



INTERNATIONAL PATENTING FROM THE UNIVERSITY PERSPECTIVE

IP PROTECTION BACKGROUND

To handle tasks around commercialization, in 2002 JU set up the Centre for Technology Transfer CITTRU (previously known as: Centre for Innovation, Technology Transfer and University Development). The unit became responsible for managing the interactions of JU with research and business partners, including contract research. CITTRU also promotes academic entrepreneurship with education of research staff and incubation of start-ups as well as assisting the scientist with IP issues related to establishing interdisciplinary consortia with industrial partners. Last but not least, CITTRU is the main body responsible for coordinating complex commercialization projects.

Patenting activities have risen after 2007, when a centralized IP handling policy was introduced. The university had to build an IP oriented culture at the institution that needed years to take roots.

DEVELOPING AN IP PORTFOLIO

The JU started with only a few patent applications, out of which the number of granted patents was low. As the organization became more IP aware and the scientific staff disclosed an increasing number of inventions, the number of patent applications started to grow.

Initially, patent application costs were mostly financed from EU co-financed state grants. This changed when the university decided to allocate a separate budget for this purpose to make their patenting efforts independent of the availability of grants.

With this change, the university also became more selective with filing patents, a natural result of which was



The Jagiellonian University

Founded in 1364, the Krakow based Jagiellonian University (JU) is not only the oldest university of Poland, but also one of the oldest in the world. It is the second largest university in all the Visegrad countries and one of the 11 Polish universities in the top 1000 of the Academic Ranking of World Universities. JU is also the only Central-European university in Reuter's top 100 most innovative universities in Europe.

With close to 40 thousand students, 7000 staff members including 4000 academic staff, the JU carried out over 1300 projects in 2020, almost 10% of which was international. Their leading research fields include medical sciences, chemistry, biotechnology, earth sciences, physics, mathematics, IT, social sciences and humanities, amongst others.

The university makes efforts to utilize research results of all fields, which for an institution with such a broad range of specializations presents a challenge.

a dropping number of patent applications. However, the more selective approach also resulted in higher quality filings and in a significantly increasing ratio of granted patents in Poland and abroad.

With this thorough and consistent ground work, JU became the leading Polish PCT applicant by 2020, including companies from all sectors of Poland.

PATENTING STRATEGY

Two major considerations:

A) Polish or local market is in many fields too small to make commercialization viable, and international market requires patenting abroad (this is the case especially for pharmaceutical inventions).

B) Local scientific activity evaluation system only considers patents with priority date applications filed in Poland, which makes the Patent Office of the Republic of Poland and the Visegrad Patent Institute the obvious choice.

For these two reasons, the JU follows the following patenting strategy:

I) First filing is made at the Patent Office of the Republic of Poland, except if a foreign partner is involved [in this case the patent is usually filed either at the European Patent Office (EPO) or the United States Patent and Trademark Office – depending on a partner].

II) PCT application is filed only if one or more of the following conditions are met:

- The assessment of the commercial potential of the invention is positive.
- A business partner is secured that will fund the patenting costs.
- In case the project specifically requires it.

III) Regional or national patents are filed depending on the request of the business partner 30 months after the first patent application, preferably by the business partner.

AN EXAMPLE OF THE PATENTING STRATEGY AND THE COMMERCIALIZATION PROCESS IN ACTION

Invention: biocompatible nanocapsules which enable effective encapsulation of hydrophobic compounds

Created by the chemistry department of JU, the invention consists of nanocapsules for delivery of compounds that can be vitamins or nutrients. These nanocapsules can be applied in many fields from pharmaceutical to cosmetics or agriculture because they are easy to produce, universal and resistant to changing environmental parameters, which gives them an advantage over other known nanocapsule carriers.

PHASES OF COMMERCIALIZATION

STEP 0: Disclosure of research results to CITTRU



STEP 1: Initial market and patentability analysis to decide the commercial potential of the invention.



STEP 2: Clearing legal issues in accordance with the IP policy. Special consideration is given to joint inventions resulting from international research cooperations, and agreements between the inventor and the university, especially in case of external inventors and students.



STEP 3: Initiating IP protection with the help of external patent attorneys due to a lack of capacity to cover all research topics in house.



EXAMPLE OF THE BIOCOMPATIBLE NANOCAPSULES

2015 – In-house preparation for patenting

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2015 – Patent application at the Patent Office of the Republic of Poland (UPRP)

STEP 4: Finding potential business partners during the 12 months after the first filing.
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Performing additional proof of concept research and verification of market value assessment which makes TRL a bit higher, thus making the invention more attractive for business partners.

2016 – Negotiations for licensing

STEP 5: Filing PCT application
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2016 – PCT application through UPRP with EPO as International Searching Authority
2016 – ISR (with written opinion) by EPO. Based on the ISR, certain changes are made to the patent claim.

STEP 6: Signing NDAs and material transfer agreements when the business partner is found. In case a spin off company is established, negotiations of signing license agreements.
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2016 – Exclusive license is granted to CHDE

STEP 7: Fine tuning patent claims. Filing regional or national patent applications, preferably be the business partner.
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2017 – Amending the claims based on the correspondence with EPO to secure the patent
2017 / 2018 – regional/national phases (EPO, plus 8 countries)
2018 / 2019 / 2020 – European/national patents granted

STEP 8: Project continuation and building long term relationship with the company that may further support the research.
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2018 – assignment agreement with CHDE
2018/2020 – further development including contract research



Key take aways of the international patenting efforts of the JU

The international search report (ISR) provided valuable insight for the JU to amend the claims in order to secure smooth patenting in the national phase. The 30 months after filing the first priority claim patent that is gained with the PCT application are vital since the technology readiness level (TRL) of most of their inventions is low. Conducting additional R&D to prepare the product for launch gives enough time to JU to find a business partner and also makes it possible to delay the major costs of national patenting.

Patents also make it possible for JU to have control over how the results of the creative work of their scientists emerge in the market and by whom.

JU considers international patenting and smart IP protection strategy important tools that increase the chances of technology transfer. The monopoly in the market granted by patents is extremely important in case of costly and time-consuming inventions because private companies, that acquire or license these technologies, want to see their investments secured. Without this, many life-saving inventions would never make it to the market and could not help millions of lives.

