

Innovation and Technology Transfer at the University of Milan



Alberto Silvani, director of UNIMITT
Centre for Innovation and Technology Transfer
of the University of Milan
Tokyo, January 23rd, 2009



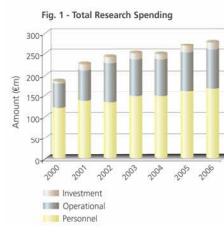
Research at the University of Milan

With a **Faculty of 2,500** units, the University of Milan has an outstanding research reputation in several scientific fields, in particular in Life Sciences.

High level research is carried out in molecular genetics, functional genomics, pharmacology and physical science.

The University of Milan is the only Italian university among the 20 members of **LERU (League of European Research Universities)**

The **financial commitment** to research has committed constantly over the years despite periodic downturns in the national and international economies



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The Path towards an "Entrepreneurial University"

The University is an **economic** as well as a **cultural** actor

New functions are covered: not only education, teaching and research activities but, furthermore, explicit contribution to local economic and social development and direct promotion of knowledge

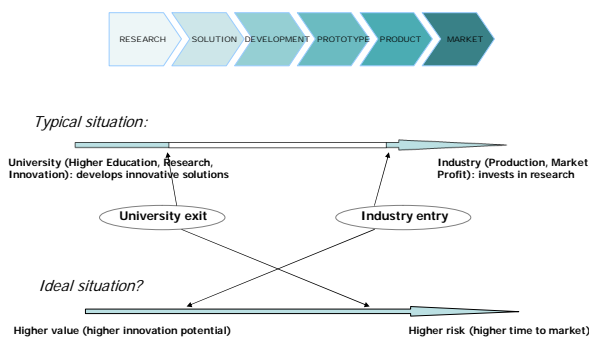
New links and demand/supply interaction: new sources, increasing time to market, lesser steps, more complexity and systemic approach, improved attention to users

4 main channels:

- Open diffusion of results: research as a public good >>> **Publications**
- Attention to the potential economic exploitation >>> **Patents**
- Temporary mobility of human resources >>> **Human capital**
- Generation of new entrepreneurial ideas >>> **Science and tech-based firms**

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The Innovation Process: the Gap between Research and Industry



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UNIMITT: A new vision for dealing with innovation and tech transfer matters at the University of Milan

The need for an ad-hoc entity to support research exploitation processes was met through **the creation of UNIMITT on May 1st 2005**

The Centre's main objective is to support the University in its entrepreneurial role by providing instruments and competences to: **bridge the gap between research, innovation and technology transfer**

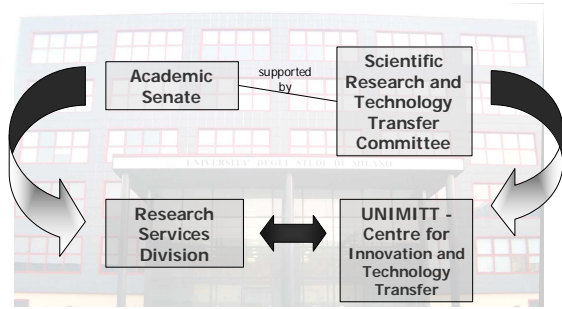
4 major stakeholder groups:

- Internal groups, structures and subjects
- Entities and institutions
- Enterprises
- Public administrations

As an autonomous unit of the University of Milan UNIMITT receives a yearly working fund from the University (licensing revenues are managed directly by University, while other sources of income are the participation to calls for proposals and consultancy services)

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The Management of Research at the University of Milan



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UNIMITT Strategy

- Moving attention to exploitation from the end of activities (results) to the early stages of research (planning and contracts):
 - >>> **SETTING VALUE ON KNOW-HOW BY IDENTIFYING POTENTIAL RESULTS**
- Increasing consensus among the various university components by diversifying provided services:
 - >>> **THE VALUE CHAIN IS BASED ON A WIDE RANGE OF SKILLS**
- Focusing on products rather than services while avoiding an internalisation within the University of functions that are better found outside:
 - >>> **QUALIFYING FUNCTIONS WITH THE PROPER PROFESSIONAL LEVEL**
- Offering added value through the development of a University dimension:
 - >>> **IMPROVING A SYSTEM VISION THROUGH COMMON POLICIES**
- Learning from experiences, both positive and negative:
 - >>> **THE LEARNING CURVE LEVERS ON HUMAN RESOURCES**
- Balancing University activities and participated ones:
 - >>> **ADDRESSING RESULTS TO STRUCTURES, MANAGING IMPACTS**

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UNIMITT Functions

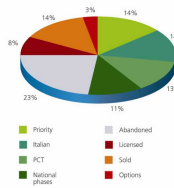
- Organising technology transfer and bringing inventions and know-how to market
 >>> **Technology Transfer Office**
- Establishing relations with external entities and promoting a policy of cooperation for implementing common activities and sharing projects and competences
 >>> **Industrial Liaison Office**
- Developing competences and knowledge for interpreting the phenomena at stake, through studies, collaborations and analyses
 >>> **Innovation & Science Policy Unit**

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UNIMITT TTO Function: Patents

- Patent activities:
- ✓ guidance to inventors
 - ✓ patent application strategies
 - ✓ management of the patent portfolio
 - ✓ Patent Committee support activities
 - ✓ revision of the Patent Regulation

Fig. 8 - Patent Portfolio Composition



Patents as of December 2008:

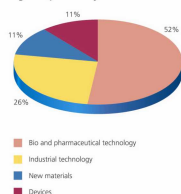
- 140 patent applications (constant growth since 1992)
- exclusive ownership of 66% of the patent portfolio
- co-ownership with universities and foreign research centres
- transfer of 25% of patents (license/assignment agreements)
- 10% are currently undergoing negotiation
- secrecy agreements for 1/3 of patents

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UNIMITT TTO Function: Spin-offs

- Spin-off activities:
- ✓ guidance and training to future entrepreneurs
 - ✓ support to business planning
 - ✓ Spin-off Committee support activities
 - ✓ revision of Spin-off Regulation

Fig. 9 - Spin-offs by Area



Spin-offs as of December 2008:

- 20 spin-off companies
- 9 over 20 participated by industrial partners or investors
- over 60% achieving positive results
- at least 3 cases of excellence: Petroceramics, Tethis, Congenia

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UNIMITT ILO and Science Policy Unit Functions

- ✓ UNIMITT promotes a strategy of **collaboration** with both local and international organizations (universities, territorial entities, private investors, associations and agencies) in order to provide the basis for collaborative research projects and create new technology transfer opportunities
- ✓ UNIMITT boosts the **strategic planning** capacities of UNIMI in the fields of innovation and technology transfer through close cooperation with the latter's scientific and administrative bodies and performs the functions of a technical structure of scientific politics

Such activities are aimed at:

- increasing scientific productivity
- highering research quality
- supporting economic growth in the external environment

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UNIMITT: Across the Functions

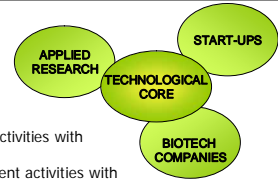
- ✓ **Analyses and reports** on transfer, innovation, marketing opportunities
- ✓ **Professor and researcher-targeted activities** aimed at increasing their exploitation propensity
- ✓ **Training activities** for the dissemination of IP culture and innovation management skills
- ✓ **Communication tools and events** to increase the visibility of the University's innovation offer
- ✓ **Networking** with the main innovation actors at local and international level

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Fondazione Filarete: Accelerator for Biotechnology and Biomedicine

Partnership:
University of Milan with financial institutions, foundations and local actors



- Objectives:**
- Integration of technology transfer activities with major applied research activities
 - Integration of technology development activities with management and financial support services
 - Development of skills and competences for the creation and management of technology-based entrepreneurial activities, infrastructures and services
- Current activities:**
- Benchmarking of European and American research
 - Coordination of scouting activities, candidate selection and analysis
 - Definition of the technological infrastructure and organization
 - Governance and related initiatives

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Technology Transfer in Italy: Netval Survey 2007 (1)

- Around 50 TTOs in Italy (mainly small organizations)

Main TTO functions:

- Spin-off creation support: 89,8%
- IP management: 87,8%
- Licensing management: 63,3%
- Industry research and collaboration contract management: 63,3%
- Research and consultancy contract management: 49%
- Research fund management: 22,4%
- Continuous training: 20,4%
- Technical services: 16,3%
- Scientific parks/incubator management: 10,2%
- Seed capital fund management: 8,2%

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Technology Transfer in Italy: Netval Survey 2007 (2)

Patents:

- 300 patent applications
- 65 granted patents
- of which are 27 European patents (they were 8 in 2002) → higher quality
- 1.500 patents in Italian universities' portfolios

Licenses:

- 73 license and option agreements (doubled with respect to 2004)
- 1,2 mln euros revenues

Research contracts:

- 1100 contracts
- 33 mln euros revenues

Spin-offs:

- 270 active spin-off companies
- 55 new companies in 2006

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IP in Italy: a peculiar situation

- ✓ Italy is one of the very few countries in which the "professor privilege" still exists
 - ✓ The law distinguishes between inventions by "private company employees" and inventions by "public institution researchers"
- In the latter case:
- ✓ If research funds come from the University, the researchers are the sole owners of the IP rights (*minimum 30% of future income is owed to the institution*)
 - ✓ On the contrary, if a third party contributes to research funding, the University negotiates IP rights ownership

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Consequences and accomplishments

- ✓ It might be not so trivial to define who is the **real owner** of the IP rights
- ✓ Since sponsored research is the most common case, the University often has to **negotiate** IP rights with third parties
- ✓ Almost all Italian Universities have a **set of rules** on IP
- ✓ If the inventor transfers his rights to the University, he renounces a part of his income, but he will receive **assistance** from the TTO of the University in terms of both financial and managerial support.
- ✓ **As a consequence, the large majority of University inventors use agreements and services offered by internal structures**

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**Reasons and advantages for patenting
through the University**

- ✓ The University cannot directly use its research products: patenting is one of the ways to transfer them to the industry
- ✓ Patenting is not in contrast with publishing and a granted patent is valuable as a form of publication in itself
- ✓ A Patent Portfolio increases the University value in terms of educational offer and research
- ✓ Furthermore, it increases relationships with third parties (public and private institutions, industries) and financing opportunities to support further research
- ✓ It promotes the discussion on strategies to protect and exploit intellectual property and create a culture of innovation
- ✓ Exploitation of research products can benefit society from an economic and social point of view

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Thank you for your attention!

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