sector) (business models, technologies, society, covid, etc.)











## HORIZONS

- Short term (It is happening or will happen in 1 year)
- In the medium term (in more than 1 year)
- Long-term (over 5 years)

# Mapping Trends - Identification

1. Reflect on the current business model of your company, and your customers and their needs

2. About the following elements, in which you identify threats or relevant changes / disruptions

	SHORT TERM	MEDIUM TERM	LONG-TERM		
<b>Products and services</b> <ul style="list-style-type: none"> <li>Downhill</li> <li>Poorly differentiated</li> <li>Obsolete</li> <li>Diminishing returns</li> </ul>					
<b>Clients/Trends:</b> <ul style="list-style-type: none"> <li>Trends</li> <li>New Priorities</li> <li>Behaviors</li> <li>Journey</li> </ul>					
<b>Technologies and Capabilities</b> <ul style="list-style-type: none"> <li>Features</li> <li>Cost</li> <li>Data</li> <li>Skills</li> </ul>					
<b>Industry/Competitors</b> <ul style="list-style-type: none"> <li>New players</li> <li>Integration</li> <li>Globalization</li> <li>Geopolitics</li> </ul>					
<b>Megatrends</b> <ul style="list-style-type: none"> <li>Other sectors</li> <li>Technologies</li> <li>Society</li> <li>Covid</li> </ul>					
					

# Mapping Trends - Prioritization

	HOY	CORTO PLAZO	MEDIO PLAZO	LARGO PLAZO
<b>Productos y Servicios</b> <ul style="list-style-type: none"> <li>En declive</li> <li>Poco diferenciados</li> <li>Obsoletos</li> <li>Rentabilidad decreciente</li> </ul>				
<b>Clientes/Tendencias:</b> <ul style="list-style-type: none"> <li>Prioridades nuevas</li> <li>Tendencias</li> <li>Comportamientos</li> <li>Journey</li> <li>Covid</li> </ul>				
<b>Tecnologías</b> <ul style="list-style-type: none"> <li>Funcionalidades</li> <li>Venta / Journey</li> <li>Coste</li> <li>Data</li> </ul>			IA	
<b>Sector/Competidores</b> <ul style="list-style-type: none"> <li>Nuevos players</li> <li>Integración</li> <li>Globalización</li> <li>Geopolítica</li> <li>Covid</li> <li>GANDALF</li> </ul>				Amazon

# THANKS



# GLOSSARY OF TERMS

Open innovation: Open innovation is a term coined by Professor Henry Chesbrough in 2003 in his book "Open innovation: the new imperative for creating and profiting from technology". An innovation strategy is proposed through which companies relate and cooperate with their external environment.

Road Mapping: A project roadmap is a high-level graphical overview of the project's objectives and deliverables presented in a timeline. Unlike the project plan, where the details are specified, the roadmap must be simple and without minutiae. This makes the project roadmap a useful project management tool for managing stakeholder expectations, as well as for communicating plans and coordinating resources with other teams.

R&D labs: Research and development laboratories

VC model: Venture Capital Model; Venture capital refers to all those investments through actions that serve to finance small or medium-sized companies, normally startups (companies that have very few years of life and are in their first temporary phase).





# GLOSSARY OF TERMS

Innovation labs: Innovation happens when you generate value from ideas. Innovation labs, then, are a framework for creatively exploring new ideas to achieve different outcomes.

HGFs: High Growth Firms.

SDG: Sustainable Development Goals.

Disruptive innovation/technology: Disruptive innovation refers to innovations and technologies that make expensive or sophisticated products and services accessible and more affordable to a broader market. Disruptive innovation refers to the use of technology that upsets a structure, as opposed to "disruptive technology", which refers to the technology itself. Amazon, launched as an online bookstore in the mid-1990s, is an example of disruptive innovation.

Incremental innovation: Incremental innovation is a series of small improvements or upgrades made to a company's existing products, services, processes or methods. The changes implemented through incremental innovation are usually focused on improving an existing product's development efficiency, productivity and competitive differentiation.



# GLOSSARY OF TERMS

IoT: The term IoT, or Internet of Things, refers to the collective network of connected devices and the technology that facilitates communication between devices and the cloud, as well as between the devices themselves.

AI: Artificial Intelligence : Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

Unicorn: The term unicorn refers to a privately held startup company with a value of over \$1 billion. It is commonly used in the venture capital industry.