Academic Entrepreneurship and Start-up Creation

Crash Course on Research Funding, Intellectual Property and Start up Creation

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The start up and research start up regulation of the University of Trento (July 2015) identifies two types of business entities:

- **Start up (maximum 5 years):** any business entity in which the University may be a shareholder and aiming at developing, producing and selling goods and services that are the results of the University's research activities and to which the applicants gave their contribution (Technology Readiness Level 7-9 – higher Customer Readiness Level);

- **Research Start-up (maximum 3 years):** any business entity in which the University may be a shareholder and aiming at developing **pre-competitive products and services** that are the results of the University's research activities and to which the applicants gave their contribution (Technology Readiness Level 5-7 – lower Customer Readiness Level).
Technology Readiness Levels (TRL) according to Horizon 2020 Framework

TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies)
TRL 8 – system complete and qualified
TRL 7 – system prototype demonstration in operational environment
TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 4 – technology validated in lab
TRL 3 – experimental proof of concept
TRL 2 – technology concept formulated
TRL 1 – basic principles observed
Customer Readiness Level (CRL)

CRL 9 – Widespread product sales
CRL 8 – First product sold
CRL 7 – Customer in extended product testing and/or first test sales
CRL 6 – Benefits of the product confirmed through partnerships and/or first customer testing
CRL 5 – Established relations with target customers/users
CRL 4 – Confirmed needs from several customers and/or users
CRL 3 – First market feedback established
CRL 2 – Identified specific needs in market
CRL 1 – Hypothesizing on possible needs in market

Source: Appendix 3 FAQ – EIT Raw Materials 2016 Kava Call
Some Examples:

RoboSense - www.robosense.it (research start up) @ Crash Course May 4
Mountain-eering - www.mountain-eering.com (ended start up phase)
Timber tech - www.timbertech.it/en (ended research start up)
## Tools for Research Start up Development (all sectors)

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- **Expansion**: Venture Capitals
Process of technology disclosure and start up creation – University of Trento
Pre-incubation assessment Methods and Tools
IP and Start up Creation (UniTrento tools)

Technology/Invention Disclosure

Start Up Assessment tools

Intellectual Property / Copyright Assessment

Start up - Business Plan
## Pre-incubation assessment Methods and Tools

### IP and Start up Creation (UniTrento tools)

### Technology/Invention Disclosure

1. Technology Scouting (Disclosure Form)
2. Technology competitive analysis
3. Time to market / commercial contacts
4. TRL analysis

### Start Up Assessment tools

1. Link/Connection with research from UNITrento
2. Entrepreneurial Idea and Team (Business Model Canvas)
3. Minimum Viable Product (MVP) Analysis and Lean Start up
4. Market potential evaluation
5. Access to preincubation funding / prizes
6. Need for incubation spaces

### Intellectual Property / Copyright Assessment

1. Questel – Patent competitive intelligence
2. Google Patents / Espacenet
3. Freedom of use of research results
4. CA Analysis (Transfer of Foreground / Joint Ownership)
5. Analysis of ownership of research results
6. Copyright analysis (software)

### Start up - Business Plan

1. Business Plan format for research start ups
2. Market feasibility check
3. Financial feasibility check
4. Clients feasibility check
5. Product feasibility check
6. Start up ownership check
Research Start up – Business Plan

**Business Plan Format (available on line) – Table of Contents**

1. Executive Summary
2. Entrepreneurial Idea
3. Market
4. Start up Project
5. Marketing and commercial strategies
6. Financial Projections
Support to spin-off and start up creation since 2007, from the technology disclosure to the business idea and the final approval

- National and internal regulation of the University of Trento (revised in 2015)
- 6 steps of implementation:
  1. Technology disclosure
  2. Start Up Commission
  3. Academic Senate
  4. Council of Administration (CDA)
  5. Company foundation
  6. Closing phase
D2T Start Cup - www.premiod2t.it
Trentino Sviluppo - www.trentinosviluppo.it
Progetto Manifattura - www.progettomanifattura.it
Polo Meccatronica - http://polomeccatronica.it
Areas of Activity – Knowledge Transfer
University of Trento

Technology Disclosure
Technology Scouting
Education on entrepreneurship and Intellectual Property
Research dissemination and public engagement

IPR strategies (in research contracts and Consortium Agreements)
Patenting
Open Data and Copyright of research results

Start up creation
Business planning
Venture & START UP financing
Financing schemes for Technology and Knowledge Transfer

Industry – Academia relationships
R &D projects between Industry and university
Industrial Problem Solving with Physics (IPSP) – 2° edition
Crash Course on Research Funding, Intellectual Property and start up Creation (7° edition)
Contacts

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