Research Valorization and promotion of **Entrepreneurial Spirit** at the Universitat Politècnica de Catalunya

TEACHING MATERIAL
*(Pilot project 2011)*
Session schema

INDEX

A. UPC Barcelona Tech – Universitat Politècnica de Catalunya
   General / Technology Transfer

B. Programa Innova UPC
   Activities-Services / Examples (DEXMA)

C. Entrepreneur Profile
   Skills-Competences / Com és la persona emprendora avui dia?

D. Current / Futur Entrepreneurs
   Process / Tips / Tools
The **Universitat Politècnica de Catalunya** (UPC) is a public institution of higher education and research, specialized in the fields of architecture science and engineering.

**Some data**

- 40 Departments
- 24 Educational centers
  - 28,887 1st and 2nd cycle students
  - 2,184 Master students
  - 2,912 PHD students
  - 4,550 Life long learning students
- 408,394.41 m² Built area
- 2,627 Teaching and Research staff
- 1,452 Administration and services
- 77 Research entities
Knowledge Areas

- Aerospatial Engineering
- Applied Sciences
- Architecture, Urbanism and Building Construction
- Biosystems Engineering
- Business Management and Administration
- Civil Engineering
- Industrial Design and Manufacture
- Information and Communication Technologies
- Environment, Sustainability and Natural Resources
UPC innovative - **2010**

- **233** departments, institutes and research groups
- **233**
- **44,404** documents created under our Creative Commons license
- **44,404**
- **76,785,159 €** income from research contracts
- **76,785,159 €**
- **9** new companies set up or partially owned by the UPC as part of the Programa Innova
- **9**
- **45** new national patents
- **45**
- **33** new international patents
- **33**
- **2,965** books, chapters and articles published in scientific journals
- **2,965**
- **258** doctoral theses defended
- **258**
UPC innovative – Valorization process

1. IDENTIFICATION
2. MATURATION
3. PRE-COMMERCIALIZATION
4. COMMERCIALIZATION
5. FOLLOW-UP

- RESEARCH
  - INNOVATION DISCLOSURE
  - ASSESSMENT
  - PROTECTION
  - MARKETING TO FIND A LICENSEE
- LICENSING
- COMMERCIALIZATION
- GROWTH
- REVENUE
- REINVEST IN RESEARCH AND EDUCATION
The **Patents and Licensing Office (OPL)** is responsible for protecting and commercializing intellectual property generated at the university.

- **UPC**: First university in patent application number in Spain.
- More than **400** patents applied
- **150** licenses processed

### Number of patent applications 2005-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Patents Prioritaries</th>
<th>Patents Internacionales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>37</td>
<td>4</td>
</tr>
<tr>
<td>2006</td>
<td>37</td>
<td>6</td>
</tr>
<tr>
<td>2007</td>
<td>38</td>
<td>9</td>
</tr>
<tr>
<td>2008</td>
<td>35</td>
<td>12</td>
</tr>
<tr>
<td>2009</td>
<td>48</td>
<td>16</td>
</tr>
<tr>
<td>2010</td>
<td>45</td>
<td>33</td>
</tr>
</tbody>
</table>

Since 2005
The mission of the Programa Innova UPC is to support and to enhance the research developed at the Universitat Politècnica de Catalunya. We strive to create an innovative culture, to promote entrepreneurship and to support the creation of new technology-based (knowledge-based) companies.

Companies created 1999-2010

- **245** technology based companies created
- **UPC** has taken an equity position in **18** companies
BUSINESS CREATION SUPPORT SERVICES
(Entrepreneurship Center)

PROGRAMA INNOVA - UPC
Programa Innova UPC – Services

Business

- Technology commercialization.
- Support to the creation of Technology Based companies.
- Business plan evaluation.
- Counsel on financing and equity.
- Expertise in formulation strategy and business growth.
- Business model definition and management of UPC shareholdes.

Training

- Accredited training: design, management and follow-up of TOP Subjects
- Non-Accredited training: seminars on entrepreneurship, innovation, technology protection and valuation, etc.
- Online training.

Awareness Actions

- Design and organization of the Business Ideas Contest (XTT-ACCIÓ).
- Participation in national / international projects and networking.
- Conferences by experts in entrepreneurship.
- Participation in meetings / congresses.
Programa Innova UPC – Projects / Companies

**PROJECTS per SECTOR**
- Aeronautics: 5%
- Construction: 3%
- Energy: 10%
- Hardware: 2%
- Mathematics: 2%
- Materials: 5%
- Metallurgist: 2%
- Navigation: 2%
- Textile: 5%
- Civil Engineering: 2%
- Others: 12%
- IT: 50%

**COMPANIES per SECTOR**
- Energy: 12%
- Software: 32%
- Hardware: 12%
- Others: 36%
- Optics: 4%
- Metallurgical: 4%
- Metallurgist: 2%
- Navigation: 2%
- Mathematics: 2%
- Materials: 5%
- Construction: 3%
- Energy: 10%
- Hardware: 2%
- IT: 50%
- Others: 12%
SPIN-OFF

A university spin-off is a company promoted by one or more investigators and created with the support of the university, in order to exploit the results and the knowledge obtained in a research activity. Therefore, university researchers come to develop a business task: researchers - entrepreneurs.

START-UP

A start-up is a new business project based on knowledge, innovation and technology. While a spin-off necessarily arises from a research or innovation activity, a start-up is characterized solely in terms of responding to a market opportunity, products or services with high added value.
<table>
<thead>
<tr>
<th>COMPANY</th>
<th>TYPE</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>GenomVisió</td>
<td>Investee Spin Off</td>
<td>Education for digital content</td>
</tr>
<tr>
<td>Sparsity</td>
<td>Investee Spin Off</td>
<td>Datamaining and database management</td>
</tr>
<tr>
<td>P2P Ubiquitous</td>
<td>Investee Spin Off</td>
<td>Communication Networks applied to wireless home automation industry</td>
</tr>
<tr>
<td>Lock’In Technologies</td>
<td>Start Up</td>
<td>Marketing of geo-location technologies</td>
</tr>
<tr>
<td>One Box</td>
<td>Start Up</td>
<td>Services for show promoters</td>
</tr>
<tr>
<td>4D Life</td>
<td>Start Up</td>
<td>Advanced Internet Web 3.0 model to build leisure and professional relationships</td>
</tr>
<tr>
<td>Classe A</td>
<td>Spin Off</td>
<td>Power sector projects development</td>
</tr>
<tr>
<td>Barcelogic</td>
<td>Investee Spin Off</td>
<td>Solving complex problems with multiple constraints and solutions</td>
</tr>
<tr>
<td>Sons etc</td>
<td>Spin Off</td>
<td>Consultancy on marine noise pollution</td>
</tr>
</tbody>
</table>
| **HYDS**  
(http://www.hyds.es) | **BAOLAB**  
(http://www.baolab.com) | **GAGE-NAV**  
(http://www.gage.es) |
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Development of innovative solutions in rain forecast issues, according to the needs of the customer.</td>
<td>Development and commercialization of chips that contain a patented &quot;micro-relay&quot; that is characterized by having some dimensions smaller than the rest of existing designs.</td>
<td>Exploitation of a new navigation system for satellite that makes the positioning feasible with errors (centimeter scale at a continental level).</td>
</tr>
</tbody>
</table>

| Category: SpinOff | Category: SpinOff | Category: SpinOff |
# Programa Innova UPC – Some Examples

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>INGENIA-CAT (<a href="http://www.ingenia-cat.com">http://www.ingenia-cat.com</a>)</td>
<td>Company specialized in the conception, design and development of products for electric motor control (<a href="#">motion control</a>).</td>
<td>StartUp</td>
</tr>
<tr>
<td>DEXMA (<a href="http://www.dexmatech.com">http://www.dexmatech.com</a>)</td>
<td>DEXMA provides energy management software for corporate, commercial, public administration and industrial sectors.</td>
<td>StartUp</td>
</tr>
<tr>
<td>TINYTRONIC (<a href="http://www.tinytronic.com">http://www.tinytronic.com</a>)</td>
<td>Tinytronic provides products for monitoring and locating people, animals and objects, as well as the data transmission (telemetry).</td>
<td>StartUp</td>
</tr>
</tbody>
</table>
| **MODULMAX**  
(http://www.modulmax.com) | **NOUSOL**  
(http://www.nousol.com) | **IDAPT**  
(http://www.idaptweb.com) |
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Modulmax is a construction toy that consists of a single type of building block that can be assembled to form an infinite number of three-dimensional figures.</td>
<td>ClickCells is a new patented system that allows connecting solar cells to obtain the desired output voltage and shape. Specific product: Solar charger</td>
<td>IDAPT is a universal charging station that uses a simple system of interchangeable connectors to charge any make or model of portable devices.</td>
</tr>
<tr>
<td>Category: <strong>StartUp</strong></td>
<td>Category: <strong>StartUp</strong></td>
<td>Category: <strong>StartUp</strong></td>
</tr>
</tbody>
</table>
# Programa Innova UPC – **DEXMA**

## ORIGIN (2007)
- Wireless sensor networks
- 3 students (FIB UPC)
- UPC Business Idea Contest
- Other contests
- Multiple projects: IRTA / Bombers
- Software + Hardware

## EVOLUTION
- 3 years redefining business model
- Prèstec Capital Concepte
- Prèstec NEOTEC
- Serial Entrepreneurs
- Focusing (Energy)
- Software

## PRESENT SITUATION (2011)
- New business model: SaaS / Partners
- Commercial channel / MKG
- Income
- Consolidation / Grow
- Parc Tecnològic BN
- **FAST DEMO**
Programa Innova UPC – Success cases
**ACTIVITY** | **DESCRIPTION**
--- | ---
Xarxa d'Emprenedoria Universitària | This Network was launched to carry out in a coordinated manner, actions to promote entrepreneurship, and contribute to the detection of entrepreneurial talent and the creation of business careers in the university community. [http://www.xeu.cat](http://www.xeu.cat)
RedEmprendia | I2E2: Instituto de Innovación y Emprendimiento Emprendia
Coordination: UB-PCB, UPC
This Institute will disseminate the supply and training resources of member universities, organize training courses and other new products and activities for the pooling of self-knowledge in the field of innovation and entrepreneurship.
Programa Innova UPC – Some Awards

- Best Science Based Incubator Award, given by the Science Alliance, as the incubator with stronger growth in Europe, 2006.
- Award for Best Initiative to support Entrepreneurship. Gate to Growth, 2006.
- Prize to the Best Technological Springboard. CIDEM 2003.
- Pilot Program for the Promotion of Innovation and Entrepreneurship culture, Ministry of Science and Technology 2000.

Our companies

- Baolab Microsystems: Elektra 2010 (European Electronics Industry Awards) Award
- Fractus: Elektra 2007 (European Electronics Industry Awards) Award
- Hyds: Elected one of the 50 most promising companies in Spain 2009 (Emprendedor.es)
- JustinMind: Selected as one of the most promising start-ups in Europe (Innovate! 2010)
- 3Scale Networks: Selected as one of the most promising start-ups in Europe (Innovate! 2010)
La Universitat Politècnica de Catalunya (UPC. BarcelonaTech) posa en marxa la 1a edició del CONCURS

ESTUDIA I EMPREN a la UPC

Aquesta iniciativa pretén contribuir a fomentar l'esprit emprendedor i la cultura de la innovació entre els estudiants universitaris UPC.

Si ets estudiant de la UPC i tens una idea de negoci, t’animem a participar-hi!

Aquest concurs està organitzat pel Programa Innova UPC i comptà amb el suport del Ministeri d'Educació.

ORGÀNICA:

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Telèfon: 938 03 76 22
Fax: 93 48 37 91
programa.innova@upc.es

ORGÀNICA:

1a EDICIÓ DEL CONCURS
ESTUDIA I EMPREN
A LA UPC

Primer concurs d'emprendedoria per estudiants universitaris UPC

Bases i inscripció a: http://pinova.upc.es/empreronpc
ENTREPRENEUR PROFILE

Steve Jobs - Apple

Xavier Pérez - Nousol

Steve Jobs Stanford Commencement Speech 2005
Programa Innova UPC – Entrepreneur profile
La persona emprendedora és capaç d’identificar una oportunitat o crear-la. Un cop identificada, l’emprenedor ha de ser capaç de portar-la a la realitat i és aquí on ha de tenir tenacitat i iniciativa...

Rubén Bonet (Fractus)
Programa Innova UPC – Entrepreneur profile

AVERAGE ENTREPRENEUR (CAT 2010)

- Is less than 40 years
- Mostly from cities
- It is mainly a man, despite the increase of women

PERSONALITY TRAITS (not L)

- Risk Assumption
- Sacrifice
- Knowledge of oneself as a person
- Curiosity
- Flexibility
- Initiative
- Persistence
- Realistic, optimistic and creative vision
- Common sense

PERSONAL SKILLS (L)

- Communication skills
- Management skills
- Organization skills
- Skills to recognise/identify and use the environment
CURRENT / FUTURE ENTREPRENEURS

Gabriel Ros - Biprocel

Marc Gispert – Thinking Forward
Programa Innova UPC – Project Monitoring

IDEA
- Initial feedback
- Making the diagnosis

¿TECHNOLOGICAL IDEA?

BUSINESS PLAN
- Idea viability analysis (Business opportunity)
- Business Plan preparation Assessment

¿VAILABLE?

FINANCING
- Public: Sources election, Assessment and Request
- Private: BA, VC

+ RESOURCES

OFFICE
TEAM
TRAINING
CONTACTS
...

BUSINESS CREATION
- Creation and implementation of monitoring
- Consolidation + Growth

Implementation
Programa Innova UPC – Some Tips

MAIN IDEAS

- Multidisciplinary Team
- Relative value of the idea (implementation)
- Lack of knowledge and planning (market research and product)
- Risk Culture / Fear of Failure
Programa Innova UPC – Some Tips

PROJECT

- Start working on the development
- Good Pitch (Elevator Pitch)
- Share your idea

PRESENTING YOUR IDEA TO INVESTORS

- Team (Profile + Involvement)
- Scalability
- Clear investment proposal (Financial Plan)
La tecnológica 3Scale abre oficina en Silicon Valley

La compañía, ubicada en el vivero de empresas de Barcelona Activa, presta servicios a los propietarios de páginas web.

Nicho de mercado
- Marta Tsuchiya y Steven Williams, fundadores de la empresa, han invertido su ideología en el mercado de SaaS, el cual se ha vuelto muy popular en los últimos años.
- 3Scale está especializado en la gestión de API entre empresas, con su enfoque en la arquitectura del API.

Reuniones horizontales
- Marta Tsuchiya y Steven Williams, fundadores de 3Scale, han reunido a líderes del sector para compartir sus experiencias.
- 3Scale ha reunido a expertos en el mundo del desarrollo de aplicaciones para compartir conocimientos.

Plug and Play Tech Center
- 22@ (BCN)

http://www.3scale.com
http://www.justinmind.com
Programa Innova UPC – Barcelona

ASSESSMENT
SeedRocket is a private innovative initiative for entrepreneurs with technology-based projects: Funding - Education - knowhow

http://www.seedrocket.com

The Tetuan Valley Startup School is a 6 weeks Program for young future entrepreneurs who want to experience the process of creating a startup (Spring / Fall 2011)

http://blog.tetuanvalley.com

Initiative that aims to create a technological startup in 3 days. 40 people with complementary profiles are selected (1-3 April 2011)

http://3daystartup.com/barcelona
SELECTED 5 BEST ENTREPRENEURIAL PROJECTS AND BUSINESS PLANS IN THE MATTER OF ENERGY EFFICIENCY.

SERVICES: Advisory and technical-economical, legal and financial tutelage and a monthly allocation, depending on the project, of between 6,000 and 12,000 euros during the necessary period for its development, which can have a maximum duration of 24 months.

DATE LIMIT FOR SUBMISSION: 30 NOVEMBER 2011
<table>
<thead>
<tr>
<th>Nivell MACRO</th>
<th>MERCAT</th>
<th>SECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Atractiu del Mercat</td>
<td>Atractiu del Sector</td>
</tr>
<tr>
<td></td>
<td>Autoevaluació equip emprendedor</td>
<td></td>
</tr>
<tr>
<td>Nivell MICRO</td>
<td>Atractiu i valor pel segment objectiu</td>
<td>Avantatge competitiu sostenible</td>
</tr>
</tbody>
</table>

| Mercats grans i en creixement – Identificació de segments concrets. |
| Indústries estructuralment atractives – Sostenir avantatge competitiu. |
Recta de Finançament

Aquesta recta de finançament que us presentem des del Programa INNOVA, representa esquemàticament les diferents fonts de finançament a les que un projecte de Base Tecnològica podria aplicar segons el seu estat de maduració i necessitats financeres.

**Recta de Finançament**

- Innocash
- CDTI
- NEOTEC 1
- Operadors Capital Risc (Seed capital)
- NBET (Acció)
- INICIA
- ENISA
- Llavor
- Llançament
- Desenvolupament