



Universities-Communities:
strengthening cooperation



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“Technology Transfer at University of Genova”



Sara Cepolina
Università degli Studi di Genova
Technology Transfer Office



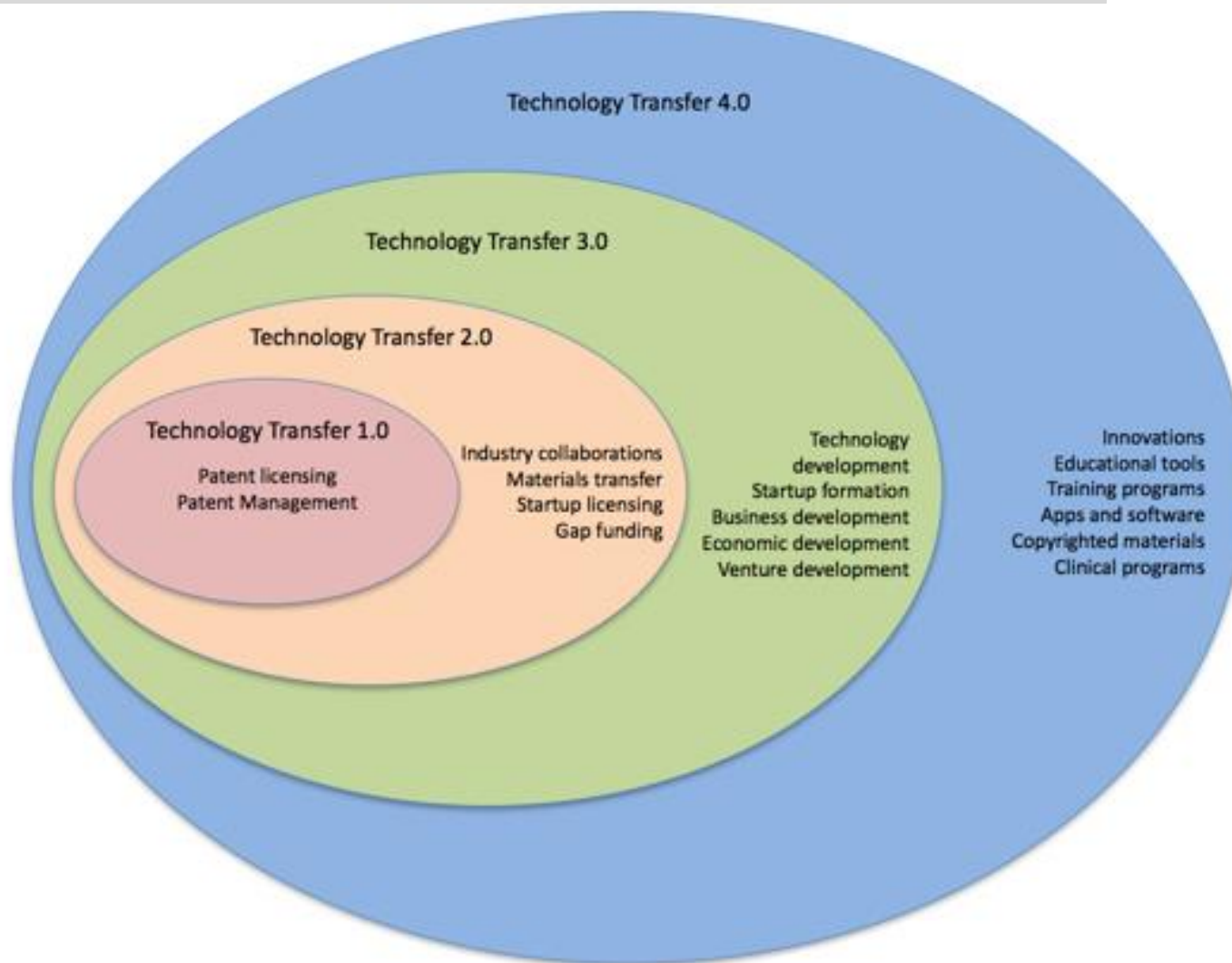
Genoa, 28th May 2024

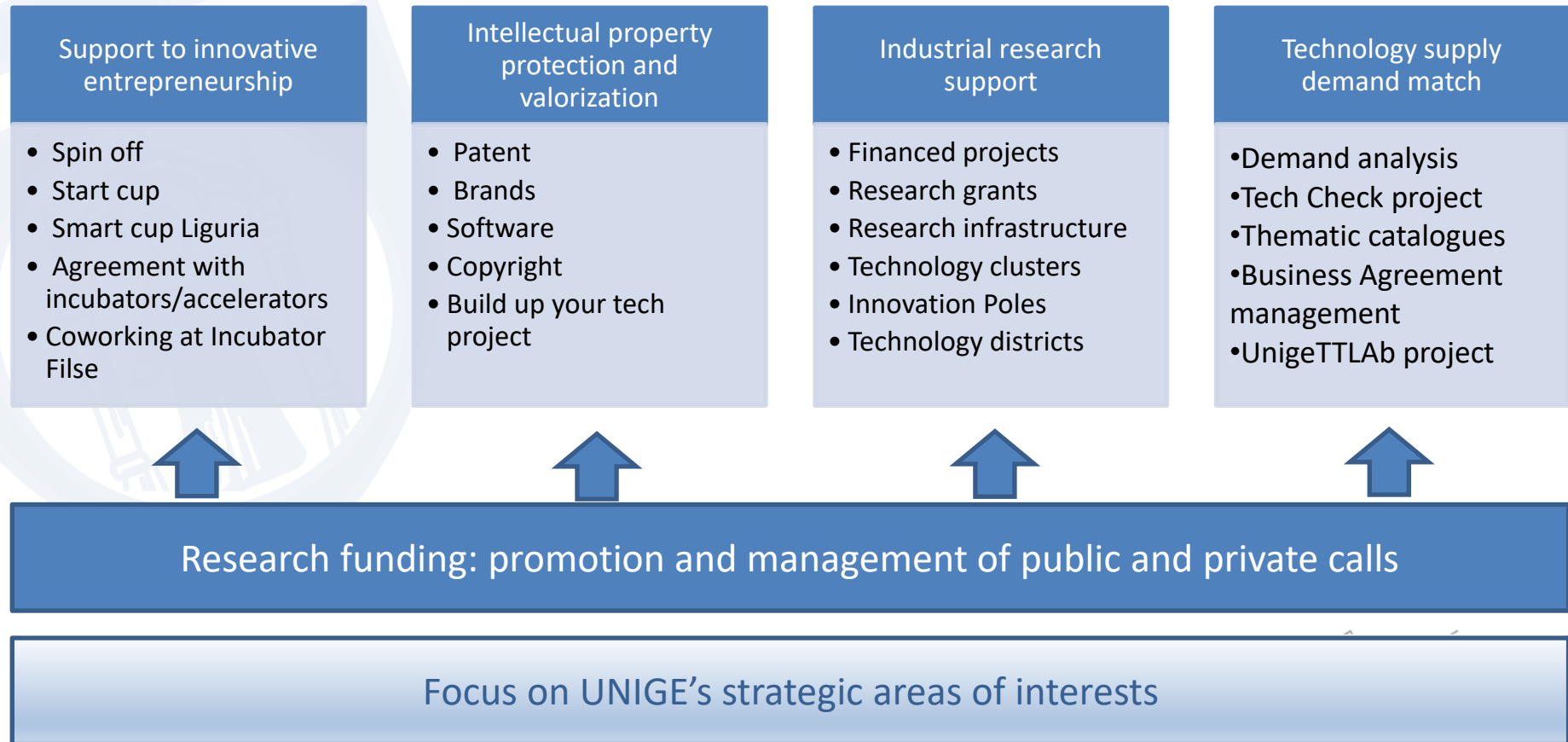
The overall context

- The Universities have created “Technology Transfer Offices” (TTO) to provide facilities and legal support to researchers and students in starting-up new businesses activities and exploiting intellectual property rights.
- The exploitation of research activities results through appropriate means and measures in Italian universities began in the ‘90s, when some legislative measures led universities to invest in the promotion of relations with the industrial sector in order to create opportunities for commercial exploitation of research results.
- By bringing the research activities and its results as close as possible to the market, TTOs contribute concretely to ensure that such activities are useful not only from a scientific point of view, but also in a practical way for the development of the economy itself.



TTO: Internal organization





Technology transfer organization in UniGe



- **Technology transfer committee**
 - 11 professor members, selected by the University dean with different background
 - chair Technology transfer delegate
 - 1 meeting per month
 - In charge of:
 - go/no go path
 - patent portfolio strategy
 - valorization strategy
- **Technology transfer staff**
 - 10 technical administrative staff
- **Internal regulations/policies for**
 - Spin off companies and
 - Intellectual Property Rights

Support to innovative entrepreneurship

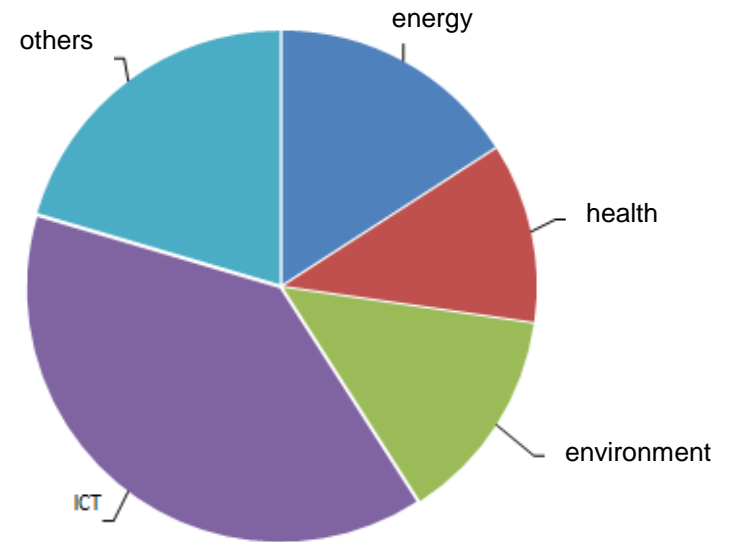
Support to innovative entrepreneurship

- Support for the start up phase of high-tech and innovative companies
- Support for the start up phase and development of spin-off companies
- Administrative support to research laboratories (art. 14 of Ministerial Decree 593/2000)
- Updating of “[Knowledgeshare](#)” website – a digital matchmaking platform for the valorization of the Italian Research results whose aim is to connect research teams with companies and investors
- Relationships with public and private bodies of the territorial, economic and social context ([incubators](#); [CDP](#); [Ligur capital](#) ; [MITO Technology](#)
- Relationships and collaborations with thematic networks:
 - [Netval](#) aims to be the organization where Technology Transfer Offices (TTOs) of Italian universities and public research organizations can meet, share experiences and learn together how to better transfer their research results to industry
 - [ASTP](#) committed to the promotion and professionalization of knowledge transfer practitioners. ASTP strives to shape the future profession of knowledge and technology while increasing the attraction and credibility of the profession.



Spin off e start up

- 42 spin off recognized active in different economic sectors
- Over 100 supporting services offered in 2022
- Practical spin-off recognition management, annual monitoring of spin-off activities, half-yearly monitoring of brand use «spin off unige»
- Application of spin-off regulation
- <https://unige.it/unimprese/Spinoffindice>

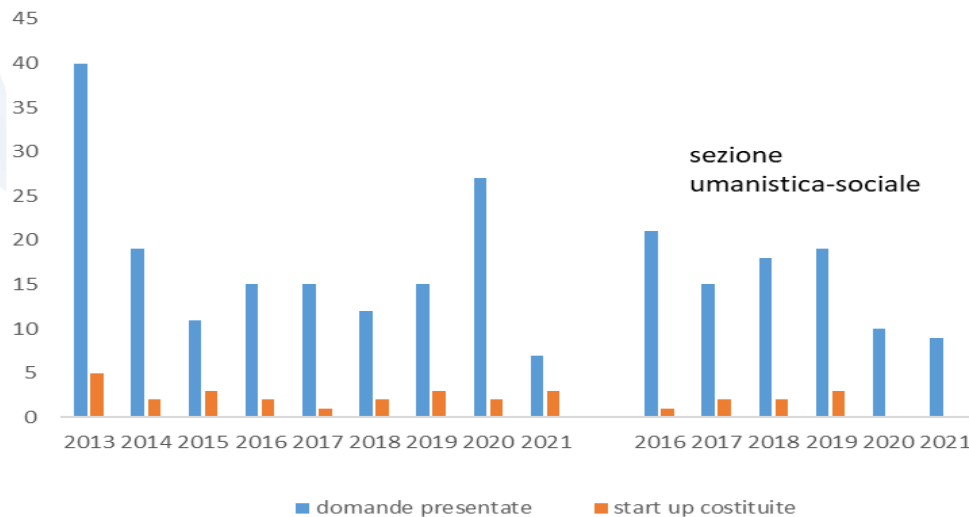


Start Cup

- 2 business plan competition each year:
 - [Start cup](#) - budget € 20.000
 - Start cup humanistic-social - budget € 20,000
- Call, dissemination, presentation assistance, selection, assistance to the winners
- Managing coworking spaces at Incubator Filse

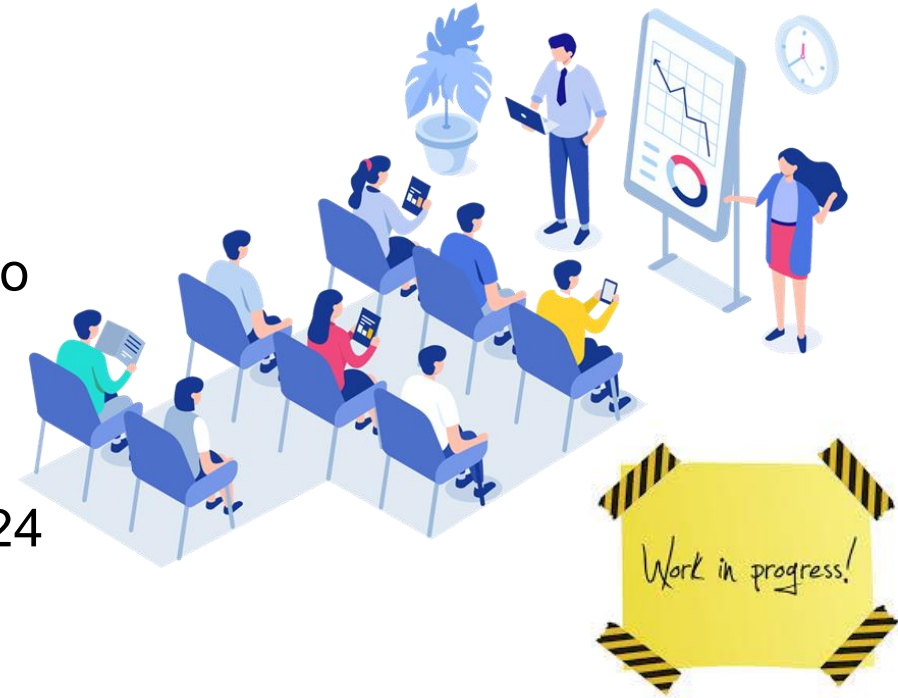


Numero di start up nate dalla Start cup UniGe



Contamination Lab

- Funded by Compagnia di San Paolo
- Work in progress
- First call for students next June 2024



a laboratory to provide entrepreneurial education to potential startupppers thorough seminars and co-working activities. A community where students collaborate with national and international academics and business experts to explore and validate business models

The Entrepreneurial Option: Issues for Research Institutions

- To encourage or discourage?
 - Mission of the research institution?
 - Culture of the research institution?
- Management of tension with other institutional missions.
- Management of individual conflicts of interest.

Start-up Companies

- To be successful, a start-up must have all of the following ingredients:
 - Commercially motivated scientist
 - “Flexible” research institution
 - Exciting market potential, a “good story”
 - Management team
- All of the above will permit the company to obtain capital resources.

Best Practices -Starting New Companies

- Research Institutions which do well at licensing technology to start-ups adopt the following “best practices”:
 - An economic development mission.
 - Strong linkage to business development infrastructure (e.g., incubators).
 - Novel, early-stage financing (e.g., seed funds, prototype financing).
 - Attention to faculty culture, incentives, and rewards.
 - Enabling policies (e.g., conflict-of-interest).
 - Administrative flexibility in deal-making.

Financing New Companies

- Ability to finance new ventures depends upon:
 - Quality of management team
 - Economic value of business concept
 - Value to end-user and developer
 - Patents
- Financing sources for “early stage” companies:
 - Founders, Family and Friends
 - Scientific Institutions
 - Government programs
 - “Angels”
 - Corporations
 - Venture Capital Funds

Rules to be considered a spin off company

- Should facilitate the transfer of research activities and its results
- Should Link with the university research activities
- Ministerial Decree n. 168/2011 gives more detailed rules on University spin offs and researchers participation as shareholders
- A University spin-off is a company where
 - A University employee (researcher, technician, administrative) has a share in the company (minimum 5%)
 - University may have a share (maximum 24%)
 - Application is examined by the “technology transfer Committee” (codified evaluation criteria) and approved by the “Board of Directors” of the University.
 - Delivery of the trademark “Spin off of University of Genova”

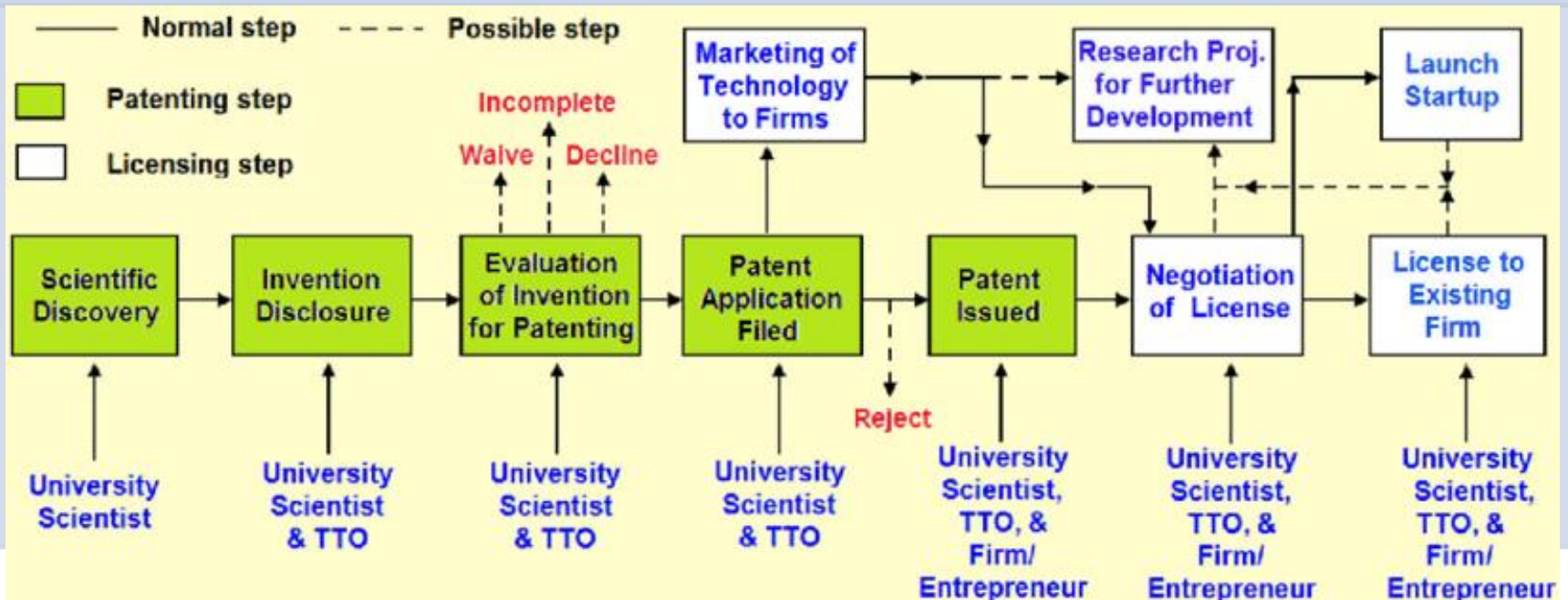
How to start up a University spin off

- The application spin-off proposal, signed by a researcher is sent to the TTO along with business plans, statutes, memorandum, details of shareholders and shares, description of the relationship with the research activity.
- The Department committee where the researcher works must state that there is no conflict of interest, and the proposed activity must be inline with the research activity of the Department.
- The technology transfer Committee evaluates the spin-off proposal and sends its opinion to the Board of Directors of the University.
- The Board of Directors, after consulting with the Academic Senate, shall examine the documentation and decide whether or not to participate in the share capital of the spin-off. In case of a positive evaluation, the agreement is then signed by the University rector and shareholders, and finally, the company can be established.

Support to innovative entrepreneurship: challenges

- Build an environment supporting new business ideas born
- Supporting the growing process of Spin off companies, with dedicated actions: training, partner research.....

Intellectual property protection and valorization: a typical processes



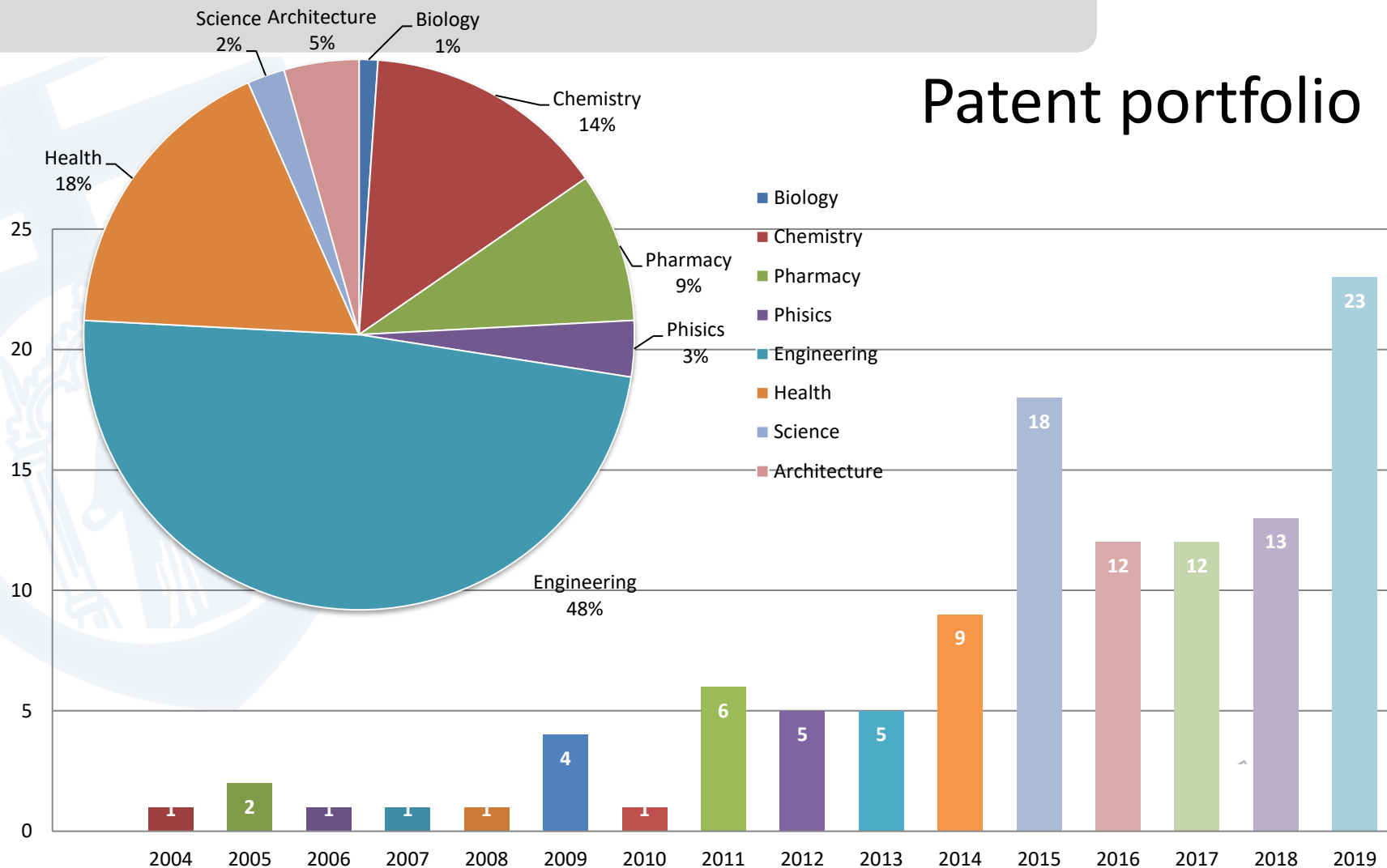
2. “Intellectual property protection and new technologies exploitation”

- Administrative and legal support to the filing of patents
 - carrying out priority searches
 - liaising with patent attorneys. The office is also
- Draft and review of all types of contracts related to patent applications
 - management of patents in case of joint ownership
 - joint development agreements
 - assignment or license contracts
 - material transfer agreements
 - studentship agreements for the management of intellectual property as part of doctoral scholarship
 - confidentiality agreements
- Managing of the results and IPR, essentially in terms of access rights and foreground and background management
 - academia-industry research collaboration
 - European FP7 programmes
- Information activities on copyright
- Consultancy and registration of trademarks
- Training and dissemination of the culture of intellectual property

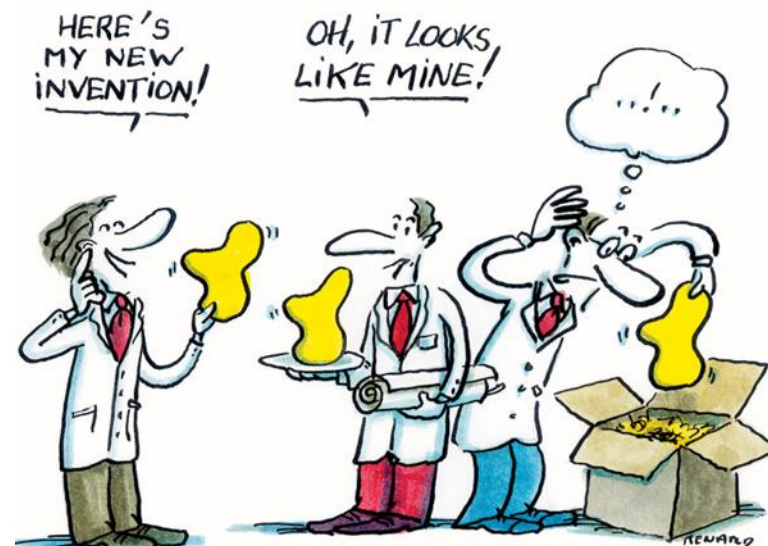
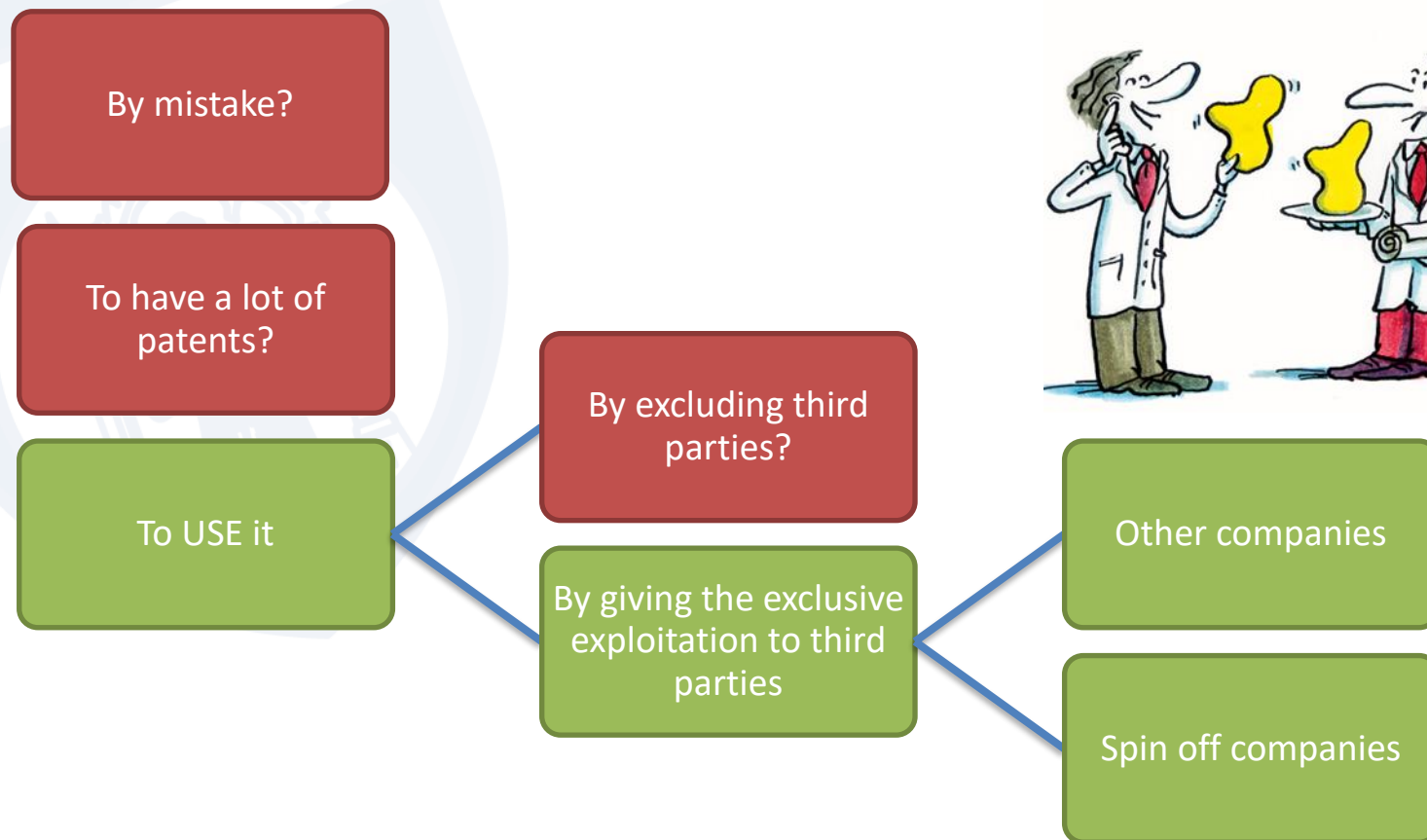
Patents

- Current portfolio: 114 applications (first deposits), half of which extended internationally
- Deposits per year: on average 10-12
- Extensions per year: on average 6-7
- The new inventions arise mainly:
 - from collaboration with IIT (doctoral scholarships)
 - from H2020 projects
 - from research activities with companies
- ... more and more patents in co-ownership

Patent portfolio



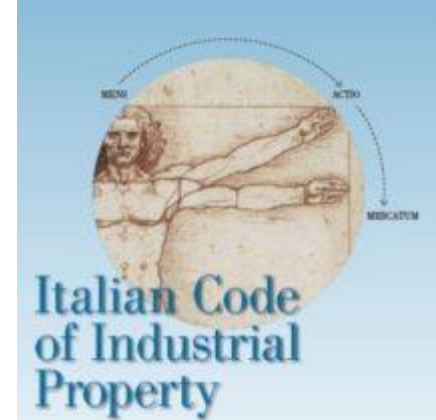
Why we file a patent



How to file a patent

- Understand why we file patents
- Make it clear to researchers (a patent is not a publication!)
- Have policies, procedures and tools (efficiency and effectiveness)
- Select the invention (technical and political skills)
- Commercialize inventions (marketing and negotiating skills)
- Defending the patent
- Have a budget for the first year (no direct returns in the short term)
 - Our University annually allocates a budget dedicated to activities related to intellectual property protection

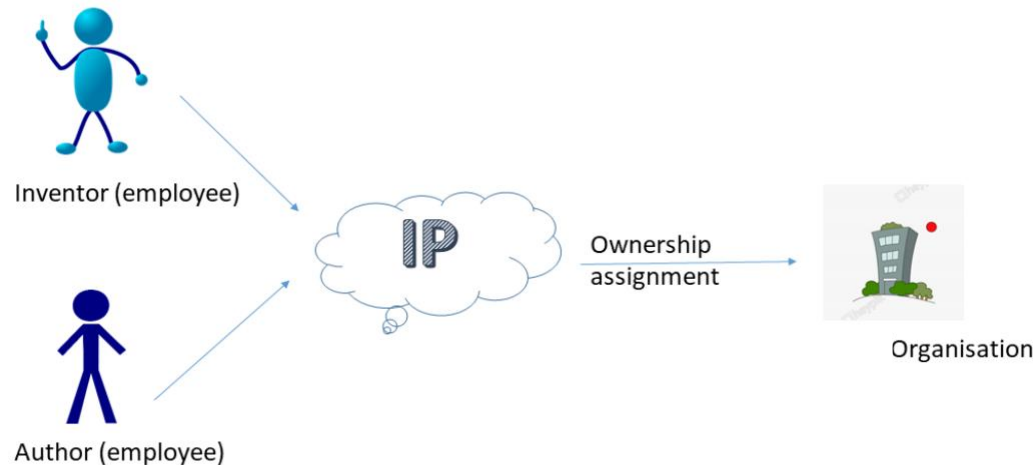
Italian Law on patents



- Industrial Property Code (Legislative Decree No. 30 of February 10, 2005, as amended up to Law No. 102 of July 24, 2023), Italy
- ART. 65 (Inventions of researchers in universities and public research institutions)
- **The researcher (an employee of a university or research body) doesn't own any more the exclusive rights on his patentable invention. ("professor privilege").** It was an exception to the Italian legislation that established the ownership of an invention born during the employment relationship as belonging to the employee (and NOT to the employer). It was an exception also at a European level since in the legislation of any other European state: the rule is that the invention is owned by the employer even if the inventor is a researcher .
- Ownership of patents: patents from research conducted by researchers at universities, public research institutions and institutes will be owned by the respective institutions. This will significantly simplify technology transfer processes and the exploitation of inventions , inventor/researcher always retains the moral right to be identified as inventor.

Inventorship vs ownership

Inventorship and ownership refer to different legal concepts and should not be confused. The exact definition of these legal principles may vary from one country to the next. Overall, inventorship relates to the individual(s) who have contributed to the creation of an invention, whereas ownership is associated with the parties (individuals or entities) who own the proprietary rights of the invention.



Patent Rights

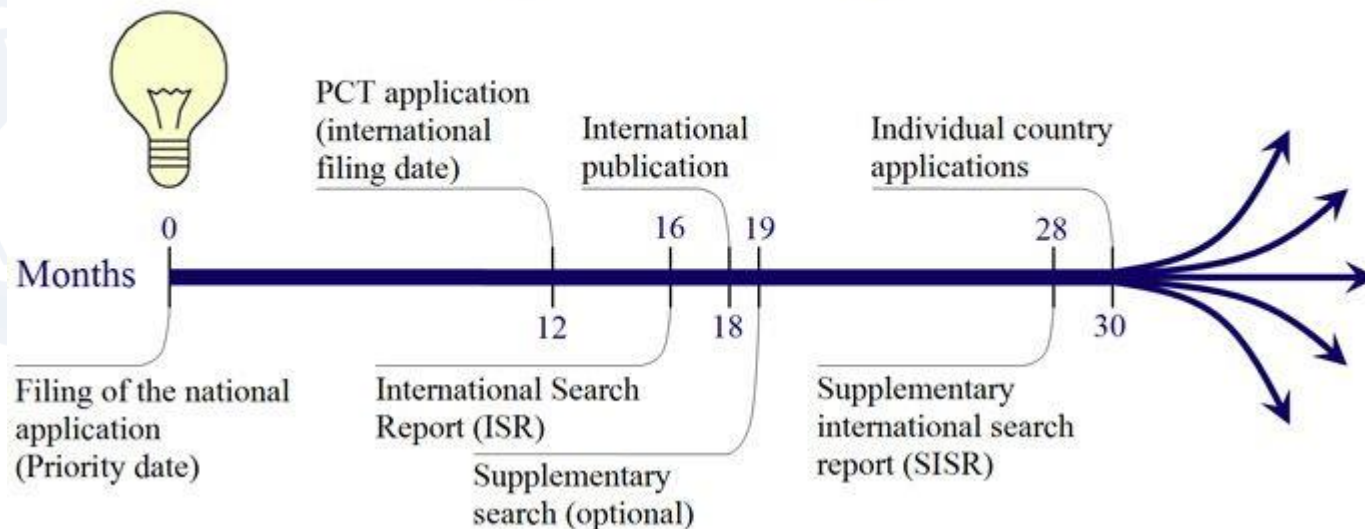
Moral rights are personal rights provided to the inventors to be recognised as the author of the work.

Economic rights are proprietary rights provided to the owner(s) of the invention.

Filing a patent

- When inventions are born from research activities carried out by University employees during their working hours, using the facilities of the University and with financial resources of the University:
 - University obtains the right to file the patent application at its own name and expense, indicating the researcher as inventor

Timeline for Patent application



How to file a patent

University as applicant

- The inventor fills out the IDF (“Innovation disclosure form”) to describe the invention (internal and confidential document)
- Our Office evaluates, through a search on patent databases, the fulfillment of the requirements for patentability:
 - Novelty (the invention must not be present in the state of the art)
 - Inventive step (the invention must not be “obvious” to an expert)
 - Industrial application

IMPORTANT! The invention must not have been published or disseminated by other means (including a dissertation), otherwise there is lack of novelty and can not be patented

How to file a patent

University as applicant

- The “Technology Transfer Committee” of the University assesses the application and approves the filing
- Our Office asks a cost estimation plan to at least three different patent attorneys and picks up the best quality-price offer, then writes down the necessary documentation
- The inventor will work with the selected patent attorney to prepare the patent application.
- After the filing our office, in collaboration with the patent attorney, will follow all the subsequent stages of the application.

The role of researchers

- The researchers have to:
 - Pay more attention to protect intellectual property rights
 - Check the requirements for patentability of an invention before publishing
 - Do not surrender all rights related to the research results in research contracts
 - Pay more attention to the disclosure of information to third parties by entering into appropriate confidentiality agreements during the research activities (NDA)
 - Spend more efforts for the commercial exploitation

... In collaboration with our TTO

After filing: Patent License

- Rights to enhancements or improvements
- Rights to sublicense, assign
- Related R&D contract
- Post-licensing responsibilities
 - Conditions for termination
 - Infringement: responsibilities, obligations, benefits
 - Resolution of disputes between parties
 - Use of names

Patents promotion

knowledge share

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Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria - CREA

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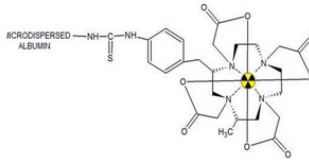
Fondazione Bruno Kessler

HEALTH & BIOMEDICAL

LONGROLL-radiotracer for tumor localization

HEALTHTECH - DIAGNOSTIC IMAGING SOLUTIONS

Microdispersed system for application in localization and treatment that would let schedule surgery on several days, reducing cost of hospitalization.

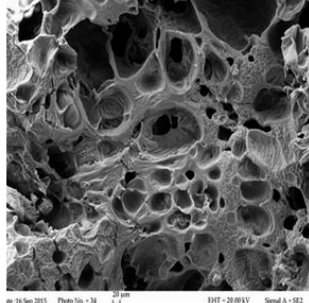


HEALTH & BIOMEDICAL

Scaffold for 3D cell cultures (vitro/vivo)

NEW MATERIALS

Technology potentially biocompatible that thanks to its cross-linked structure is applicable for tissue regeneration devices or advanced therapy.



14 Sep 2015 Photo 510 x 34 20.0kV Signal A x102

License vs. Start-up Company

- Established Companies (Licensees)
 - Have established marketing functions and big markets
 - Know how to manufacture
 - Have capital
 - Better resources to protect the intellectual property
 - May “lose” or “orphan” the technology
- Small or New Companies (Licensees or Start-ups)
 - Can serve specialized, “hands-on” markets
 - Can maintain pace of technological innovation
 - Are organizationally flexible
 - May result in closer long-term relationship for inventor
 - Subject to buyout or rapid change of plans

Negotiation Parameters - License Terms

- Define the licensed rights (What is the licensee getting?)
- Exclusivity
- Territory of use (geographic)
- Field-of-use (technological)
- Milestones toward commercialization
- Proofs of diligence by licensee in executing the license
- Royalties and other payments
- Reimbursements

Licensing for free

Easy Access IP model offers certain technologies for free, in combination with a simple licence agreement. There are no licence fees or royalties but licensees will be required to pay for the ongoing patent costs.

It offers an opportunity to build relationships within industry and provides a mechanism to release technology to those who may be able to further develop it.

Technologies available through Easy Access IP are usually considered to be a low technical readiness for commercialisation; with limited funding this means Dstl are not always able to develop it.

Intellectual property protection and valorization: challenges

- Increasing IP awareness across academic community
- Patent portfolio management (patent selection)
- Improve patent exploitation strategy: licensing, spin-off negotiation

Industrial research support

Industrial research projects

- Regional Administration High level Training - FSE 2014-2020 (research grants)
- Regional Administration collaborative research projects
- Regional Administration Rural Development Found
- Research and University National Ministry FAR
- MIUR National Technology Cluster
- MIUR Smart Cities and Communities and Social Innovation
- MISE Energia e Eurotransbio
- National level PNRR - National Recovery and Resilience Plan
- EU level – path finde; ERC; EIT (KIC-Knowledge and Innovation Communities): DIGITAL, URBAN MOBILITY

Support services

- Scouting, promotion and dissemination of funding opportunities in support of joint collaboration between Enterprises and Universities and for the creation and growth of start-ups/spin off
- Relationships with public and private bodies of the territorial, economic and social context
- Relationships and collaborations with Technological Clusters and industrial associations
- Relationships and collaborations with thematic networks between Italian and European universities ([Netval](#) and [Euipo](#))
- Management support for industrial research and technology transfer projects (PoC)
- Administrative support to research laboratories

Relationship with Research Office

- EU Funded Programmes; for IP management support and where an industrial partner is needed
- Consortium Agreements in Horizon Europe Projects
- Framework agreement between University and Industry ([NDA](#) – [MTA](#))
- Research Contracts (Results ownership – background - confidentiality)
- Monitoring research results

Relationship with Departments

On Intellectual Property:

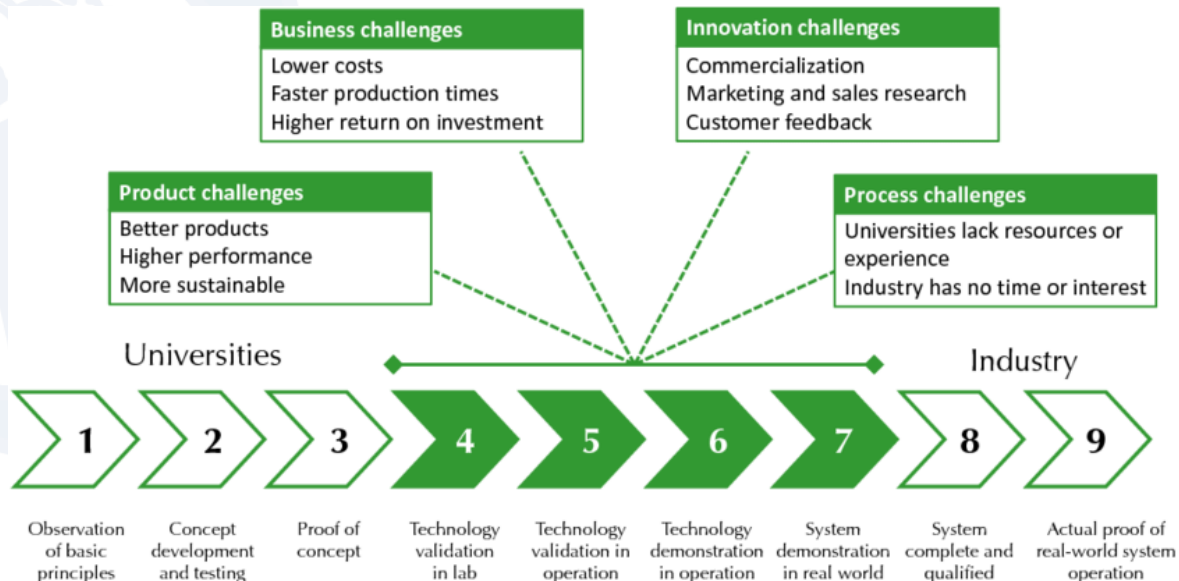
- Advice on how to protect research results
- Management of research results in
 - EU Funded Project
 - Collaborative research
 - Research between Industry and University

On research projects:

- Dissemination of information related to call for National/EU Funded projects where both Universities and Industries are involved
- Support in the application
- Follow up of the project if approved

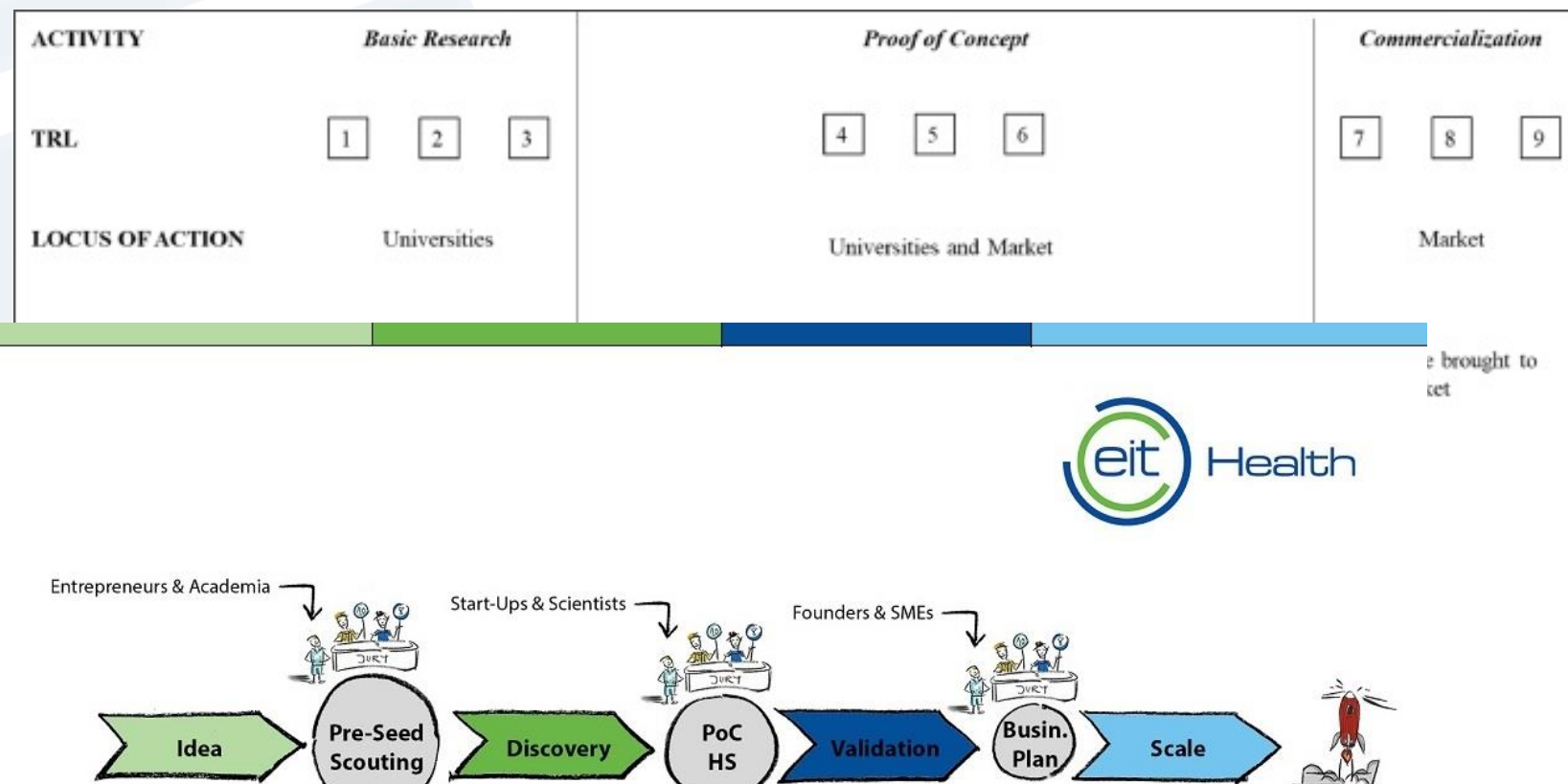
Industrial research projects:

- In order to overcome the factors that limit the commercialization of embryonic research-based inventions (RBIs), a growing number of universities are resorting to Proof of Concept programs (PoCs)



Proof of Concept programs

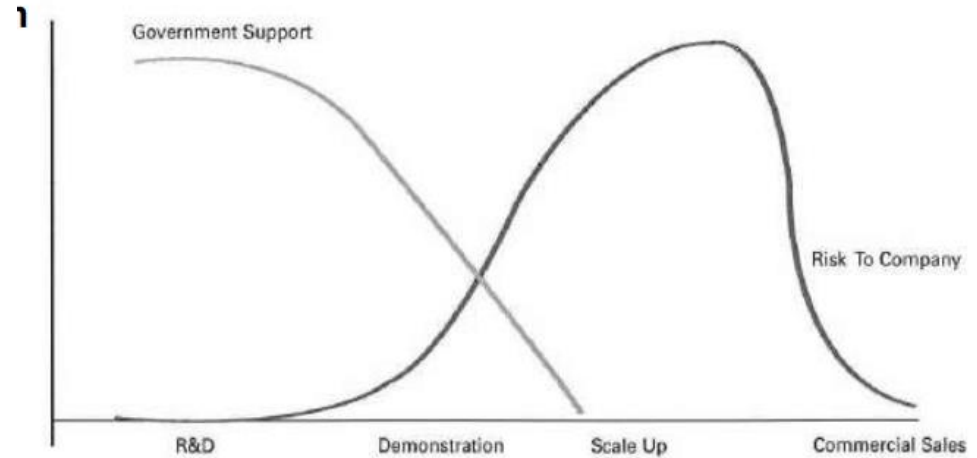
PoCs are structured in three different phases: i) the preparatory phase; ii) the evaluation phase and iii) the execution phase. Build up your tech (BUYT)



Networking

■ National technology Calusters

- [Smart Factory](#) (CFI)
- [Trasporti Italia 2020](#)
- [Cultural Heritage \(TICHE\)](#)
- [Energy](#)
- [Blue Italian Growth](#) (BIG)
- [Agrifood](#) (CLAN)
- [Green Chemistry](#) (SPRING)



Source: DTI (2006:13).

In 2012, MIUR - Ministry of Education, the University and Research promoted the establishment and development of the first eight Italian technology clusters. Technology Clusters are networks of various associations of public and private entities which work throughout Italy in sectors such as industrial research, training and technology transfer. Clusters act as resource catalysts to answer the needs of the region and market, and coordinate and strengthen the connection between research and businesses with a multi-disciplinary approach.

2 Regional districts



SIIT
(Integrated Intelligent
Systems and Technologies)



DLTM
(Ligurian National Cluster
for Marine Technologies)

8 Regional clusters in Liguria

TICASS

(Innovative Technologies
for Sustainable
Development and
Environmental Control)

Sustainable Energy

(Ligurian Regional Cluster
for Sustainable Energy)

TRANSIT

(Network Security
Technologies and Advanced
Search Intermodality in
Transportation)

SOSIA

(System of Systems
Intelligent Automation)

SI4Life

(Science and Companies
together to improve the
quality of life)

TECNOBIONET

(Ligurian Regional Cluster
for Biomedical
Technologies)

POLITECMED

(Ligurian Regional Cluster
for Medical Technologies)

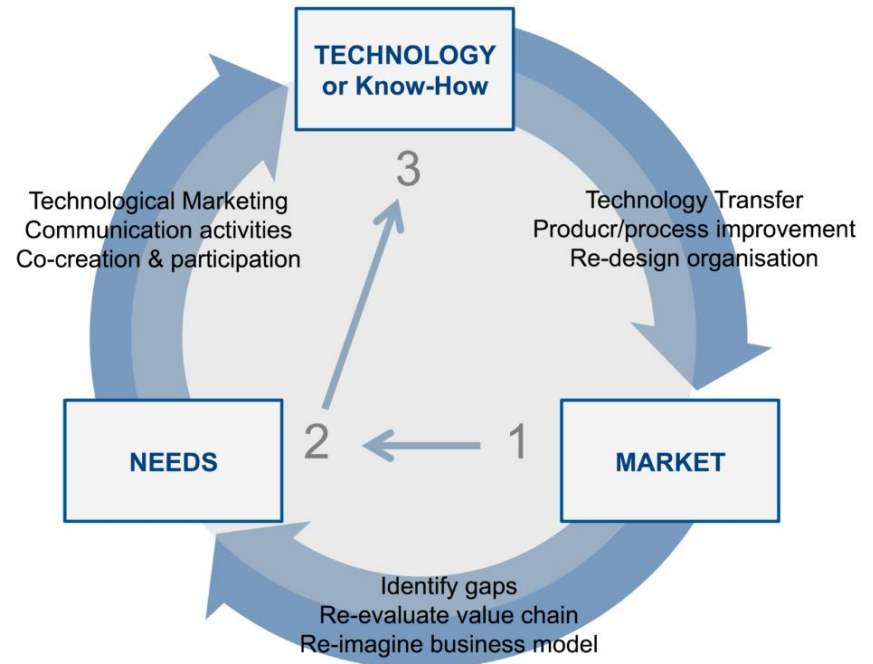
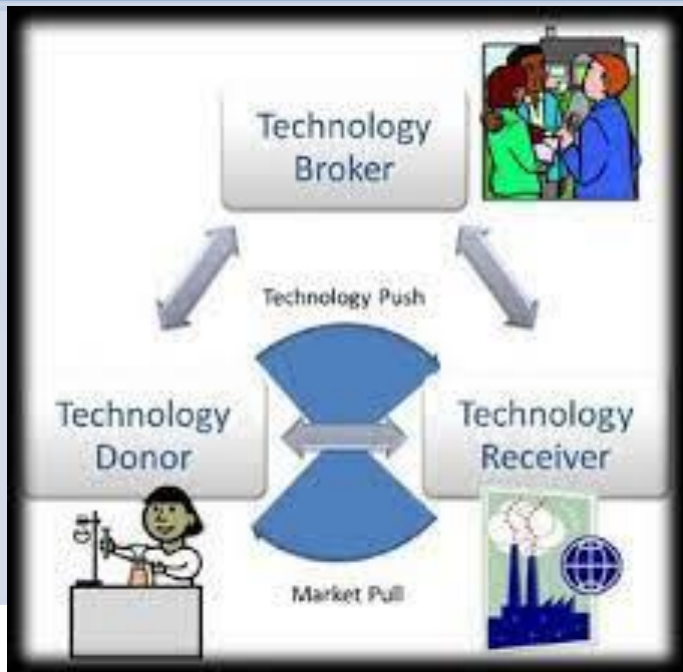
DLTM

(Ligurian Regional Cluster
for Marine Technologies)

Industrial research support: challenges

- Broadening the range of researchers applying
- Strengthen and orient the relationship with poles, districts, ...
- Managing the relationship with major lenders in the medium to long term

Technology supply demand match



Other activities

- Research results screening across departments
- Networking and trust building with local industries
- Promotion and exploitation of University patent portfolio
- Identification of possible channels of public / private financing for the development of patents owned by the University
- Promotion of technology transfer activities
- Matchmaking events planning
- Monitoring of technology transfer results

Tech Check project

Monitoring of research, development and innovative technologies needs by local enterprises, mapping of the skills and services offered by the University and related matching activities with departmental structures

- Supply/demand questionnaires (first contact)
- Database of Enterprises of the territory
- Organization of meetings with companies and departments/researchers
- Identification of departments, centres, laboratories and researchers to promote research and development activities based on the needs of innovation of companies
- Partnership activation for industrial research and experimental development projects

Thematic Catalogues

Agrifood sector: research fields, innovative technologies, patents and start up

Blue Economy sector

Cultural Heritage sector

Security sector

Other catalogues:

- **Spin off**
- **Technology Offer**

In progress:

- **Patents**
- **Laboratories**
- **Robotics and artificial intelligence**



UniGe Technology Transfer Laboratory (UniGeTTLab)

Project submitted in response to the Call for Funding Technology Transfer Offices (UTT), was approved and financed by MISE.

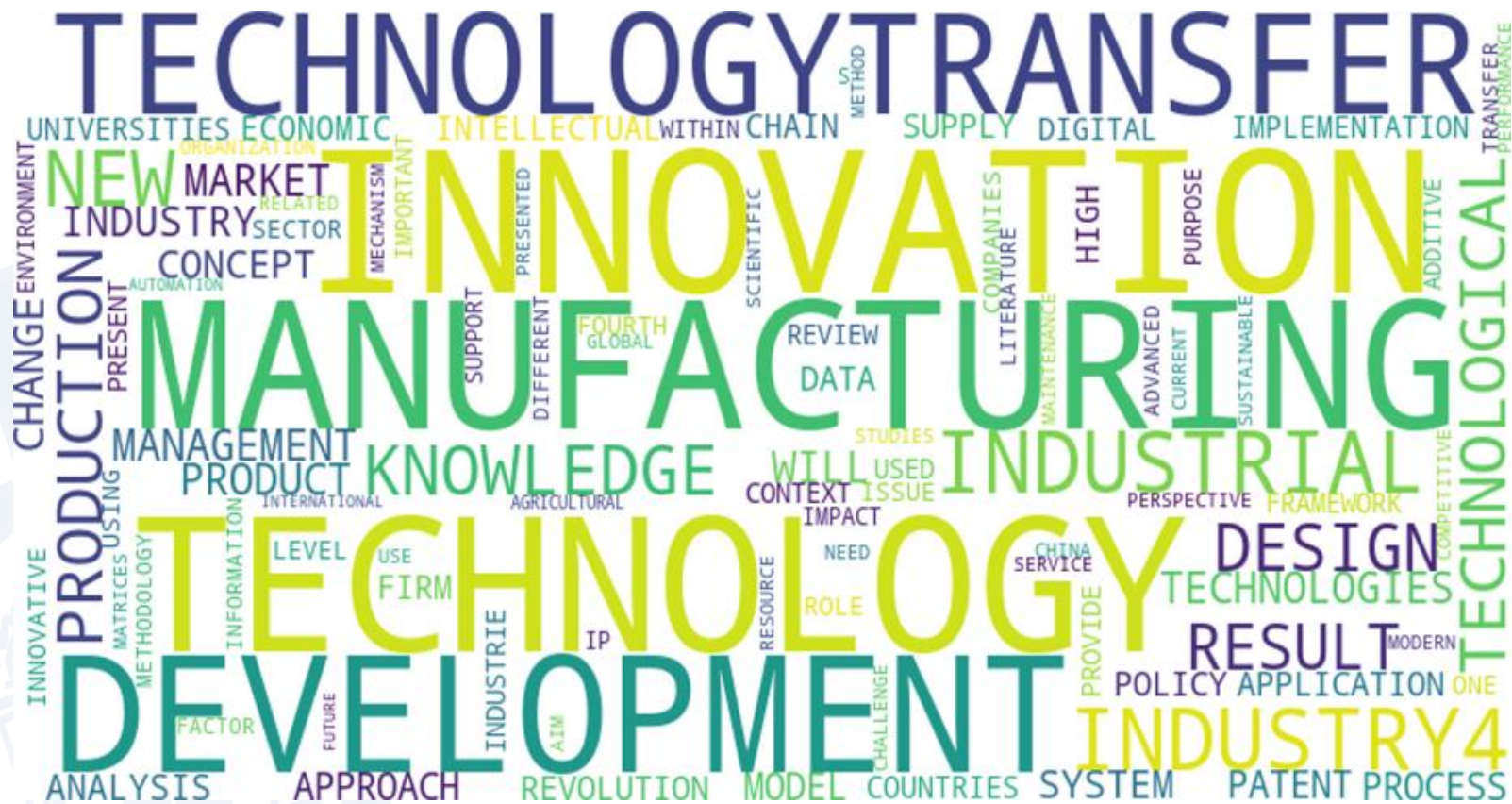
University aims to implement the activities undertaken in the field of technology transfer with the collaboration of a new staff of "Knowledge Transfer Manager" which will have the task of creating a link between the university's research laboratories and the industrial reality.

Start of the Fellowship for two years: 4 January 2021

Second round project is still on-going

Technology supply demand match: challenges

- Focus on strategic excellence/areas
- Strengthen the analysis tools of our excellence
- Give «life» and coordination to framework conventions - build an integrated db and a model
- Offering integrated innovation/training/placement services to large companies
- To exploit the innovative potential of the enterprise in optic of third mission



KEYWORDS

RELATIONSHIPS

TEAMWORK

TRUST

SUCCESS STORIES

COLLABORATIONS

INCREMENTAL ACTIVITY

HUMAN RESOURCES

Дякую!

... questions?

For further informations:

trasferimentotecnologico@unige.it

brevetti@unige.it



Sara Cepolina

<http://www.unige.it>

Email: sara.cepolina@unige.it