



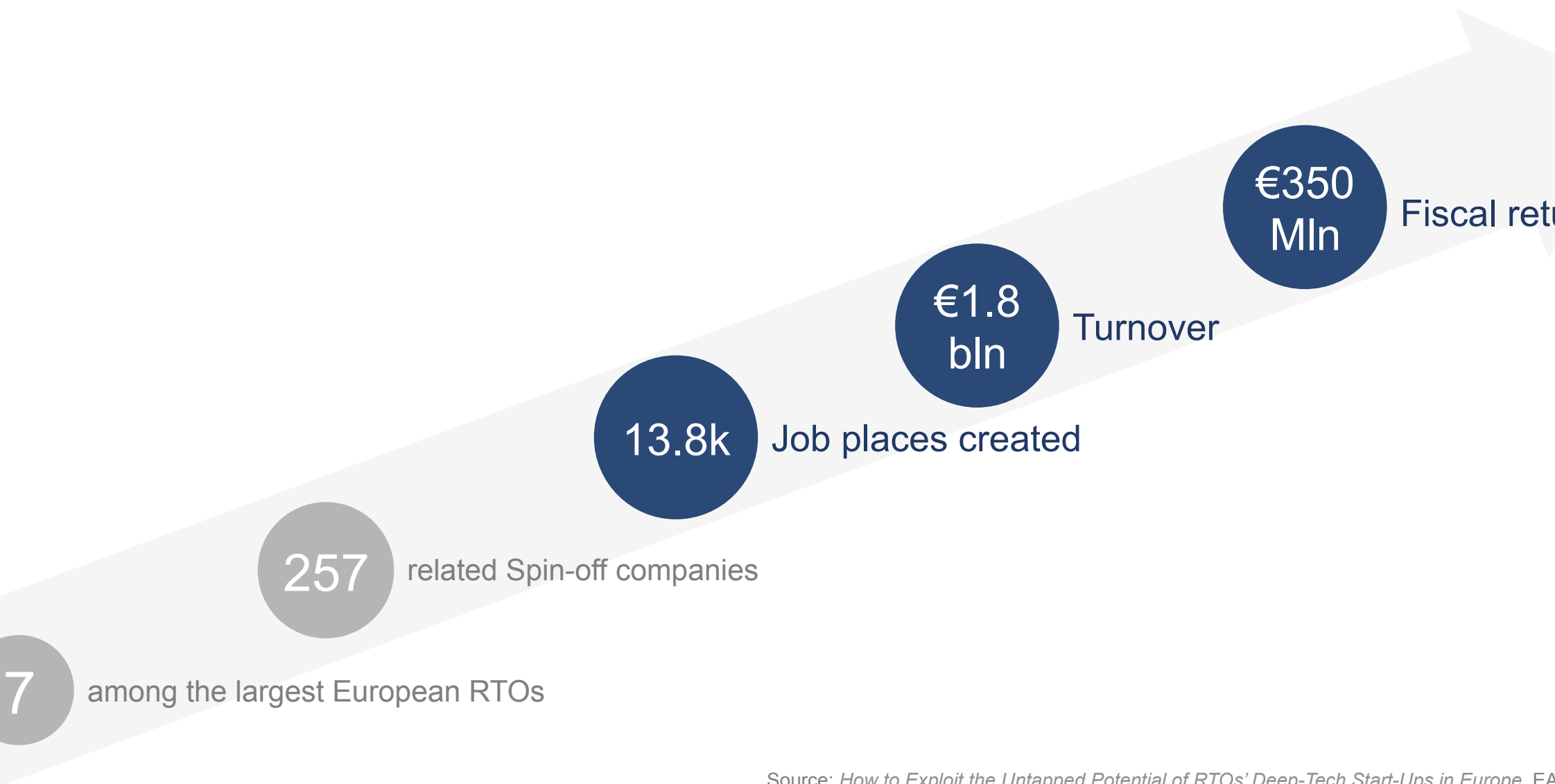
Present and Future of Knowledge Transfer

The perspective of an investor

Nicola Redi, PhD | nicola@venturefactory.tech



Netval Summer Conference, Rome, 17th Sep 2019

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*, EA

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

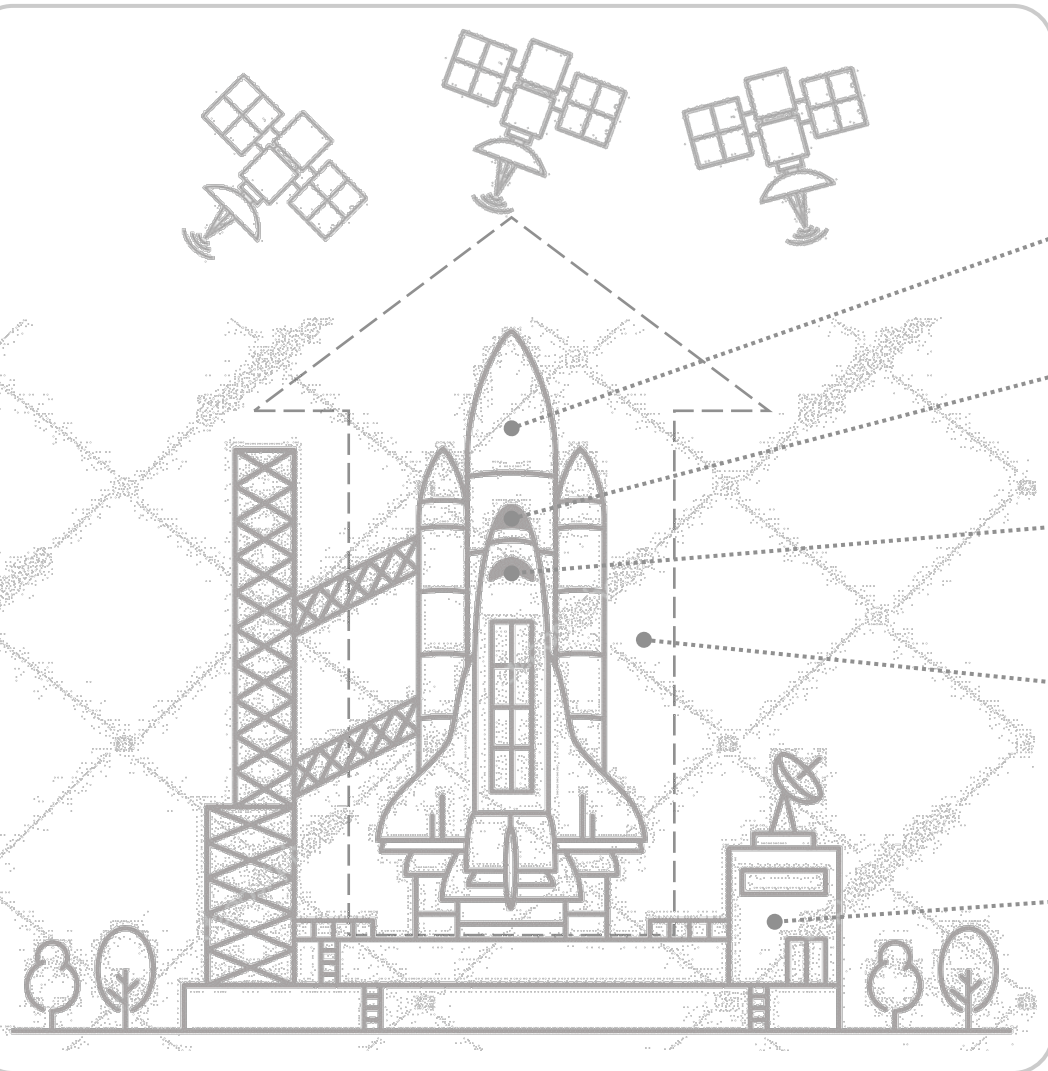
	 US-type Digital Startups (i.e. Unicorns)	 EU-type Deep Tech Startups (i.e. RTOs' Spin-offs*)
Technology	No own / commonly available	Deep tech, protected / hard to reproduce
Clients	B2C	B2B
Business approach	<ul style="list-style-type: none"> • Leverage on business model • Service based • Disrupting existing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

Source: our elaboration based on EARTO 2017 analysis

* RTO – Research and Technology Organisation

Starting a Deep-Tech start-up is like launching a rocket into space

Inspiration on EARTO (2017) model



FUEL

MONEY:
smart and long lasting

SHUTTLE

MINDS:
researchers with promising technologies

ASTRONAUT

MANAGEMENT:
entrepreneur and team with clear market vision

LAUNCH

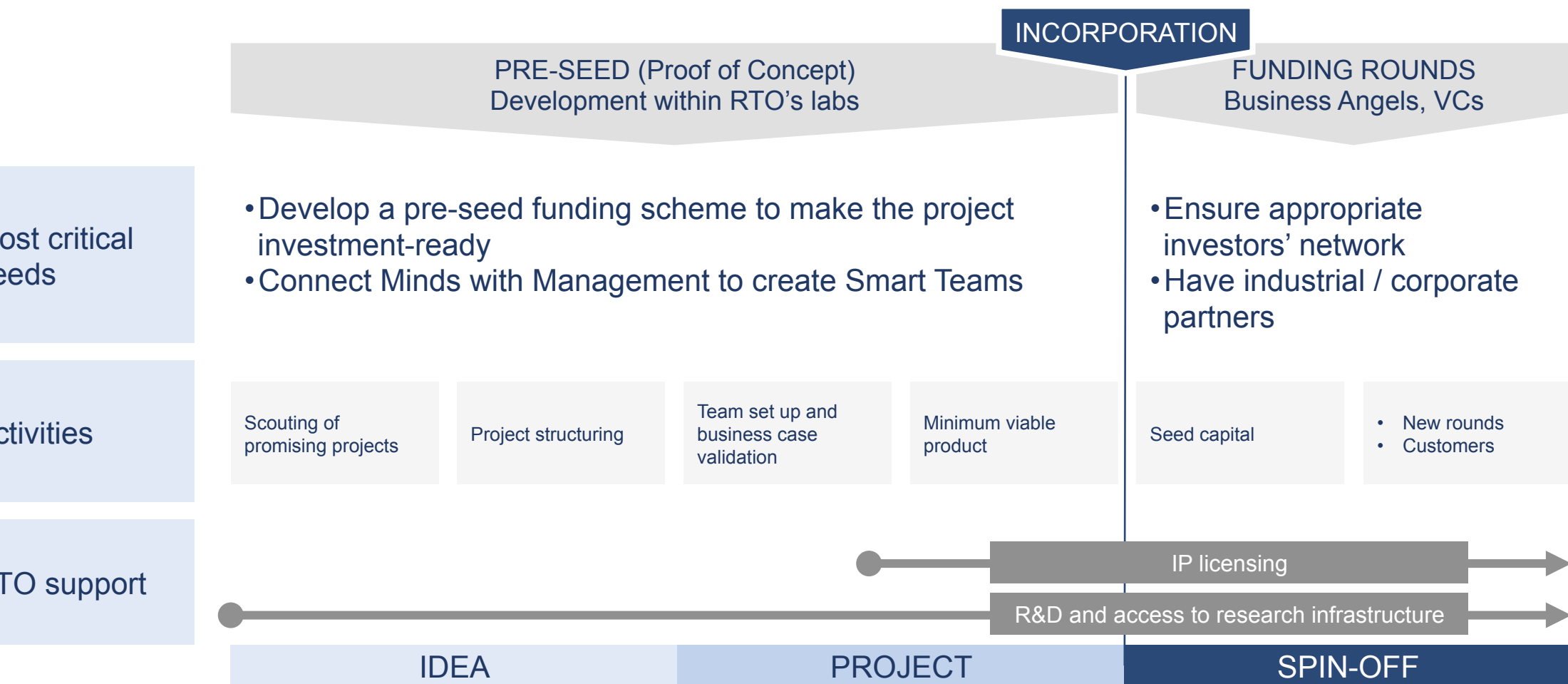
MARKET:
acquire industrial customers

BASE

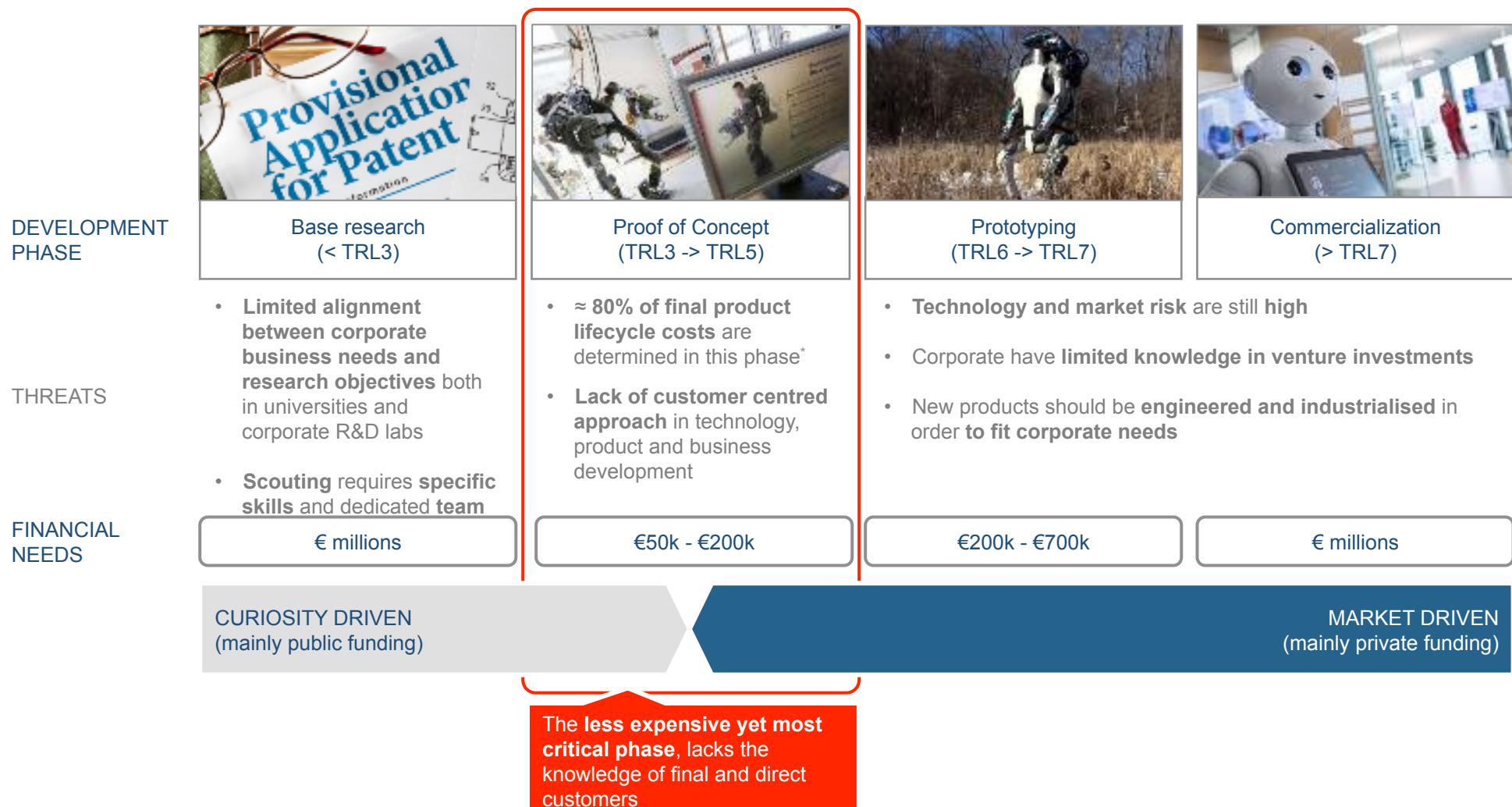
INFRASTRUCTURE:
research, prototyping, piloting and testing

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

Inspiration on EARTO (2017) model

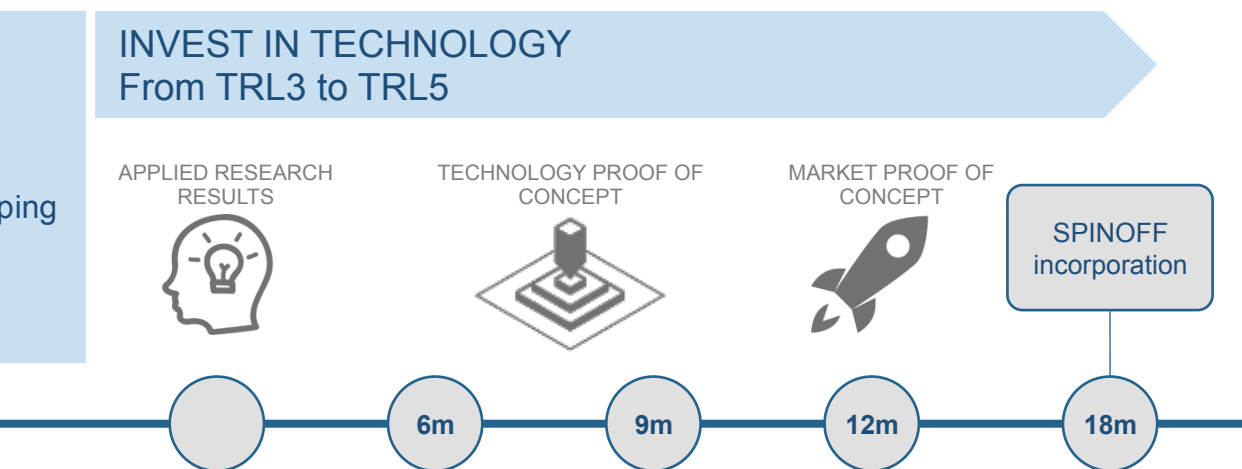


is the most critical phase of the technology transfer process and investments might be effective if supported by strong industrial competences



(*) Source: D.P.Schrage, GeorgiaTech

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



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 management

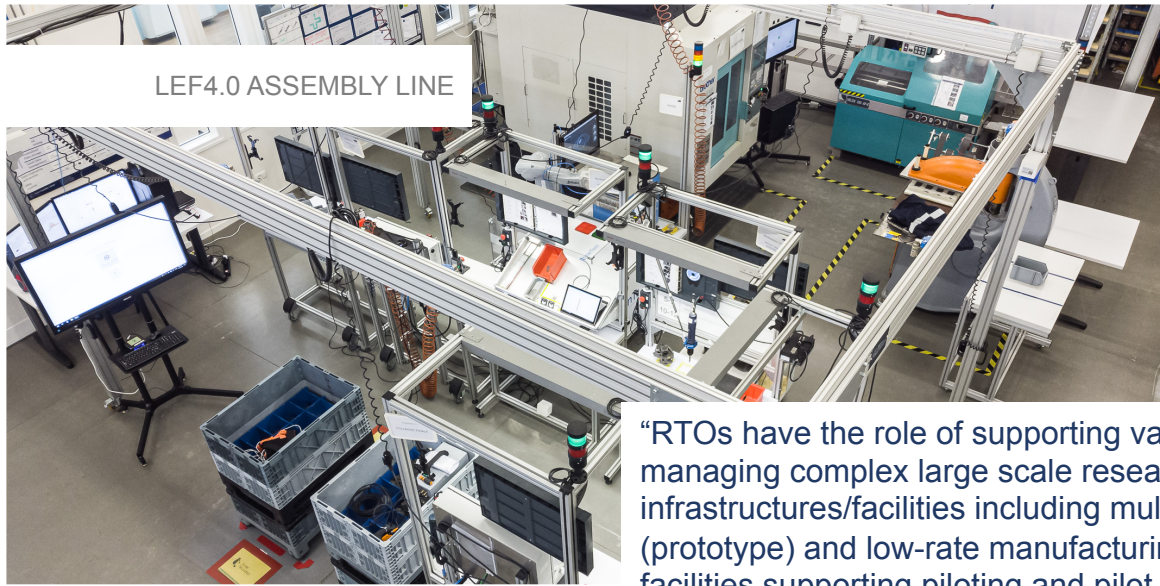
MIB SCHOOL OF MANAGEMENT
Internationally accredited business school

GALILEO VISIONARY DISTRICT
Design school and consultancy
Padua University incubator

General management education

Design thinking, product development

Not environment for technology and use case validation is fundamental for Proof of Concepts: Learning Factory 4.0 represents an opportunity for all Southern Europe

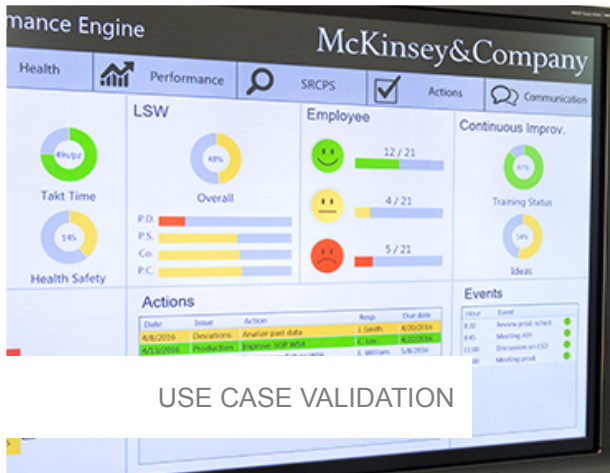


LEF4.0 ASSEMBLY LINE



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

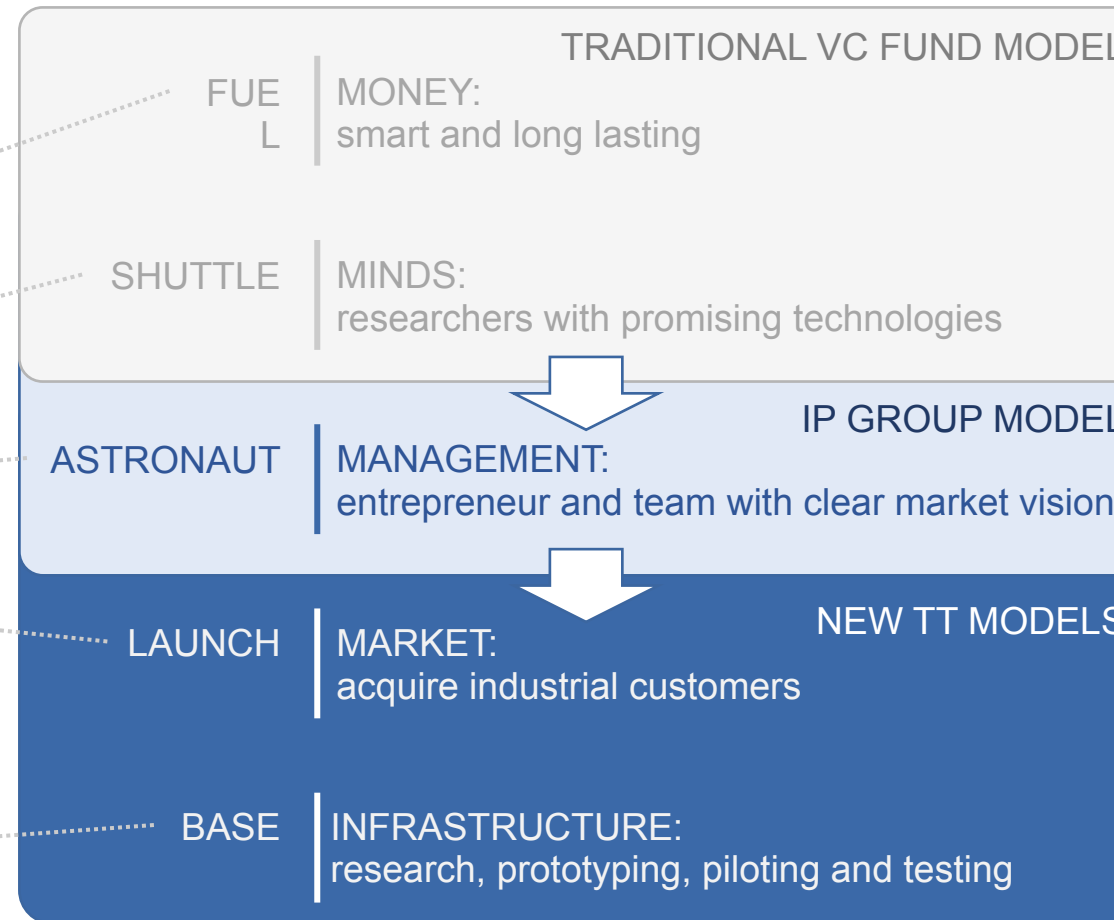
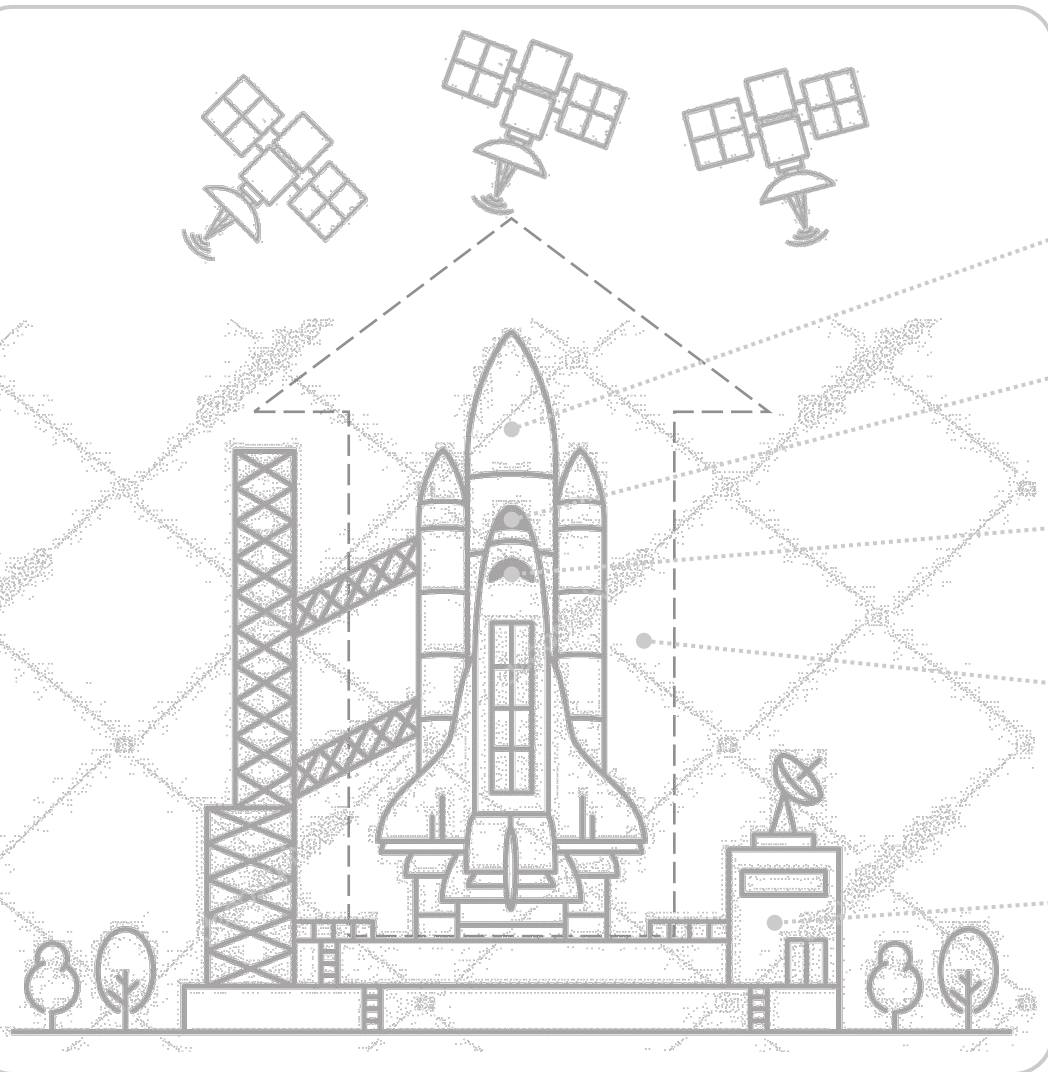


LEF 4.0 DEVELOPMENT (Ready Jun '20)

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

More Technology Transfer models should stretch today ones to cover all dimensions

Inspiration on EARTO (2017) model





Present and Future of Knowledge Transfer

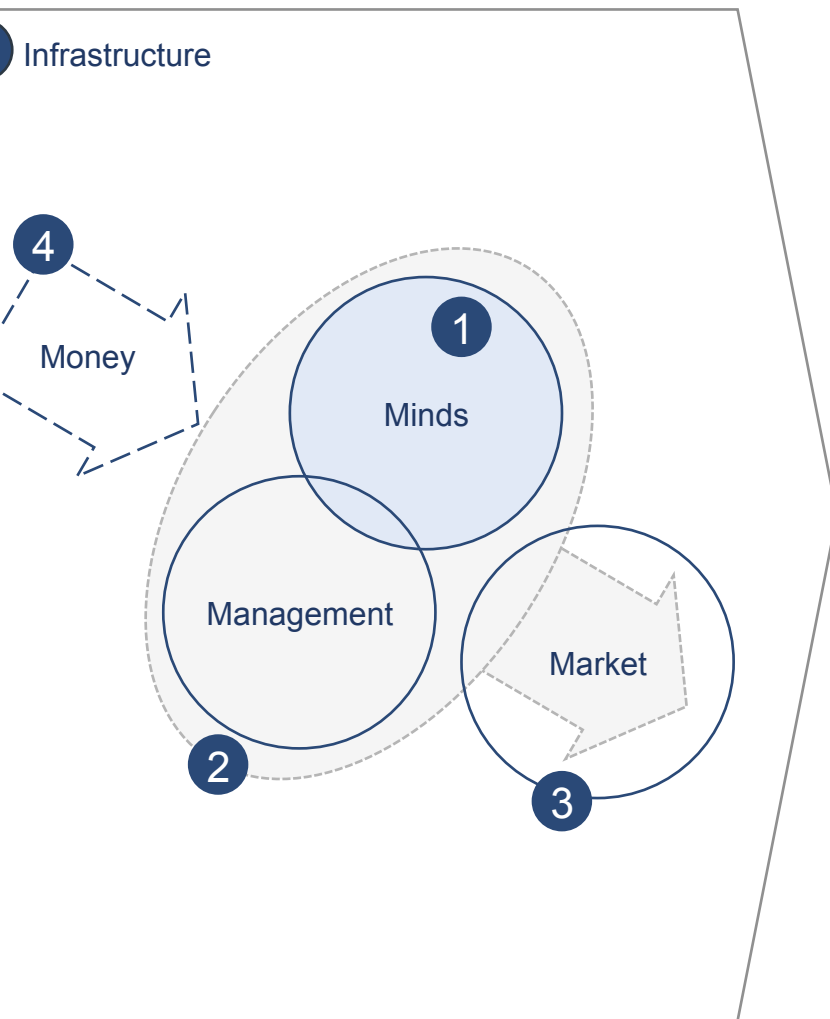
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RTO* analysed the process to create successful Deep-Tech startups and suggested five key dimensions should be connected

an Association of Research and Technology Organisations



DIMENSIONS

INFRASTRUCTURE

Excellent research, multiuse (prototyping) and low rate manufacturing (test and validating) facilities

MINDS

Technology experts with access to infrastructure developing a promising market-oriented RTO technology into a product, with strong IP.

MANAGEMENT

Strong, smart and versatile team with good market vision, willing to convert disruptive technologies into ready-to-invest businesses

MARKET

Strategy with interested and committed industrial partners/clients.

MONEY

Smart capital from investors seeking to transform technology based investment opportunities into business value and growth

PROCESS

0

Allows to grow and create value with a low capital need. Can be used to investigate completely new technology piloting spin-off incubation, to test changes in existing products, and validate emerging concepts.

1

An RTO's deep-tech start-ups usually starts with a promising technology at a close-to-market level of development, with potential applications in different markets.

2

Leadership dilemma: the RTO needs to find a motivated entrepreneur who will act as a driving force to develop the market. Minds and Management together form the Smart Team.

3

Market Development: develop the market and the technology to identify the industrial clients interested in the technology market perspectives. The higher the number of industrial partners the start-up acquires, the lower the risks are.

4

A strong and smart team of Minds & Management develop a promising technology with a smart market strategy including several committed industrial clients will make it much easier to attract and secure smart money.

most successful European technology transfer models share a long term/evergreen/very early investment model, coupled with active support and, in some cases, direct spin-off management

LEUVEN

House TTO with HR and budget autonomy. Among first in Europe. 95 members, €250M contract research managed in 2015 and 70 IP licences per year. Uses Gemma Frisius Seed Capital evergreen fund managed by KBC and dedicated to KU Leuven only.

IP Group/Imperial Innovations

Evergreen, independent public company. Have agreements with various universities in UK, US and Australia. Concentrate on investments from PoC phase onwards, supporting portfolio companies with managerial services. The NAV at the end of 2018 was £1.1 Bln. IP Group acquired Imperial Innovations on 1/10/2019.

ETH ZURICH

House TTO, with a staff of 30 people. Manages 60 to 70 IP licenses per year and since 1996 it spin-out 260 companies. Investments are performed in cooperation with ETH Venture Partner, an evergreen fund created in joint venture between McKinsey&Co and ETH, later joined by leading Swiss industrial companies such as ABB, Roche,artis, Schindler.

KAROLINKSA INNOVATIONS AB

Wholly owned subsidiary of Karolinska Institutet. It supports university's research teams from initial IP assessment up to full scale development. Manages Karolinska Development, a public, evergreen investment company listed in Nasdaq Nordic market. The team offers business development support to research teams. It focuses on lifescience.

FRAUNHOFER VENTURES

A central department of Fraunhofer Institute. Created on average, 10 spin-off companies per year. Offers a 3 weeks accelerator program with TU of Munchen, the FFE program – similar to a PoC grant – and the FFM one, long term loan up to €100k for management recruiting. In Feb 2019 it launched a TT fund supported by EIF.

ASCENION

Wholly-owned subsidiary of the Life Science Foundation for the Promotion of Science and Research, it provides university hospitals and universities with services in areas of technology transfer in the life sciences. It works as an early stage investor from PoC (in exchange of services) and as an IP broker.



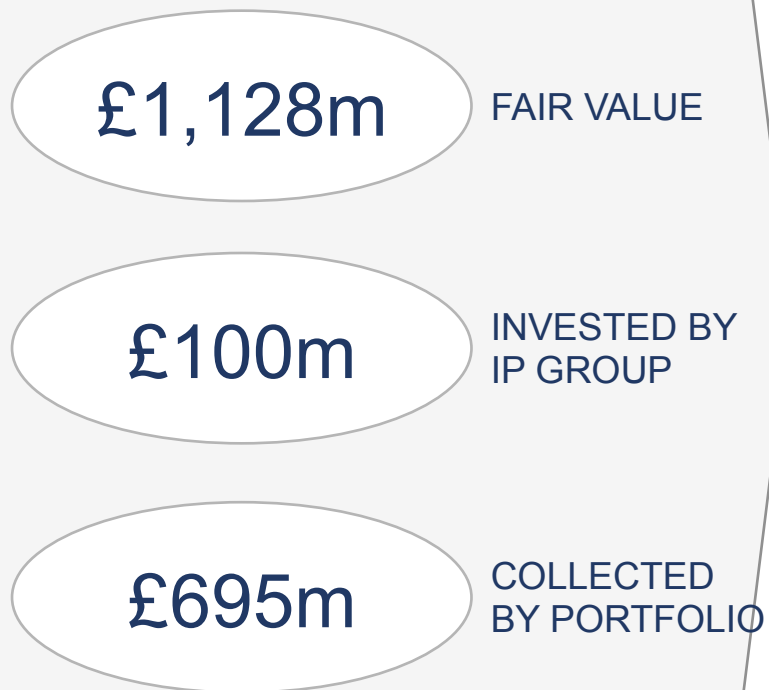
group (including Imperial Innovations, acquired in 2016) is expanding globally and had a significant impact in financial and societal terms

IP Group annual report, end of 2018

PARTNER UNIVERSITIES



PORTFOLIO RESULTS 2018



TOTAL IMPACT

