IS YOUR PATENT STRATEGY ADAPTED FOR SUCCESS?

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A few words about myself

- Head of the IP department at Ramot, the Tech Transfer Office (TTO) at TAU
- Listed by IAM Strategy 300 – Leading IP Strategist in 2017 and 2018
- Examiner of patent attorney candidates at the IL PTO
- Reviewer of ERC POC grants under Horizon 2020
- IP Consultant for Momentum Fund (Israel), UniFund (Greece), La Caixa fund (Spain)
- IP Consultant for Kornit Digital (Nasdaq: KRNT), a worldwide market leader in digital textile printing
- PhD in Chemistry from the Tel Aviv University
TOPICS

Intro
How Universities Use IP
How Funds Evaluate Projects
IP Management Case Study
IP Analysis UniFund - few Case studies
Intellectual Property (IP)
patents
trademarks
knowhow
trade secrets
design patents, etc
What is a patent?

- Does a patent give you the right to exploit an invention?
  - **NO!**

- A patent is a negative right. It gives you the right to prevent others from exploiting the invention. It is not an enabling right.

- Patents owned by others may overlap or encompass your own patent. **Seek a licence before commercialising.**

For example:

**Patent A:** Electric kettle

**Your patent B:** Electric kettle with ceramic heating elements
Rights conferred by patents

- Right to prevent others from making, using, offering for sale, selling or importing infringing products in the country where the patent was granted

  Exception: non-commercial purposes (private use, academic research)

- Right to assign, sell or license these rights

  These rights belong to the patent holder.
US 6,858,007 was sold by Ramot in 2018, 2 year before it expires in April 2020

https://www.biospace.com/article/bionovate-technologies-corp-acquires-ovarian-tumor-imaging-patent/

**Bionovate Technologies Corp Acquires Ovarian Tumor Imaging Patent**

Published: Apr 08, 2019

TEL AVIV, ISRAEL, APRIL 8, 2019 (Newswire.com) - Bionovate Technologies, Corp. (OTCPK: BIIO) ("the Company") today announced that during the last fiscal year’s reporting period, it acquired a patent (number 6858007) from Ramot University in Tel Aviv, Israel as part of the company's strategy to develop non-invasive cancer imaging and identification systems.

The patent's title is: Method and system for automatic classification and quantative evaluation of adnexal masses based on cross-sectional or projectional images of the adnex.

This patent is a result of extensive work by Dr. Solange Akselrod, Dr. Ron Tepper and Dr. Yair Zimmer’s work at the Ramot University.
Misconceptions About Patents

**Myth #1: I Need to Build it Before I Patent It**
- Patent law does not require companies to actually build, implement, or even test their innovations before seeking patent protection. Instead, **the law requires only that the inventor describe the invention in enough detail**—including a written description and figures—so that others in the same field of technology could build it if they wanted to.

**Myth #2: My Patent Must Match My Product Design or Specification**
- **Good patents disclose many different variations, or “embodiments,” of an invention.** While the particular embodiment chosen by an innovator for their own commercial product is often a valuable one, it is usually not the only valuable one, and almost never the most valuable for all time.

**Myth #3: Patents and Trade Secrets Cannot Protect the Same Invention**
- It very often happens that **different features of an invention may be protected by both patents and trade secrets.**
- For example, a new software-based invention may be implemented by a very specific AI algorithm. In that situation, the AI algorithm is ideal to protect as a trade secret. At the same time, more general functionalities of the invention may be disclosed and claimed in a patent without revealing the specifics of the algorithm. For an invention like this, trade secrets and patents complement each other in providing complete protection.
How universities can exploit IP
The patent process management

- **1st milestone**: Evaluation
  - $t_0$: Priority filing
  - $t_{12} - 1M$: International or National route (PCT/EP, US, etc route)

- **2nd milestone**: Evaluation
  - $t_{12}$: Publication of application

- **3rd milestone**: Evaluation
  - $t_{30/31} - 1M$: National phase (for PCT route)

- $t_0$: Patent priority filing: start of priority year
- $t_{12}$: Deadline for international or national filing: 12 months after $t_0$
- $t_{30/31}$: Deadline for national filing for PCT route: 30/31 months after $t_0$ (PCT route)
How potential licensees/funds evaluate projects

- The team
- The Technology
  - gaining access to new technologies, products, processes and new markets
  - gaining a competitive advantage
  - the licensed IPRs are effectively a new asset for the business, which will increase the value of the company
- IP status
  - IP (patents, trademarks, knowhow, trade secrets) status, ownership, geographical coverage, enforceability
IP MANAGEMENT CASE STUDY
Background

- Scientists (Sela et al) at the Weizmann Institute conduct research on using antibodies to treat specific cancers
- Objective: to target cancer cells with a chemotherapeutic drug
- Sela's research group received two monoclonal antibodies (mAb) from former colleague Professor Schlessinger.
- mAb binds to specific site on cancer cells (selective targeting)
- One mAb selected for experiments
- Chemotherapy drug was chemically linked to mAb (conjugated)
- The effect: targeted delivery of chemotherapeutic drug.
The experiments

Treatment of tumor with mAb and chemotherapeutic drug

A = some effect  B = some effect  C = some effect  D = significant inhibition
The results

- Expectation that experiment C would show best results
  - mAb should carry drug directly to tumour and destroy cancer cells.

- Experiment D shows a surprising better effect
  - Free mixture of chemotherapeutic drug and mAb creates synergistic effect on inhibiting growth of cancer cells.
  - Unpredicted result demonstrates "inventive step".
The publication

- Sela did not consider filing a patent application
  - mAb owned by Schlessinger's employer, Rorer Biotechnology
  - Happy to disseminate results in Journal of the National Cancer Institute.

- Sela's group prepares publication
  - Draft of paper shown to Schlessinger on next visit
  - Schlessinger also named as author for contribution of mAb.
The patent application

Schlessinger discusses results with colleagues at Rorer:

- Clinical studies initiated.
- Patent application prepared.
- Claimed "antibodies" + "antibody/drug mixtures" in cancer treatment.
- Inventors named are all Rorer employees.
- US patent application filed September 1988 (without including the Weizmann scientists).
The licence

- 1994: Rorer grants exclusive licence to ImClone.
- ImClone invests USD 190m in developing cancer therapy.
- 1999: Aventis acquires Rorer and patent after series of mergers.
- "Erbitux" receives FDA approval:
  - 2004: colorectal cancer
  - 2006: head and neck cancer
- 2007: sales of "Erbitux" in the order of USD 400m per year.
The patent dispute

  - US patent limited to claims for mAb/drug mixture.
  - Other territories grant claims to mAb only and to mixture.

- 2002: Sela becomes aware of patent and raises concerns.

- Yeda (technology transfer company for Weizmann Institute) enters discussions with Aventis and ImClone → no resolution.

- 2003: Yeda starts litigation against Aventis and ImClone.
The court decision

- Weizmann scientists are sole inventors of US patent.

- Ownership of patent corrected at USPTO.

- Yeda becomes owner of patent.

- Out-of-court settlement reached 2007:
  - Yeda owns US patent.
  - Yeda and Aventis jointly own patents in other territories.
  - Aventis and ImClone pay USD 60m each to Yeda.
  - ImClone pays Yeda royalty on sales in US.
  - ImClone pays Yeda and Aventis royalty on sales outside US.
Lessons learnt

▪ Exercise caution in disclosing research results → use an NDA.

▪ Clarify terms for exchange of materials → use an MTA.

▪ Complete an invention disclosure form (IDF) to help inventors focus.

▪ Keep notebooks to provide convincing documentary evidence.
LESSONS FROM CASES EVALUATED FOR UNIFUND
Lessons

Ownership

- The company/Project in which the Fund invest in, shall be the owner or licensee of the patents/IP that form the basis of the products developed by the company/in the Project
  - The inventors obtained waiver or license from their University
  - Or
  - The start-up holds ownership or license (exclusive license is preferred) from the University
Lessons

PATENT PROTECTION AND/OR IP RIGHTS

- File the patent before publication of the invention
- What is considered publication: lectures, posters, submission of the thesis at the University library, manuscripts, etc
- Use the services of patent attorneys for drafting and filing patent applications
- Consider patent costs - about 5K Euro at the first filing (priority); 5-8K Euro at the International PCT filing (after 12 months from priority); 5-20K Euro or more, at national phase filings (after 30 months from priority)
- Always file in English, even if the first filing is done at the Greek Patent Office
- When patent protection is not applicable, the knowhow has a very high weight and it shall be documented diligently
- If the technology is easily “designed around” or reverse engineered or dominated by patents by others, then funding is not recommended
THANK YOU

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