Il valore della Proprietà Intellettuale lungo il processo di sviluppo tecnologico
La valorizzazione della ricerca

IDEA SCOUTING
Politecnico di Milano scouts new innovative ideas and technologies through reactive and proactive activities (e.g. Disclosures and Call 4 Ideas)

TECHNOLOGY VALIDATION AND STARTUP ACCELERATION
Flexible approach to all stages of the innovation process:
- Politecnico di Milano plays an influential role in the innovation development process thanks to the ability to scale it up with the chosen industrial partners.
- Through acceleration programs PoliHub provides support in validating ideas, design business models, set up and execute strategies through dedicated supporting value added service

LICENSING & START-UP GROWTH
An established network of academics, and Industrial partners as well as institutions and investors allows the innovation ecosystem to flourish. Licensing allows successful long term partnerships and generate additional research funding. Startups creation foster cross-fertilization processes among all the different players.

RESEARCH

VALORIZATION

IMPACT
The innovation turned into new products/technologies reaches the market becoming value for the society and generating impact on the territory.
Un modello organizzativo

Technology Transfer Office (TTO)
TTO is the Politecnico di Milano area that supports the development and transfer of intellectual property stemmed from research results and activities (such as know-how, patents, designs, trademarks, software)

PoliHub (startup district and incubator)
PoliHub is the District & Startup Incubator of Politecnico di Milano, is a ltd company managed by Fondazione Politecnico and its consortia (MIP, Poli.Design and CEFRIEL) providing support to high innovative startups operating in different fields of innovation.
**Servizi di supporto al trasferimento tecnologico**

**IDEA**
- **Scouting**
  Access the research outputs to generate innovation disclosures

**VALIDATION**
- **Increase TRL**
  Effectively evaluate and manage the maturation of new technologies to reduce the uncertainty by investing in research and development programs

- **Idea Assessment**
  Strength the idea through IP: Idea assessment and Prior Art Search

**LICENSING**
- **Industry Funded Research**
  Attract Research funding through the development of cutting-edge technologies.

- **IP Strategy**
  Collaborations with Patent firms to develop an IP strategy. Improve decision making through research and analysis.

- **IP Marketing**
  Identify the best route to market by working closely with project innovators, brokers, and industry partners.

- **Tech Pack**
  Build awareness, visibility and increase the likely success, both technical and commercial, of new scientific ideas.

- **Risk & Revenue Share Approach**
  Exploitation model that involve technology co-development by combining different expertise and capabilities.

- **IP transfer & Spin-off generation**
  Approach different partners and negotiate a license that will bring revenues, including valorization through Spin-off generation process.

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**Research** | **Valorisation** | **Market**

**POLITECNICO MILANO 1863**
Servizi di accelerazione imprenditoriale

**Access to funding**
Tailored service to support start-ups in the fundraising activity

**Acceleration**
Programs conceived to turn ideas into a minimum viable product with the help of a dedicated task force (mentors, tutors and experts)

**Mentorship**
Dedicated mentors guide a start-up through a customized journey, to validate the business model and set a consistent strategy

**Advisory**
Ad hoc consulting service mainly focused on internationalization and opening of distribution channels

**start-up toolkit**
Package of wide, high quality and free services which every incubated start-up can have access to, in every stage of their life (legal and fiscal advisory, strategy consulting, technology development, IP protection, pitch presentation design, business management education, investment readiness, media marketing)

**Spaces & Facilities**

<table>
<thead>
<tr>
<th>IDEA</th>
<th>start-up</th>
<th>COMPANY</th>
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</table>

Lifecycle Stage
L’organigramma

Technology Transfer Office (TTO)

General Manager
Graziano Dragoni

Head of Technology Transfer
Roberto Tiezzi

Legal Advisor

Industry commissioned Research Manager

Industry collaborations
Ing. Tedesco

Technology Transfer Managers

Chemistry & Mechanics
Dr. Barbieri
Ing. Beatrice Saglio

Physics & Electronics & ICT
Ing. Roiati
Ing. Ayoub El Ziani

Bioengineering & Medical devices
Ing. Bagnoli

Design & Architecture & Spinoff
Arch. Colombo

Innovation Promoters

Contract reviewing
Dr. Garbagnati

Marketing & Project management
Dr. Balloi

Marketing & Project management
Dr. Bianco

Polihub (startup district and incubator)

CEO
Stefano Mainetti

General Manager
Claudia Pingue

Administration
Serena Ottaviani - Daniele Massa

Facility manager
Mauro Croce

Selection process Coordinator
D. Pannofino

Start-up Coordinator and Investor Relation Leader
F. Biancon

Junior Start-up Business Analyst
G. Taydas

Junior Start-up Business Analyst
S. Borda

Head of Corporate Solutions
S. Mizio

Junior Start-up Business Analyst
A. Marzano
R. Mallia

Marketing Manager
M. Acosta Voltolini

Junior Communication Designer
A. Asaro
Il processo di supporto tecnologico e di business

<table>
<thead>
<tr>
<th>Goals</th>
<th>Research</th>
<th>IP Generation</th>
<th>Corporate Licensing</th>
<th>Business Creation</th>
<th>Growth</th>
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<tbody>
<tr>
<td></td>
<td>Basic&amp;Applied Research Projects (Polimi/Ita/EU)</td>
<td>IP Assessment</td>
<td>Advanced technology demonstration</td>
<td>Incubation</td>
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<td></td>
<td>Joint Research Projects</td>
<td>IP Protection</td>
<td>Customer discovery</td>
<td>Innovation District</td>
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<td>Validation plan definition</td>
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<td>Business model validation</td>
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<td>Prototyping</td>
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<td>Go-to-market strategy</td>
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<td>Management support</td>
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<td>Seed Investment readiness</td>
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<td>Corporate licensing</td>
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<thead>
<tr>
<th>Process Ownership</th>
<th>1-4 years</th>
<th>6-12 months</th>
<th>4-12 months</th>
<th>4-8 years</th>
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<tbody>
<tr>
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<td>Corporate Licensing</td>
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<tr>
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<th>Seed</th>
<th>Bridge, Round A/B</th>
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**Politecnico Milano 1863**
Approccio chiuso all’innovazione

Innovation Projects

Current Markets
Approccio aperto all’innovazione

Innovation Projects → New markets

Current Markets
Il modello di Open Innovation
Il percorso di sviluppo tecnologico

Ricerca e Sviluppo

Commercializzazione

Rischio tecnologico

Risorse R&D

Impatto economico-finanziario (FCF)
Attualizzare il valore economico futuro, scontando il rischio tecnologico in funzione della collocazione nel percorso di sviluppo

Technology Readiness Levels
(TRL system in H2020)
Il valore della tecnologia innovativa

Attribuzione di un valore opportunità per la realizzazione di un business futuro

- Ricerca e Sviluppo
- Industrializzazione
- Commercializzazione

RICERCA → SOLUZIONE → SVILUPPO → PROTOTIPO → PRODOTTO → MERCATO

Valore economico della tecnologia

+ investimenti
- rischio

$t$
Lo schema di licensing

Lo schema tipico di una licenza prevede di articolare la remunerazione in relazione al valore-opportunità, alle milestones di sviluppo e ai risultati della commercializzazione, diversificando le tipologie di compensi e ancorando tali compensi all’accrescere del valore della tecnologia nel tempo.
Case study: Greenvalve energy recovery control valve

IDEA
Prof. Stefano Malavasi, Dipartimento di Idraulica

2012
First Patent

2015
Second Patent

Laboratory Prototype

Electronics

Industrial Prototype

Lab Test and Technology Development

TECHNOLOGY TRANSFER FUND

Speed to Market

ENERGY RECOVERY

SMART SYSTEM
- Self-Control
- Wireless Communication
- Sensors
- Energy Re-cycle

APPLICATIONS
- Water Systems
- Industrial Plants
- District Heating
Case study: ISOLATION FROM VIBRATIONS & NOISE AFFECT

SMART TECHNOLOGY

- **Modular structure**: the technology is independent from the dimension and the material, since its only function of the topological design of the modular structure.
- **High Performances**: Vibrations reduced of 10 orders of magnitude, and can be modulated for the frequency of the vibrations source.
- **Low OPEX costs**: possibility to install the technology next to the vibration source, without modify the existing infrastructure.

APPLICATIONS

- Industrial & manufacturing
- Railways & Transportation
- Architectural & Construction
- Other applications

PHONONIC VIBES
FOR A VIBRATION FREE WORLD

IDEA
PhD Luca D’Alessandro, Prof. Alberto Corigliano, Department of civil and environment engineering

Laboratory Prototype

TRL 4 - 5 Vibration prototype

Technology Development and Validation

TRL 4 - 5 Acoustic prototype

Innovation

- Oct 2017 Primo Brevetto
- Jan 2018 Secondo Brevetto

Speed to Market
TECHNOLOGY TRANSFER FUND

- Laboratory Prototype
  - Grant 30k€
- TRL 4 - 5 Vibration prototype
- Technology Development and Validation
- TRL 4 - 5 Acoustic prototype
- Award 20k€
- Secondo Brevetto
- InnoDiver call 25k€ with pantecnica

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Determinazione del valore

Interconnessione tra mercato degli IPRs e mercato delle tecnologie:

- Investimenti realizzati
- TRL
- Impatto economico-finanziario

Approcci:
- Previsione dei Free Cash Flow
- Definizione negoziale del valore

 Principali attori:
Technology Transfer Office, Venture Capital, Corporation
Determinanti del valore

- Titolo di Proprietà Industriale
- TRL – Technology Readiness Level
- Investimenti Sviluppo Industrializzazione
- Conoscenze Tacite Know-How