Managing the University IP Office

Nairobi, the 31st March 2009
Regional Forum on the Role of Patents and the PCT in research in Developing Countries

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Universidade do Minho

Agenda

- Different IP/TT Office Models
- Defining a model for a Tech Transfer Office
- Reaching the market through Entrepreneurship
The Challenge

- Knowledge transfer is stimulating communication between two very different cultures.

The Challenge

- The Technology Transfer Office (IP Office, Knowledge Transfer Office) provides this much needed support.
How to manage TT?

1. TT by external providers
   - New Knowledge generation
   - TT
   - New Knowledge Application

2. Integrated TT (company with R&D centre, Univ. spin-off)
   - New Knowledge generation
   - TT
   - New Knowledge Application

3. TT to “sell” knowledge
   - New Knowledge generation
   - TT
   - New Knowledge Application

4. TT to “buy” knowledge
   - New Knowledge generation
   - TT
   - New Knowledge Application

Different TT models
Different TTO models

Functions of a TTOffice

- Research information and financing
- Managing R&D information
- Context analysis – legal and market
- Managing industry relations
- Project Management
- Invention disclosure
- IP Portfolio management and evaluation
- Contract drafting and negotiation
- Identifying best exploitation route
- Knowledge Transfer Management
- Patent drafting and application
- Negotiating licensing terms
- Defining profit/equity

Company Functions

Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Emphasis</th>
<th>Legal status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal model</td>
<td>Ownership Policies Governance</td>
<td>Legal department of University</td>
</tr>
<tr>
<td>Administrative model</td>
<td>Administrative processes, relationship with research base, contract research</td>
<td>Dedicated dept. of University</td>
</tr>
<tr>
<td>Business model</td>
<td>Managing &amp; commercialising IP, collaborative research, business development, spin-offs, seed capital</td>
<td>Subsidiary of University</td>
</tr>
<tr>
<td>Outsourcing</td>
<td>Bundling (gathering) IP</td>
<td>Independent company</td>
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</tbody>
</table>
Different IP/TT Office Models
Defining a model for a Tech Transfer Office
Reaching the market through Entrepreneurship

Agenda

Defining a model

- Values, resources and objectives
  - Audit and evaluate resources*
  - Culture/context
  - Relative weight of University Departments
  - Areas of scientific excellence
  - Previous experience in TT
  - Researcher attitude

* tangible and non-tangible
Political, Environmental and Legal Context

Consider:
- Available Financing structures, levels and opportunities
- Governmental policies and strategies
- Legal Context:
  - IP ownership and regulations
  - Regulations for the exploitation of R&D results
- Economic Environment:
  - Labour market
  - Type of Industry

Mission, Strategy & Objectives

Should be:
- Compatible with the University mission
- Clearly defined, clearly defended, clearly communicated
- Sufficiently explicit to provide directions for more detailed actions and procedures
- Supported by all stakeholders
- Periodically reviewed
**Defining a model**

- Internal Objectives
  
  *What are the TTOffice objectives?*

  - Generate research funding
  - Encourage innovation in faculty, researchers and students
  - *Reward, retain & recruit* faculty and students
  - Create employment opportunities in S&T areas for graduates
  - Facilitate the setting-up of spin-off companies

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**Aligning the Structures**

- What does the University expect from TT?
- Who is responsible for which objectives?
- What level of responsibility?
- How are TT processes structured and supported?
- What processes exist to identify and evaluate IP?
- What processes are in place for its exploitation?
- Who decides on how it should be exploited?
- Using which criteria?
- How are these processes controlled?
Main operational difference

<table>
<thead>
<tr>
<th>Faculty service</th>
<th>Profit generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Raising awareness</td>
<td>- Focus on profit</td>
</tr>
<tr>
<td>- Each disclosure raises the</td>
<td>- Pressure to concentrate on potentially profitable</td>
</tr>
<tr>
<td>same interest</td>
<td>disclosures</td>
</tr>
<tr>
<td>- Researchers are key</td>
<td>- Professionalisation</td>
</tr>
<tr>
<td>- Happy researchers</td>
<td>- Few very happy researchers</td>
</tr>
</tbody>
</table>

- A combination of both is possible (and desirable)

Examples of Faculty service:
- Organize meetings between researchers & industry
- Recognize and disseminate the impact of research
- Active contribution to University seminars, courses, workshops.
- Publication of “how to” guides in industry relations
- Legal support in managing industry funding
- Allow enough freedom for researchers to get involved in industry relations

Profit generation
- Focus on profit
- Pressure to concentrate on potentially profitable disclosures
- Professionalisation
- Few very happy researchers

- A combination of both is possible (and desirable)
How to start? (the Research side)

- Know the rules of the game:
  - internal context,
  - external context,
  - Mission, strategy and objectives
- Know what you have to offer
- Know who the clients are and what are their needs
- Identify (and involve) who can support: financing schemes, governmental support, development funding, industrial associations, chambers of commerce, banks…

Who must be involved?

Government

National IP Office

University & Research institutions

Service providers (IP Lawyers, consultants)

Companies

Financing institutions (VC, banks)

Incubators, S&T Parks
Who must be involved?

- Government
- National IP Office
- University & Research institutions
- Service providers (IP Lawyers, consultants)
- Financing institutions (VC, banks)
- Companies
- Incubators, S&T Parks

Innovation Ecosystem:
All stakeholders are implicated
Remarks on the regional level

Importance of structuring partnerships at regional level (top-down approach), as adequate framework for bottom-up long-term partnerships

Importance of measuring outcomes of strategic partnerships in the regional context (cost-effectiveness)

Design new partnerships or cooperation models inspired in the best practices available, but always addressing the specific regional situation (it is not possible to create “Silicon Valleys” everywhere!)

Back to research context...

<table>
<thead>
<tr>
<th>Screening &amp; Evaluation</th>
<th>IP Protection &amp; Management</th>
<th>Research</th>
<th>Proof of concept</th>
<th>Industrial Prototype</th>
<th>Business model</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is it feasible?</td>
<td>Do we own it?</td>
<td>What can we make public?</td>
<td>How is the product?</td>
<td>How is the product?</td>
<td>How is the product?</td>
<td>How is the product?</td>
</tr>
<tr>
<td>Is there a market?</td>
<td>Is it patentable?</td>
<td>Is it too early?</td>
<td>How to present information?</td>
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<td>How to present information?</td>
</tr>
<tr>
<td>Is the researcher committed?</td>
<td>Can IP be enforced?</td>
<td>How should the client be reached?</td>
<td>What tools to use for marketing?</td>
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</tr>
<tr>
<td>Is it too expensive?</td>
<td>Do we have enough information?</td>
<td>How should information be needed?</td>
<td>Does it have other applications?</td>
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<td>Does it have other applications?</td>
</tr>
<tr>
<td>Does it have other applications?</td>
<td>What countries/regions?</td>
<td>How is the product?</td>
<td>How to approach the client?</td>
<td>How to approach the client?</td>
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</tr>
<tr>
<td>Is the business model sound?</td>
<td>Do agreements secure IP?</td>
<td>Can the product be sold?</td>
<td>What information is needed?</td>
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Marketing

<table>
<thead>
<tr>
<th>Business Dev.</th>
<th>Deal making</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the markets?</td>
<td>How much is the IP worth?</td>
</tr>
<tr>
<td>What is our segment? How to target it?</td>
<td>What is the value proposition?</td>
</tr>
<tr>
<td>Where and how to reach possible partners?</td>
<td>How to negotiate?</td>
</tr>
<tr>
<td>Exclusive or non-exclusive licenses?</td>
<td>What are the licensing terms?</td>
</tr>
<tr>
<td>Does the business plan make sense?</td>
<td>What is the impact in future research?</td>
</tr>
</tbody>
</table>
Intellectual Property Policy

- A clear (and reasonable) IP Policy is vital to the establishment of an effective Tech Transfer activity within the University.

- It allows
  - To define ownership (University? Researchers? What about students?)
  - To motivate researchers by providing incentives
  - To clarify interinstitutional collaboration
  - To facilitate understanding by industry of the ways of University…

Invention disclosure

- If the TTOOffice is to manage the IP Portfolio, it must know what the University is doing.

- Is there a clear process for disclosing new inventions that might be patented?
  - Is this information centralised?
  - Meetings with Research Centre Directors?
  - Visits to all researchers?
  - Internal “call for papers”?
The disclosure has 2 objectives:

- **Internal**: Identify technologies/know-how from the University in order to know what can be transferred to industry.

- **External**: Communicate to industry what the University has to offer – Technology Marketing.

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- **Internal**: Identify technologies/know-how from the University to transfer to industry – who is doing what? Is it new? Does it have advantages? Can it be applied and by whom? Can it be patented?

- **External**: Communicate to industry what the University has to offer – who can be interested in this know-how? How can it be applied? What are the expected results? What is the roadmap to bring it to market?
Invention disclosure

- If the previous questions can’t be answered (in some way), it’s not an invention disclosure
- The less resources you have, the earlier in the research process you have to work on
- Scientifically valuable and patentable results may not be commercially relevant
- Lack of market kills the business
- Industrial validation by companies asap!
- Protect IP whenever possible

Some Best Practices

- Invention pipeline
  - Identify most promising scientific areas
  - Thorough and timely Disclosure to enable IP protection
- Clearly defined IP Policy
  - Who owns the technology? Which rights?
- Investment in support to research and TT
  - Professional team and professional management of processes
- Internal delimitation of responsibilities
**Best Practice Guides**

Best practice guides (in english) available in our website: www.tecminho.uminho.pt

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Entrepreneurship at UMinho

- 3 levels of Academic Entrepreneurship
  - Entrepreneurship - a subject itself
  - Training and supporting entrepreneurship - starting new businesses ➔ spin-offs
  - The entrepreneurial university - creation and maintenance of an enterprising culture

Entrepreneurship at UMinho

- Entrepreneurship activities are carried out following 3 axis:
  - Raising Awareness
  - Training and Coaching
  - Direct support
Direct support

- Phases of spin-off creation

University
Research
Proof of principle
Scouting

University/Project
Feasibility
Proof of concept
Market & Technology
Screening

Project/Company
Preparation
Market & Product
Support

Company
Venture
Production & Business Development
Participation and/or continued support

Go on / No go
License / Spin-off

Direct support

Entrepreneurship is about people:
Awareness and motivation is essential!
Examples of Awareness Activities

- Society in general
  - Seminars and awareness sessions
  - Ideas competition (InventUMinho) for groups of students + teacher from Secondary Schools
Examples of Awareness Activities

- Graduate students
  - Seminars and awareness sessions
  - Project Based Learning including evaluating market potential of technologies and pre-Business Plan to start companies
  - Campus companies

Training and Coaching

- Graduate students and post-grads
  - Seminars and awareness sessions
  - PhD curricula including Entrepreneurship topics + elaboration of a BP for the commercialisation of the results of the PhD programme
Training and Coaching

- Graduate students and post-grads

Technology Commercialisation Programme:
5 month course where teams of researchers + business students elaborate a plan for the commercialisation of R&D results
(Friday afternoons + Saturday morning)

Spin-off creation

- Entrepreneurs must have a link to the University of Minho:
  - teaching staff;
  - researchers;
  - under-graduation and post-graduation students;
  - recent graduates;
  - technical personnel.
# UMinho Spin-offs (May 2004 until Sept. 2008)

<table>
<thead>
<tr>
<th>Spin-off</th>
<th>Field</th>
</tr>
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<tbody>
<tr>
<td>BIOTEMPO</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>SIMBIENTE</td>
<td>Environment</td>
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<tr>
<td>ULTRAVISIOGRAPH</td>
<td>Medical devices</td>
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<tr>
<td>CPC</td>
<td>Biotechnology</td>
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<tr>
<td>UBISIGN</td>
<td>ICT</td>
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<tr>
<td>VINALIA</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>BYZYMO</td>
<td>Biotechnology</td>
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<tr>
<td>EDIT VALUE</td>
<td>Business Management</td>
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<tr>
<td>WIDECOLOUR</td>
<td>Physics</td>
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<td>PMINNOVATION</td>
<td>Business Management</td>
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<tr>
<td>TECNOWAVE</td>
<td>Civil Engineering</td>
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<tr>
<td>MICROPOLIS</td>
<td>Polymer Engineering</td>
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<tr>
<td>GLYCONSTRUCT</td>
<td>Biotechnology</td>
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<td>SOMATICA</td>
<td>Physics</td>
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<td>Physics</td>
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<tr>
<td>SINERGEO</td>
<td>Geology</td>
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<tr>
<td>GEOS</td>
<td>Geology</td>
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<tr>
<td>ARBORVALUE</td>
<td>Biology</td>
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<tr>
<td>BIOTEKNICS</td>
<td>Biology</td>
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<tr>
<td>SAR</td>
<td>Automation</td>
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<td>DNAMIMICS</td>
<td>Biotechnology</td>
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<tr>
<td>EDS</td>
<td>Polymer</td>
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<td>ESI</td>
<td>Mechanics</td>
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<tr>
<td>PURMEDIDA</td>
<td>Polymer</td>
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<tr>
<td>EXVA</td>
<td>Video Analysis</td>
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<tr>
<td>SPECTRALBLUE</td>
<td>Communications</td>
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<tr>
<td>X-TREME</td>
<td>New materials</td>
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<tr>
<td>MATERIALS</td>
<td></td>
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<tr>
<td>KEEP SOLUTIONS</td>
<td>Informatics</td>
</tr>
<tr>
<td>MEINTEGRA</td>
<td>Sociology</td>
</tr>
</tbody>
</table>

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**UMinho Spin-offs**

- **micropolis**
- **SAR**
- **CASTRO PINTO & COSTA**
- **acutus**
An entrepreneurial University

- Establishing an entrepreneurial culture
- Rewarding entrepreneurship
- Getting connected to the market
- Supporting potential entrepreneurs
- Implementing a dual approach towards knowledge valorisation

The dual approach

Focus on quantity: support all ideas
Focus on quality: mechanisms for identification of high potential ideas for customised support
Thank you very much for your attention!
Je vous remercie de votre patience!

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