



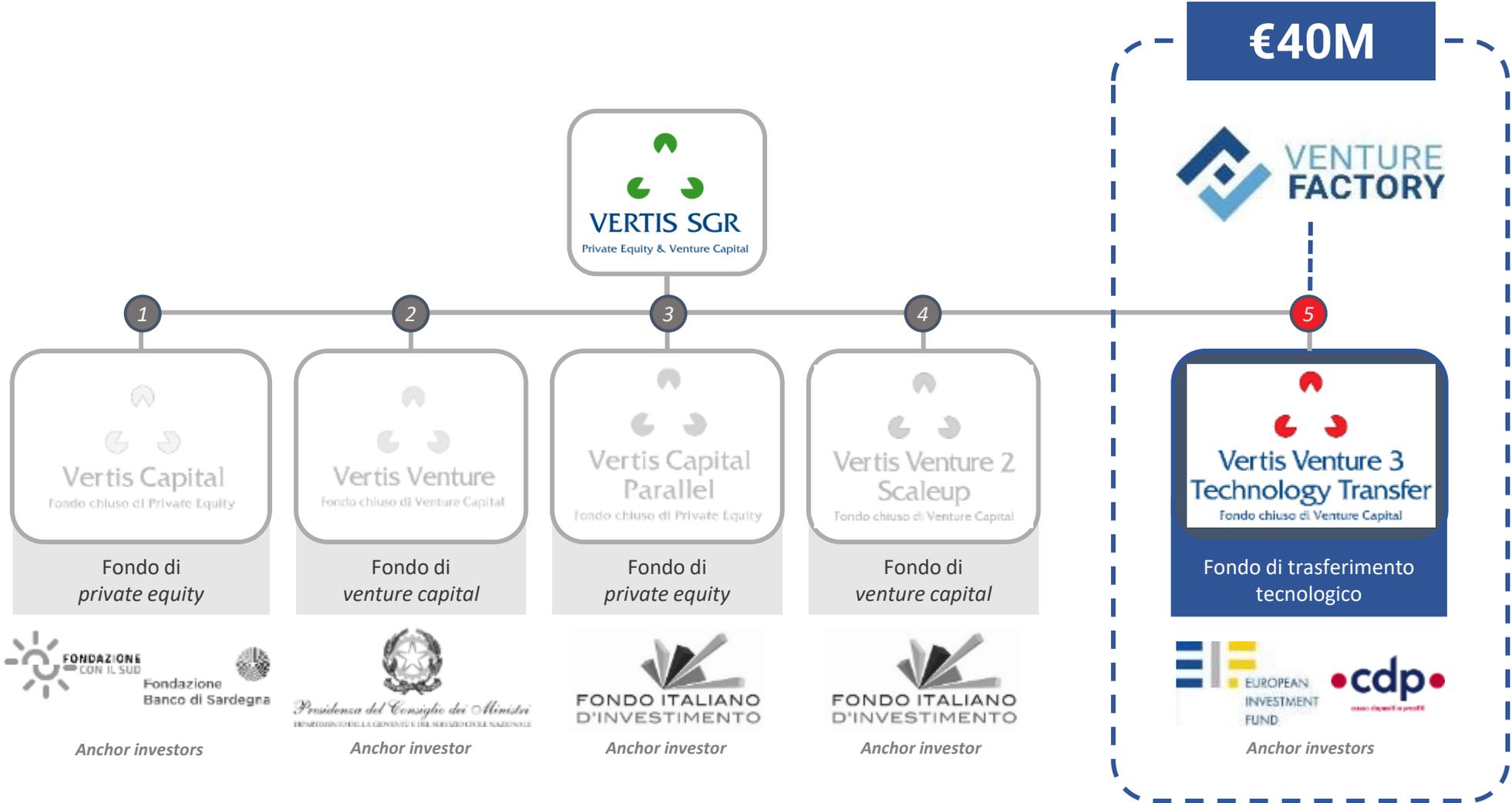
# Deep Tech financing: Venture Factory

We exploit deep-tech opportunities, translating research into business innovation

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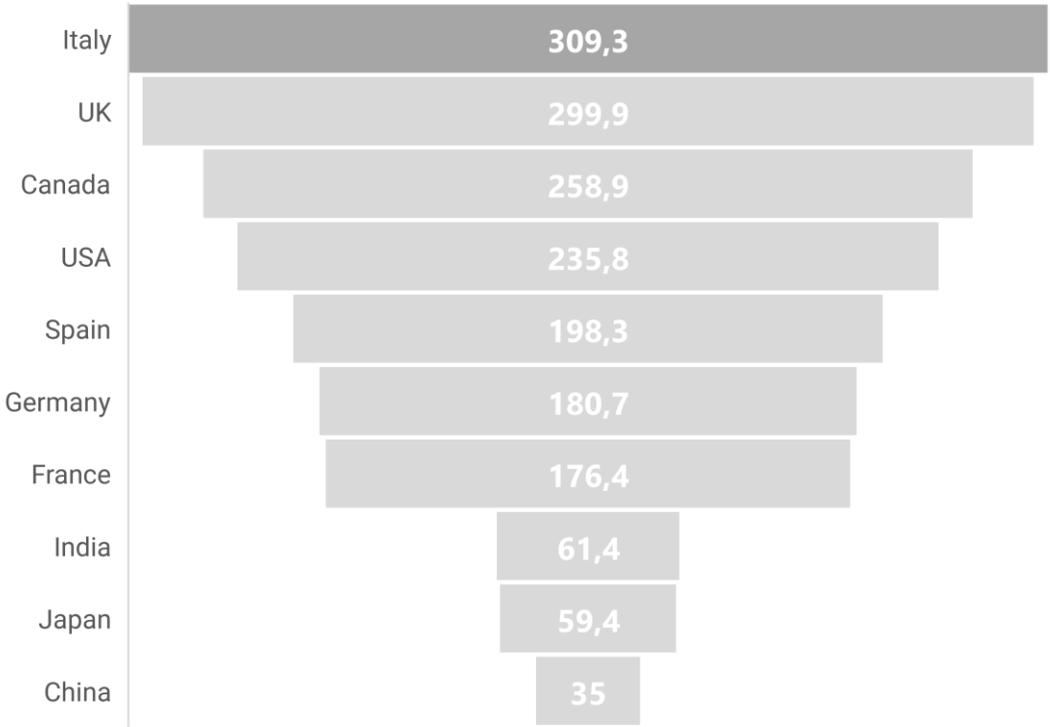
IEEE Melecon 2020

Vertis Venture 3 Technology Transfer fund is the first launched by the Itatech Platform with **Euro 40M**, is managed by Vertis SGR and by Venture Factory as its exclusive advisor.



# Italian research system is an opportunity for global corporations: national institutions are one of the richest and unexploited global deposit of research findings

## Italy is a global research excellence in all fields ...



Number of citations per researcher, 1996-2017  
Source: The European House – Ambrosetti based on OECD and Scimago data, 2019

## ... including physics and engineering

- #6 High Energy Physics
- #6 Industrial Engineering
- #7 Electronic Engineering
- #8 Aerospace Engineering
- #10 Biomedical Engineering

H-index, 2017  
Source: our elaboration on Scimago data

# Italy represents a perfect place where to create and growth B2B deep-tech startups

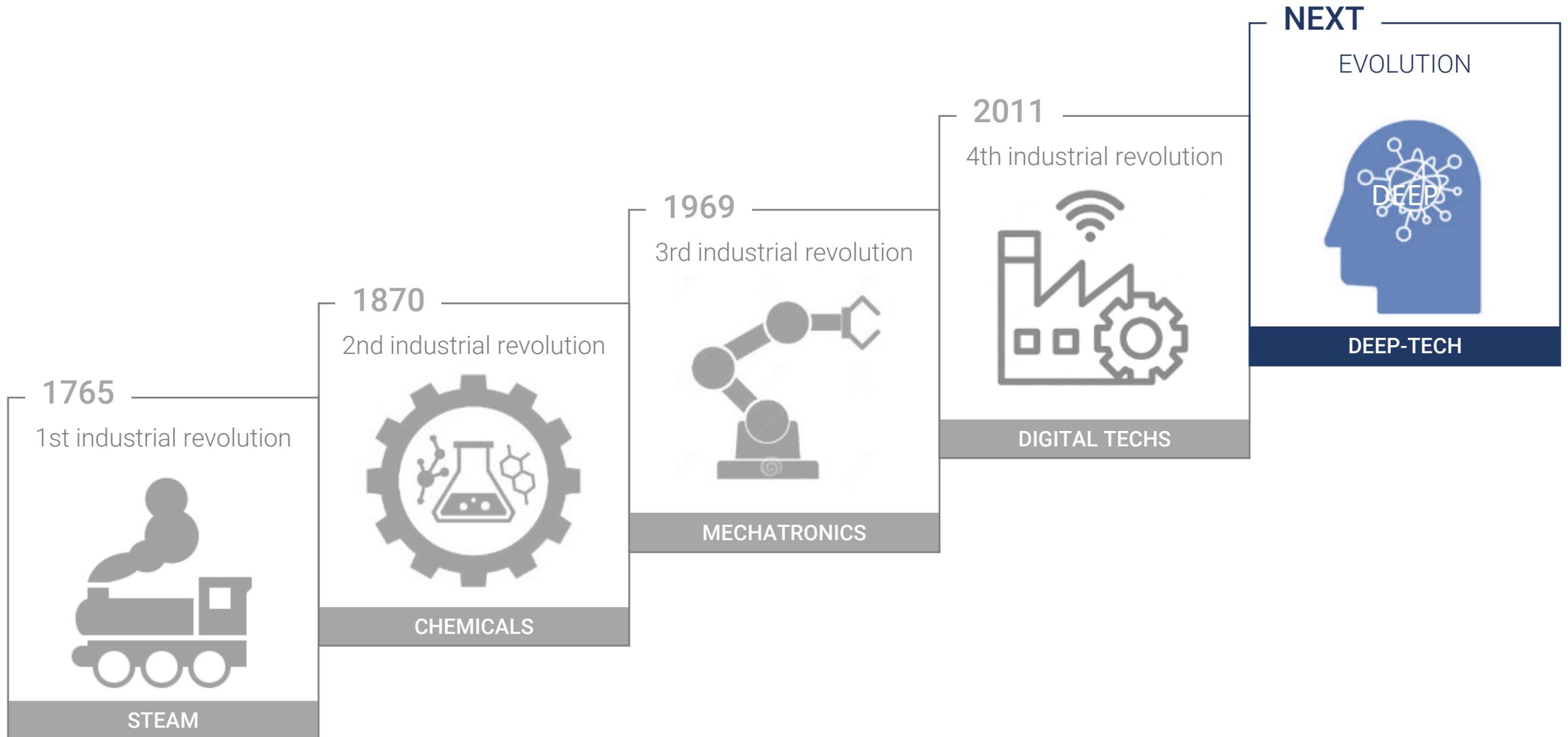


Source: OECD

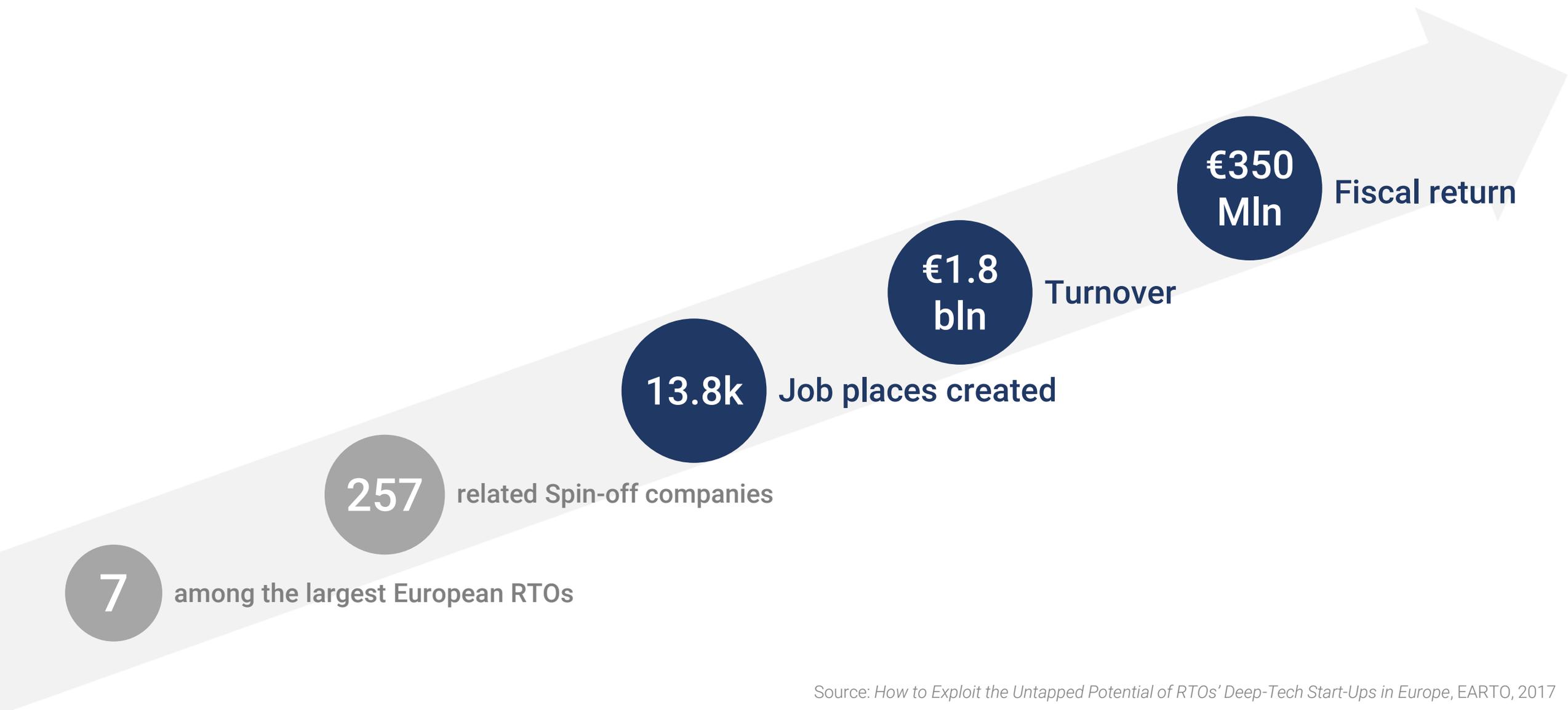


Source: Startup Nation Scoreboard 2016, European Digital Forum

# Deep-Tech is the evolution of the digital era and sets the base for the next industrial revolution

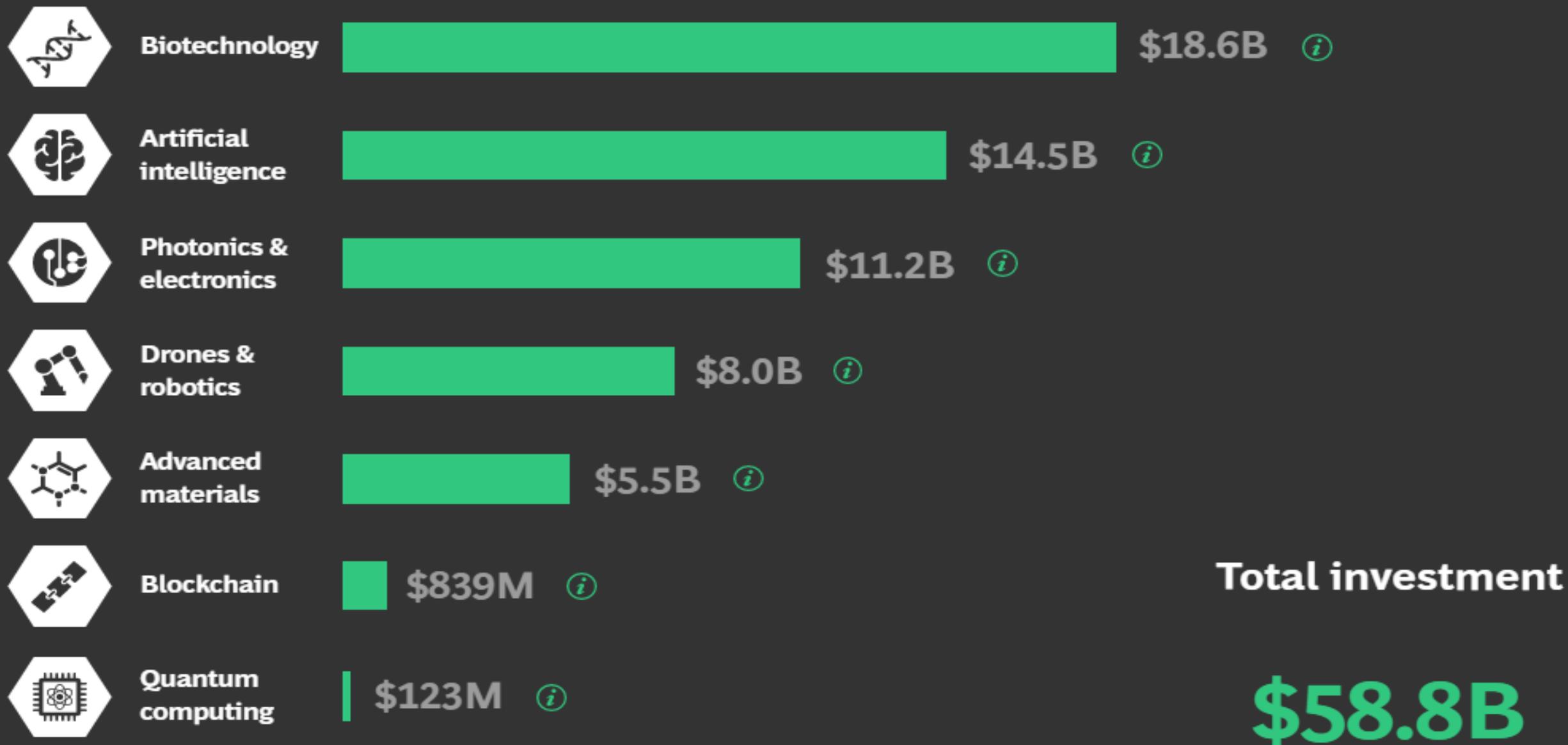


# The socio-economic impact of Deep-Tech startups in Europe is significant



Source: *How to Exploit the Untapped Potential of RTOs' Deep-Tech Start-Ups in Europe*, EARTO, 2017

# Nearly \$60 Billion Invested in Deep Tech's Fastest-Growing Sectors in 2018



# The American Digital startup model significantly differs from the European Deep-Tech one and a different approach should be adopted for European countries



## US-type Digital Startups (i.e. Unicorns)



## EU-type Deep Tech Startups (i.e. RTOs' Spin-offs\*)

	US-type Digital Startups (i.e. Unicorns)	EU-type Deep Tech Startups (i.e. RTOs' Spin-offs*)
<b>Technology</b>	No own / commonly available	Deep tech, protected / hard to reproduce
<b>Clients</b>	B2C	B2B
<b>Business approach</b>	<ul style="list-style-type: none"> <li>• Leverage on business model</li> <li>• Service based</li> <li>• Disrupting existing value chains</li> </ul>	<ul style="list-style-type: none"> <li>• Leverage on technology</li> <li>• Technology based</li> <li>• Connects existing value chains</li> </ul>
<b>Pre-foundation needs</b>	Very low resources	Significant resources
<b>Time to market</b>	Almost immediate	3 to 5 years for proof of concept / minimum viable product
<b>Growth model</b>	<ul style="list-style-type: none"> <li>• Exponential / fast growth</li> <li>• Resource intensive</li> <li>• Achieve global leadership</li> </ul>	<ul style="list-style-type: none"> <li>• Linear / controlled growth</li> <li>• Linked to customers acquisition and revenues</li> <li>• Targeted approach</li> </ul>
<b>Societal impact</b>	Short / medium term with disruption	Long term / sustaining industry

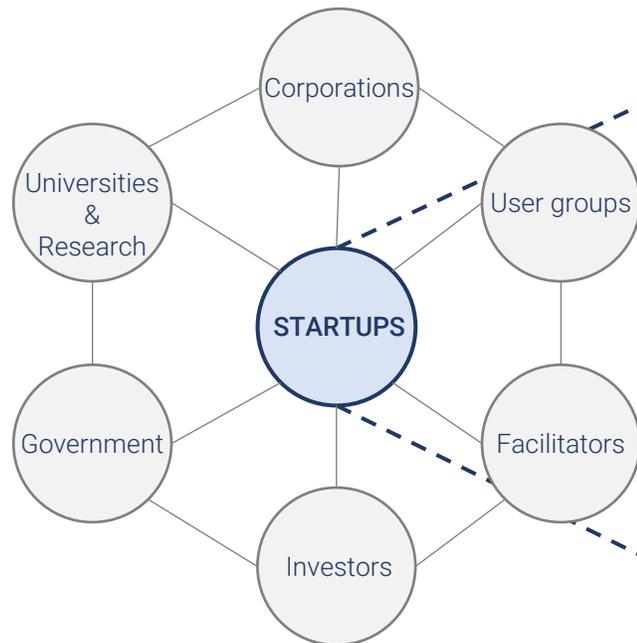
Source: our elaboration based on EARTO 2017 analysis

\* RTO – Research and Technology Organisation

# Very specific start-ups are the heart of the Deep-Tech revolution: they would grow and create value if supported by five dimensions, and not by money only

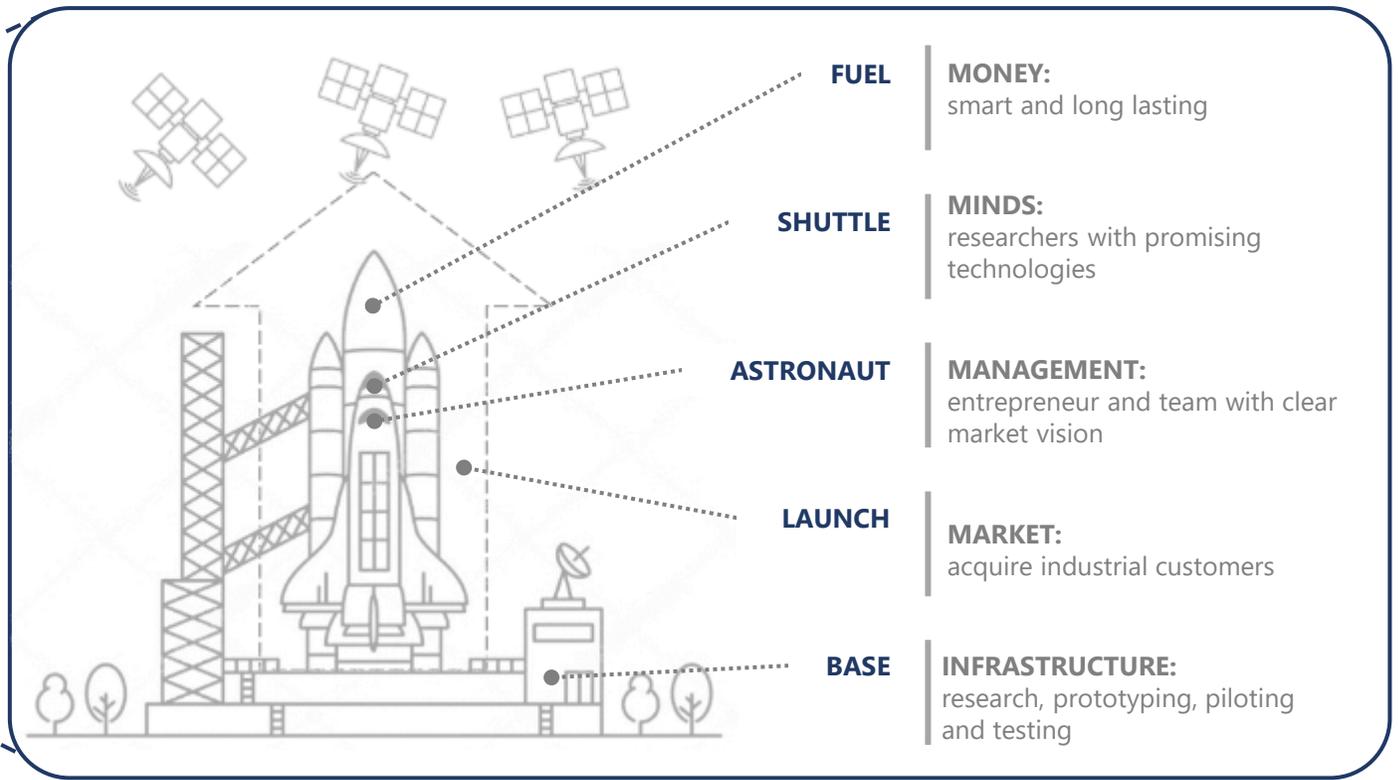
The Deep/Tech ecosystem pivots around very specific start-ups...

Source: Hello Tomorrow (2017)



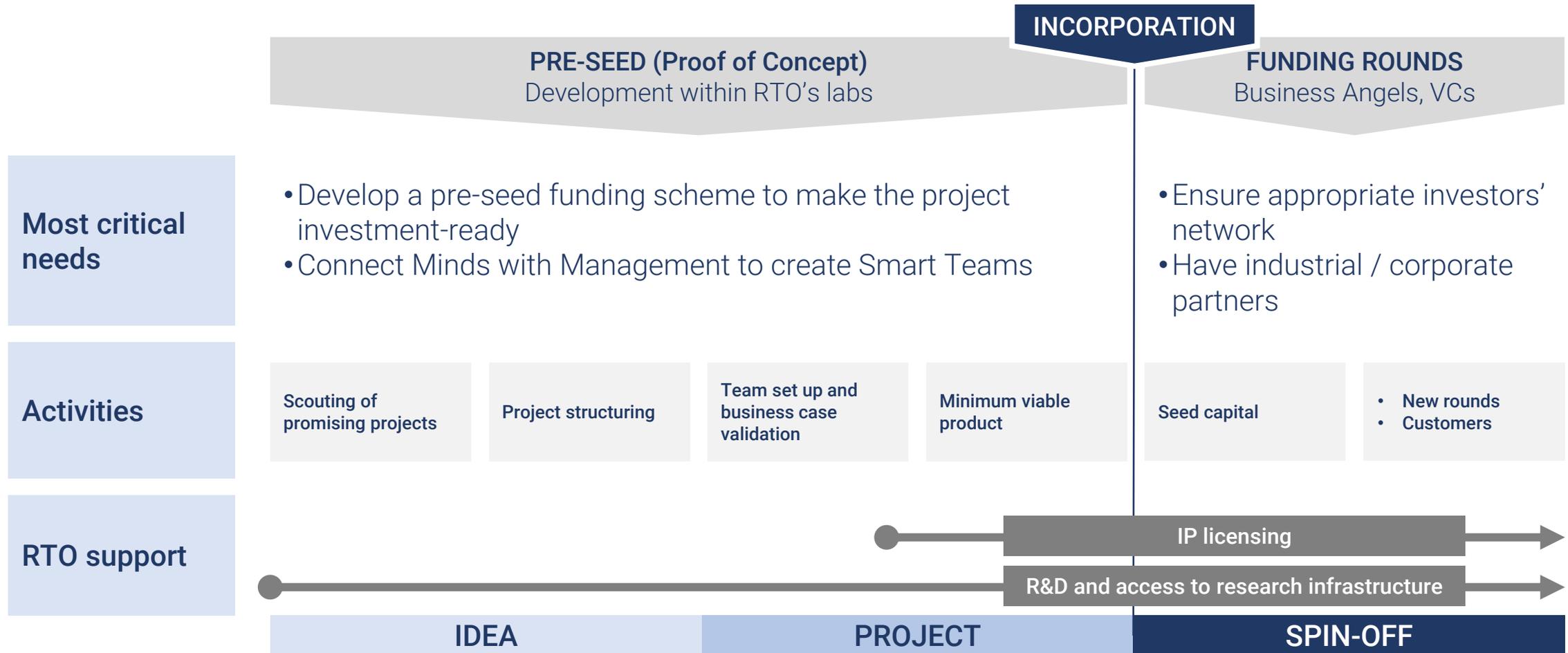
... which require more than just money, but a five dimensional environment including management, infrastructure and corporations

Source: our elaboration on EARTO (2017) model



# Pre-seed phase is critical and is performed within RTO's facilities before spin-off is incorporated. IP licensing and access to RTO facilities are fundamental after incorporation

Our elaboration on EARTO (2017) model



# We have developed a holistic investment strategy to minimize the risks of our portfolio through training, management skills, industrial structures and capital reserves

## Team, money and market-driven innovation are the main weaknesses of startups



Source: The Top 20 Reasons Startup Fail, Feb 2018

## VV3TT approach to the Tech-Transfer' risk mitigation



1) Among the best design schools in Italy, managed by Galileo Visionary District

2) Internationally accredited business school, created by the main insurance groups (Generali, Alliance, Poste Vita...) and industrial actors (Fincantieri, Danieli, Illy, ...), with participants from 95 countries

We have designed a novel PoC investment program, which combines technology development, education and test facilities, and is performed before spin-offs are incorporated...

### INVEST IN TECHNOLOGY

From TRL3 to TRL5

€50k prototyping

APPLIED RESEARCH RESULTS



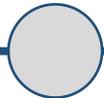
TECHNOLOGY PROOF OF CONCEPT



MARKET PROOF OF CONCEPT



SPINOFF incorporation



6m

9m

12m

18m

### INVEST IN PEOPLE

Executive MBA in Innovation & Entrepreneurship\*

€25K MBA scholarship



MIXED CLASS WITH MANAGER



GENERAL MANAGEMENT FUNDAMENTALS



ENTREPRENEURSHIP



INNOVATION MGMT

Part time Master in Business Administration, **designed with MIB School of Management and The European House – Ambrosetti**, where **researchers** will learn how to conduct their future businesses together **with corporate middle managers**, who will be exposed to the latest technologies and innovation management methodologies.

**Digital Capability Center Venice**  
LEF, a JV between McKinsey & Co and Confindustria

**BUGNION**  
Leading Italian IP advisory company



Testbed, use case development



Strategic and administrative IP mgmt

**MIB SCHOOL OF MANAGEMENT**  
Internationally accredited business school

**sid scuola italiana design**  
**GALILEO VISIONARY DISTRICT**  
Design school and consultancy, Padua University incubator manager

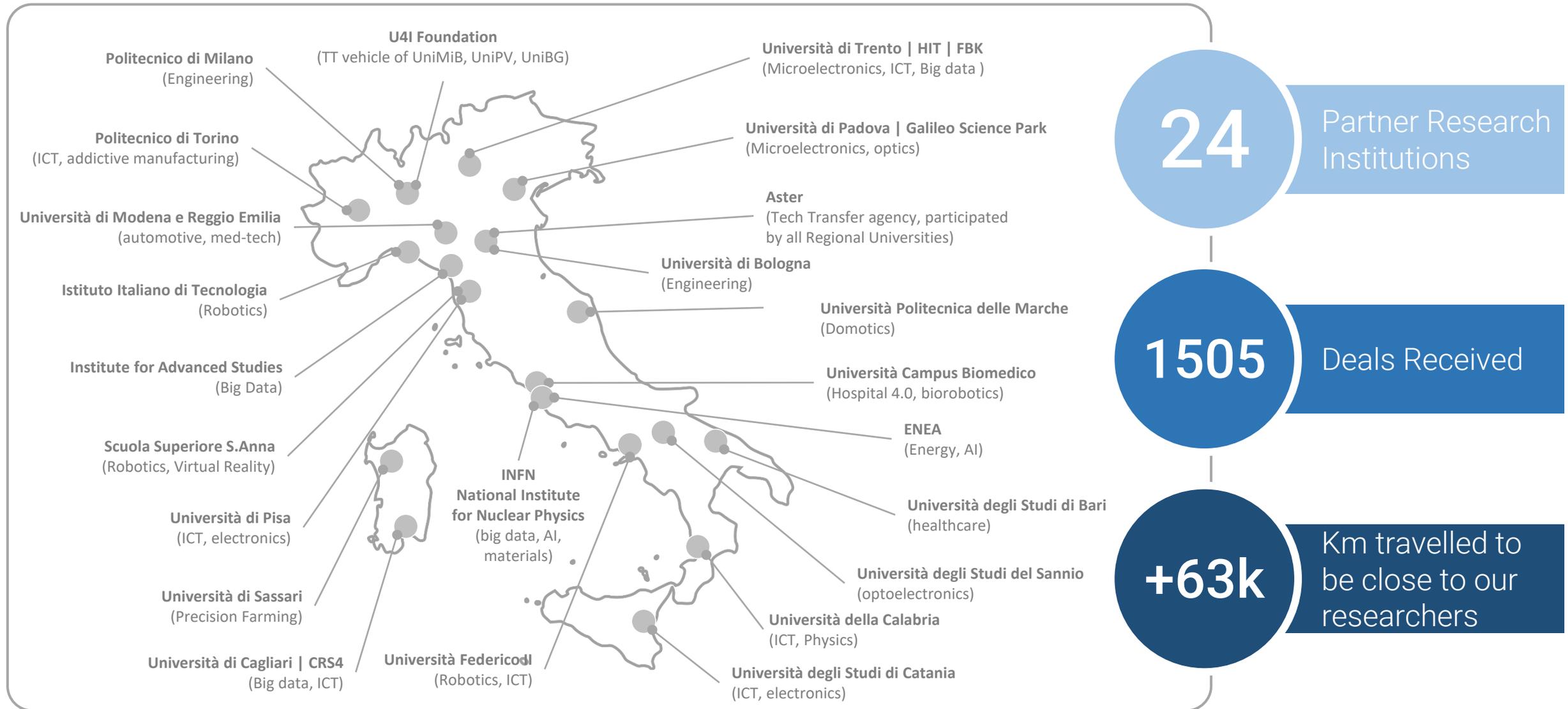


Executive MBA in Business Innovation



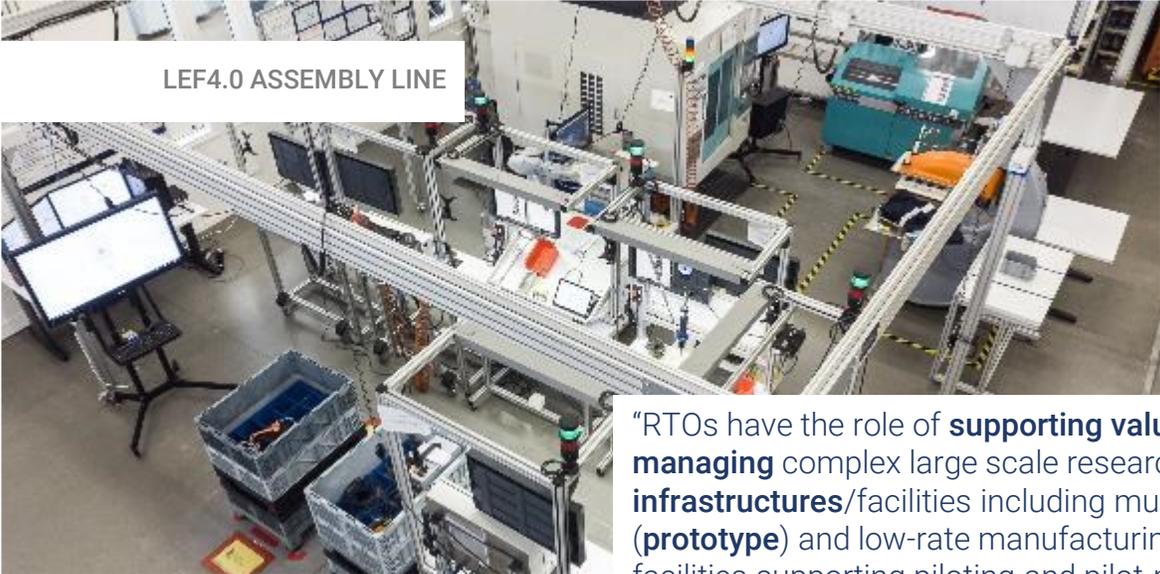
Design thinking, product development

# Our network of agreements with Italian research institutions is massive, and numbers confirm they are not just paperwork



# A partnership with a pilot environment for technology and use case validation is fundamental for Proof of Concepts: Lean Experience Factory 4.0 represents an opportunity for all Southern Europe

McKinsey & Company

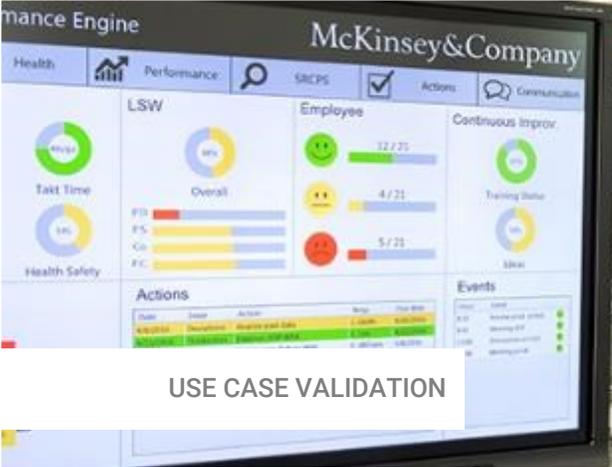


LEF4.0 ASSEMBLY LINE



TRAINING FOR 13 DEEP TECH PROJECTS IN LEF 4.0 (May '19)

“RTOs have the role of **supporting value chains by managing** complex large scale research and **technological infrastructures**/facilities including multi-use research (**prototype**) and low-rate manufacturing (**test & validation**) facilities supporting piloting and pilot-production. **These are essential to the creation of deep-tech start-ups** but they are too expensive for any single industry investment. Access to RTO in-house infrastructure allows a company to grow and create value with a low capital need.” (\*)



USE CASE VALIDATION



LEF 4.0 DEVELOPMENT (Ready Jun '20)

(\*) Source: How to Exploit the Untapped Potential of RTOs' Deep-Tech Start-Ups in Europe, EARTO, 2017

# As of June 2020 in our Portfolio we host 6 companies ...



Multi Factor Authentication solutions and services based on the exploitation of the invisible unique fingerprint which every portable phone camera sensor have due to manufacturing random imperfections. It allows to generate camera-dependent cryptographic keys to sign with your mobile or for antipiracy solutions.



In-silico drug discovery platform. The innovation is based on applying innovative algorithms derived from theoretical physics to transformative drug discovery protocols thus revealing with atomic resolution the folding and misfolding mechanisms of bio-medically relevant proteins, thereby unveiling new class of pharmacological targets and enabling ultra-fast assessment of druggability of complex proteins, slashing development costs and computing time by order of magnitudes.



The first system which allows deaf persons to feel autonomous, free, and secure, whether at home or at the office or on holiday. IntendiMe technology is capable of revealing any sound by means of a cloud of universal auditory vibration detectors and of transmitting a notification of it in real time to the user's smartwatch. A mobile software platform allows users to fully customize responses of sensors and smartwatch, adapting the user experience to different situations or personal taste.



Robotic technologies for the rehabilitation and physical assistance of people with neurological, orthopedic or aging-induced disorders, which be employed not only in cutting-edge medical facilities but also at the patient's home, for a better quality of life.



Kiber/VRmedia operates in the sector of Augmented Reality, developing innovative hardware/software products and solutions devoted to the Industrial sector, for technical personnel training and for advanced after sales services, as well as research activities by universities, hospitals, and research centers. Kiber products are also used in the fields of Healthcare, Cultural Heritage and Entertainment.



Innovative Epidural anaesthesia. The correct placement of both the needle and catheter for administering drug into the epidural space is a challenging procedure, characterized by failure rates up to 30%. They leveraged on optical fiber sensors technology and has developed a 'sensorized' epidural catheter that, through continuous strain and bending measurements, provides real time alerts when it is correctly placed inside the epidural space.



# ...and 7 DeepTech POC projects, but...



## HEP

Energy storage system which unifies the advantages of high energy density cells (e.g. LiS) and high power density systems (e.g. supercapacitors) to overcome the existing limitation in energy storage



## U-Care

A smart medical device on hospitals beds for:

- Accurate and continuous monitoring of urine output
- AI-tuned Early diagnosis of Acute Kidney Injury.



## Fog Atlas

FogAtlas goes beyond current fog computing platforms by introducing application-aware orchestration of the infrastructure resources.



## RaFrBio

Novel technology for non-invasive glycemia monitoring, based on a high-sensitivity Radio Frequency (RF) sensor, to retrieve glucose information from alternative corporal fluids, such as sweat, saliva or tears.



## Relicta

Water-soluble bioplastic with temperature dependent tunable performances



## Smart texture

New texture enabling motion and gesture control real time. It would be used as working suites for collaborative robotics operations.



## ROXFET

Portable (flexible, lightweight and low-voltage powered <10V) and large area (30 cm x 30 cm or more) direct detectors, not existing in the market.

A vertical summary graphic on the right side of the slide. It consists of three stacked circular icons, each with a white number inside, and a corresponding horizontal bar to its right. The top icon is light blue with the number '7' and the text 'POC funded'. The middle icon is dark blue with the number '150' and the text 'Projects analysed'. The bottom icon is a darker blue with the number '40' and the text 'Researchers involved'. The bars are also colored to match their respective icons.

- 7 POC funded
- 150 Projects analysed
- 40 Researchers involved

...10 more POC have been already selected in the POC 2020 call and we are finalizing the contracts.



### ProteoLaBio

Machine-learning-guided Directed Evolution, a novel machine learning method that uses a powerful ad-hoc modelization to obtain extremely accurate predictions for best protein candidate in Drug Discovery.



### FastFood

Microwave imaging (MWI) technology, enhanced by specific machine learning algorithms, to detect contaminants within packaged food/beverage products directly along the industrial production line



### BlueCodec

Improves quality of broadcasting through a special AI system of image reconstruction. allowing to use more compression without a reduction in the quality of experience and service for the end user of the videos



### QuicklyPro

Q-Walk is a wearable device, with an integrated APP, designed to rehabilitation of walking in people with Parkinson's disease.



### ALIQUID

Artificial Intelligence (AI) to the edge of the IOT: design tools that assist developers during the design flow of systems and applications, providing automated optimization for AI onto battery-powered tiny devices (cost <10\$).



SCUOLA  
NORMALE  
SUPERIORE

### INTA-Braiker

A point-of-care portable device for the fast and cheap diagnosis of traumatic brain injuries (TBIs) from blood



### Digital Twins

Digital Twins is a real-time digital replica of a physical system based on predetermined mathematical models developed for the EV traction system.



### RE-Paper

Use of recoverable sorbent materials to remove MOH from the cellulose suspension in paper mills, allowing to produce safer food packaging made of recycled cellulose



### ILIAD

Manipolatore robotico dotato di un sistema di visione in grado di riconoscere la presenza della plastica che avvolge il pallet e conseguente punto più adeguato per il taglio del cellophane



UNIVERSITÀ  
DI PAVIA

### BioFiber

BIOFIBER is a new generation of advanced highly absorbent medicated dressings, which features an innovative new fiber technology

10 POC selected

62 Researchers involved

# Our team brings a sound and diversified experience in finance, research and management of multinational corporations: the appropriate blend of skills required to run technology transfer



**NICOLA REDI**  
Managing Partner

Nicola has **10+ years' experience in venture capital**, serving as Chief Investment & Technology Officer of TTVenture and later as Investment Director in Vertis. He previously spent **15 years with EMEA and Global responsibilities** in operations and R&D management **within leading multinational companies**.

He was the Italian representative of High Level Group for Innovation Policy Management and is **McKinsey's board member in Lean Experience Factory**.

Nicola holds an **MSc in Aeronautical Engineering** from Politecnico of Milan, an **MBA** from University Bocconi and a **PhD** from Aston University in Birmingham.



**ROBERTO DELLA MARINA**  
Managing Partner

Roberto worked for **7 years as head of AIAdInn Ventures fund**, managed by Friulia Veneto Sviluppato SGR.

He was previously **Vice President for a leading multinational company** working in micro-nanotechnologies and micro electronics, and **spent 10+ years in Switzerland as a manager and researcher at CERN, CSEM and Colibrys SA**.

He was **deputy chairman of Area Science Park** (a research body under the Italian Ministry of Education, University and Research) and **General Manager** of the Molecular Biomedicine Cluster in Trieste.

Roberto holds an **MSc in Physics** from the University of Trieste and a **PhD** from ETH in Zurich.



**MARTA NERVO**  
Associate

Before joining the fund's team, Marta **served the technology transfer office of Polytechnic of Turin** as knowledge transfer manager.

She previously worked as a **researcher in a leading French energy company** and **won the ESA S2UN Challenge** with a business plan for a technology transfer development of a DC-DC conversion unit.

Marta holds an **MSc in Nuclear Engineering** from the Polytechnic University of Turin and a **PhD** in Nuclear Engineering from the same university. She got a Specialization in Business Foundations from Wharton Business School.



**MISAL MEMEO**  
Investment Manager  
Vertis SGR

Misal brings a sound experience in **research and technology transfer in Italy, UK and Sweden**.

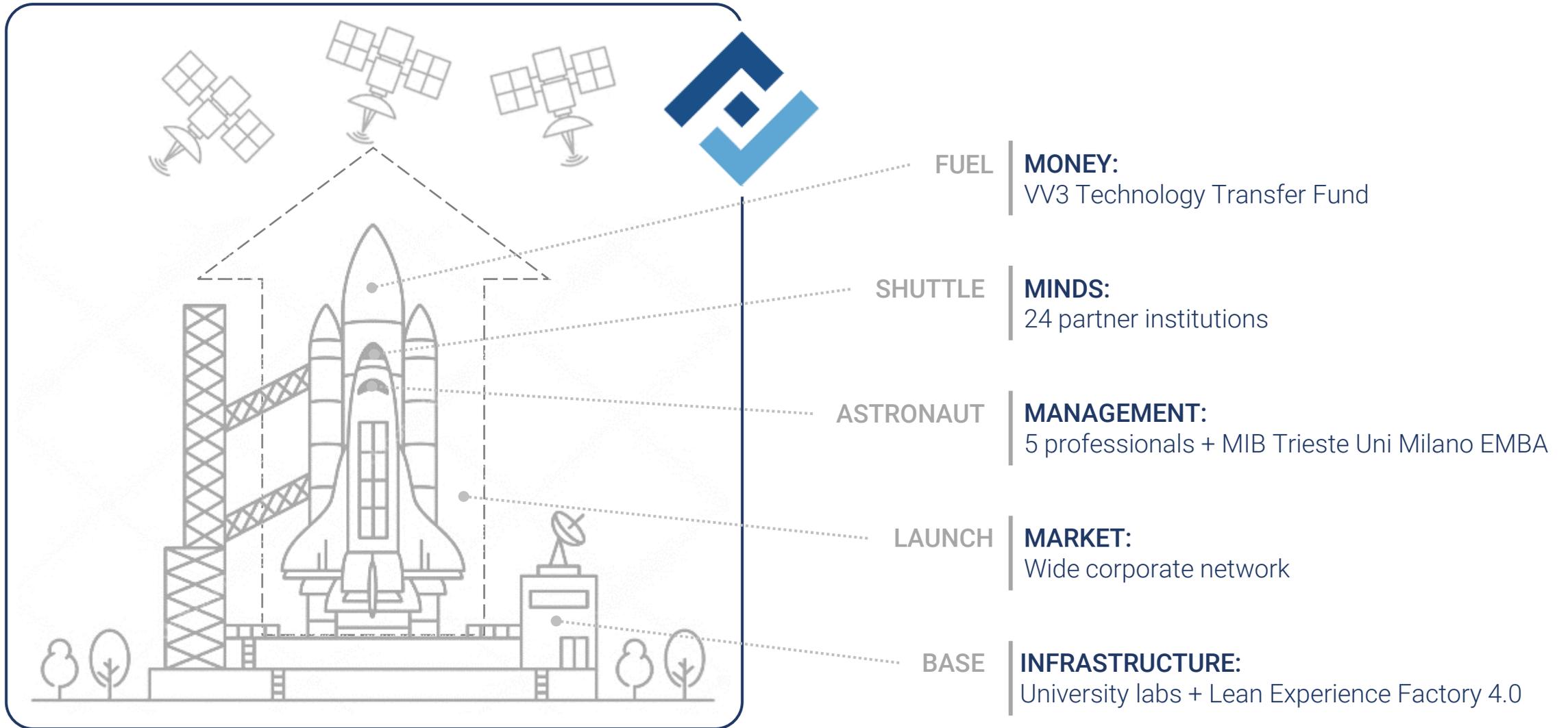
He served as a researcher for the University of Pavia and acted as scientific advisor for leading policy institutions, with a particular focus on applied technologies.

He is a **fellow of Tribeca Disruptive Innovation Awards**, a living laboratory for advances in disruptive innovation theory.

Misal holds a **MS and PhD in Chemistry** from University of Pavia and an **MBA in digital transformation**.

# Venture Factory model goes through all dimensions required to create Deep-Tech startups

Our elaboration on EARTO (2017) model





# Venture Factory

We exploit deep-tech opportunities, translating research into business innovation

Roberto Della Marina PhD | [roberto@venturefactory.tech](mailto:roberto@venturefactory.tech)