Technology Transfer as Recruiting Instrument and Facilitator of Entrepreneurship

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Leibniz Institute for Plasma Science and Technology (INP)

Nizhny Novgorod, Russia, 26-28 May 2011
TII Annual Conference – “Innovation, Prosperity, Quality of Life”
The Leibniz Association

- 86 non-universitary institutes
- 14,200 employees
- jointly funded by state and federal governments
- evaluated quality
- €1.1 bn total budget
- €220 m third party funds
INP Greifswald in numbers

Building (new building 1999)

- Main floor space 3,700 qm
- 130 workstations
- 37 laboratories

In construction building: 540 m² (8 laboratories)

Budget (2009)

- Budget 2009: 11,8 Mio. €
- Third-party funds: 5,6 Mio. €

Staff (2009)

- 165 employees (2009)
  - Scientists: 81
  - Engineers: 31
  - Administration/infrastructure: 27
  - Assistants/trainees: 26
What is a Plasma?

Solid → Liquid → Gas → Plasma

+ energy

Examples:
- Sun
- Lightning
- Aurora Borealis
- Plasma discharge
SWOT Analysis

**Strengths**
- World renown leaders in plasma theory
- Experience in plasma generation
- Technical equipment, diagnostic procedures
- Established scientific work in the four departments

**Opportunities:**
- Interdisciplinarity
- EU enlargement
- Realization of high-risk research topics
- Timely adaptation to environment
- Potential of the technology not utilized
- Clear strategy to realize

**Weaknesses:**
- No overall strategy
- No alternative concepts regarding change in work environment
- Insufficient project fundraising (2004/2005)
- Information/communication/project management inflexible
- budget
- Low degree of awareness about applicability

**Threats:**
- Financial resources
- Proximity to economy
- Recruiting difficulties
- Decreasing readiness to invest
- Missing engineering know-how
- Know-how loss through resignations
Transfer - cooperation
3 - Pillar Model

FROM THE IDEA TO THE PROTOTYPE

FROM THE PROTOTYPE TO THE PRODUCT

FROM THE PRODUCT TO THE MARKET
Spin-offs from INP Greifswald

**neoplas GmbH** (est. November 29, 2005)
- FROM PROTOTYPE TO PRODUCT
- Transfer centre of INP Greifswald
- Technology transfer
- Technology management
- Product development

**neoplas control GmbH** (est. January 13, 2006)
- FROM PRODUCT TO MARKET
- Production, sales and distribution of Q-MACS diagnostic systems
  - Analysis of plasma chemical processes (e.g. semiconductor and automotive industry), Trace gas analysis

**neoplas tools GmbH** (est. August 18, 2009)
- FROM PRODUCT TO MARKET
- Production and distribution of plasma sources
  - Improvement of adhesion, printability (e.g. plastics industry)
Status INP 2009

Total bilateral industry-funds

Total third-party funds

- INP
- neoplas
- neoplas control
neoplas Mission

**Focus**
Exploitation of scientific research

**Specific technology transfer**
Spin-off incubator, prototype construction / small series, construction (CAD)

**Efficient technology management**
(EU) project management and acquisitions, market analysis, consulting

**Visible technology marketing**
Networks & consortia, science marketing
### Personnel growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Full-time</th>
<th>Part-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2006</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2007</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>2008</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>2009</td>
<td>9</td>
<td>15</td>
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</tbody>
</table>

### Economic growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Budget (k€)</th>
<th>Turnover (k€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>2006</td>
<td>200</td>
<td>222</td>
</tr>
<tr>
<td>2007</td>
<td>500</td>
<td>572</td>
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<tr>
<td>2008</td>
<td>750</td>
<td>770</td>
</tr>
<tr>
<td>2009</td>
<td>1000</td>
<td>980</td>
</tr>
</tbody>
</table>
## Turnover 2008 - 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Transfer (€)</th>
<th>Management (€)</th>
<th>Marketing (€)</th>
<th>Projekte (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>599,000</td>
<td>87,000</td>
<td>31,000</td>
<td>189,000</td>
</tr>
<tr>
<td>2009</td>
<td>423,000</td>
<td>138,000</td>
<td>117,000</td>
<td>335,000</td>
</tr>
<tr>
<td>2010</td>
<td>625,000</td>
<td>185,000</td>
<td>261,000</td>
<td>164,000</td>
</tr>
</tbody>
</table>
Example 1 Technology Marketing
Example 2 Technology Marketing
• Hiring additional staff with other educational backgrounds
  -> increasing the interdisciplinary know-how
• Widening the spectrum of services and therefore increasing INP’s
  competitiveness
• Specialization in R&D management
• Possible acquisition of follow-up orders
• Other national or international funding programs can be made use of
• neoplas can act as an industrial partner in consortia alongside INP or
  others
• Possibility of non-tariff payments
• Incubator for spin-offs
• Tax payer
• Services may be offered to other interested institutions

Added value to the regional development
Added value to the INP strategy

- No product liability towards third parties for public bodies
- The development process of prototypes is removed step-by-step from the research department and therefore INP gradually returns to an intensified research focus
- Relocating the necessary independent economic enterprises to the “outside” therefore not jeopardizing INP’s non-profit status
- Personnel transfer possible -> fixed-term employment can be counteracted and additional earnings possible
- Activities attract more activities → coordination tasks for Ministry of Education and Research: Business Plan Competition, Menturing Programme for founders
Crucial success factors

- „Bad“ starting conditions (no more willingness to suffer, need to change is widely accepted)
- New leader team
- Clear strategy
- Mature technology (platform for several applications)
- Strong scientific basis
- Supervisory committees are willing to follow a down-to-earth approach
Idea: International Plasma Technology Transfer Centre

- International centre of attraction
- Bundling of the best ideas from the Baltic Sea Region and other countries
- Expansion of multidisciplinary research
- Participation in regional, national and European innovation programmes
- Matching European rural and metropolitan areas for joint post-research activities (technology transfer, investments, recruiting)
Operational approach to utilize this model for more actors in Europe

BalticNet-PlasmaTec - The network for plasma technology in the Baltic Sea Region: 38 partners, 10 countries, 1 focus
Thank you!

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