IP value extraction and commercialisation

IP value extraction

in cooperation with TUM-Tech GmbH

Dr. Christian Hackl
Managing Director of TUM-Tech GmbH
04.10.2018
Your speaker – Christian Hackl

BS Background
   - Ph.D. in Chemistry

BS More than 20 years experience in industry (management consulting), CEO of TUM-Tech for more than 15 years

BS TUM-Tech GmbH:
   - “Tech”: Technology Transfer (demand oriented)
   - Consulting on innovation management for companies and researcher

BS Assistant Professor at TUM (Technology and Innovation Management)

BS Cofounder of start-up (renewable energy)
Overview of Webinars

1. **IP strategy**
   Five virtual classroom sessions

2. **IP evaluation and protection**
   Five virtual classroom sessions

3. **IP value extraction and commercialisation**
   Four virtual classroom sessions
Series Three - IP value extraction and commercialisation

Module 1: “IP value extraction”

Module 2: “Licensing I”

Module 3: “Licensing II and enforcement”

Module 4: “Determining the value of IP”
Highly successful / best-selling products
Highly successful / best-selling products

Any IPR associated with them…
One product - many IP rights

**Trade marks**
- iPhone
- Product “xxx”
- Start-up tone

**Copyright**
- Software
- User manuals
- Ringtones
- Start-up tone
- Images

**Patents and utility models**
- Data-processing methods
- Operating system
- Operation of user interface

**Designs**
- Form of overall phone
- Arrangement and shape of buttons
- Position and shape of screen

**Trade secrets**
- Some technical know-how kept "in-house" and not published
One product - many IP rights

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Importance of Patents for your Business

It is not about being proud of a patent hanging on the wall …
Importance of Patents for your Business

- It is not about being proud of a patent hanging on the wall …
- It is about using a patent as a commercial tool
Create value out of patents - how exactly?
Create value out of patents - how exactly?

- Exclusivity / Monopoly

- Price premium, higher margin
  (return for your investment)
Create value out of patents - how exactly?

- Exclusivity / Monopoly
- Price premium, higher margin
  (return for your investment)
- Patents (IPR) support exclusivity
Protect an innovation

Picture: Burgerbe.de
Protect an innovation
Create value out of patents - how exactly?

□ Exclusivity / Monopoly

□ Price premium, higher margin
  (return for your investment)

□ Patents (IPR) support exclusivity
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 is valid
  - As long as the patent is valid

- Right to assign, sell or license these rights
Additional benefits

- Time to market
- Reserve / Improvement
- Ensure (further) freedom to operate
Be prepared to defend yourself

- Authorization enquiry
- Preliminary injunctions
- Injunctions
- Potentially: income (damages)
Be prepared to defend

- Authorization enquiry
- Preliminary injunctions
- Injunctions
- Potentially: income (damages)
Value extraction: combining various IPR

$\text{Patent granting date}$

$\text{Patent expiration date}$

Value extraction: combining various IPR

Value extraction: combining various IPR

Value extraction: combining various IPR

Value of subsequent patents

Patent granting date

Patent expiration date

Patent 1

Patent 2

Patent 3

Trademark value

Value extraction: combining various IPR

$ \uparrow$

Patent granting date

Patent expiration date

Patent 1

Patent 2

Patent 3

Value of subsequent patents

Trade secret and know-how value

Trademark value

Value extraction: combining various IPR

Total IP-value

$\$\$

Patent granting date

Patent expiration date

Patent 1

Patent 2

Patent 3

Value of subsequent patents

Trademark value

Trade secret and know-how value

Value extraction: combining various IPR

Value extraction: combining various IPR

Litigation history of Losac

Various patenting strategies
“Blocking”

- Your patent
- R&D direction of competitor

Various patenting strategies
“Blocking”

Various patenting strategies “Inventing around”


Your patent

R&D direction of competitor
Various patenting strategies
“Inventing around”
Various patenting strategies
“Inventing around”

Various patenting strategies
“Blanketing” ("flooding")

Various patenting strategies
“Blanketing” (“flooding”)

Source:
burghausen.de
Various patenting strategies
“Blanketing” ("flooding")

Source:
burghausen.de
Various patenting strategies
“Blanketing” (“flooding”)

Source: burghausen.de
Various patenting strategies “Surrounding”

Additional income generation
What is a licence?

Licensor
IP owner (eg university, company, individual)

Permission to use IP

Payments

Licensee
(eg company)
Some Reasons for External Commercialisation

You are a German shoe-maker with a new process for dyeing leather.
Some Reasons for External Commercialisation

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Some Reasons for External Commercialisation

You are a German shoe-maker with a new process for dyeing leather.
<table>
<thead>
<tr>
<th>Licensor</th>
<th>Licensee</th>
</tr>
</thead>
<tbody>
<tr>
<td>✚ Create new source of revenues</td>
<td>✚ Gain (fast) access to new technologies, products and processes</td>
</tr>
<tr>
<td>✚ Access new territories and markets (applications)</td>
<td>✚ Reduce R&amp;D costs and risks</td>
</tr>
<tr>
<td>✚ Influence market acceptance for technology and products</td>
<td>✚ Provide competitive advantage and IPR protection</td>
</tr>
<tr>
<td>✚ Share investment</td>
<td></td>
</tr>
<tr>
<td>✚ Create partnerships (R&amp;D, production and supply)</td>
<td>✚ Create partnerships (R&amp;D, production and supply)</td>
</tr>
<tr>
<td>✚ Settle infringement claim</td>
<td>✚ Settle infringement claim</td>
</tr>
</tbody>
</table>
Cross-licensing
Cross-licensing

β Ensures FTO (Freedom to Operate)
β Basis for joint R&D-projects (background IP; new foreground IP, possibly joint development)
β Can be glue for collaboration
Importance of IPR for Start-ups

How important or unimportant is each of the following in your company’s ability to capture competitive advantage from its technology inventions?


1,332 early-stage technology companies founded 1998 - 2008
Importance of Patents for Start-ups

How important or unimportant have the following been to your company in seeking patent protection in the United States?

- Prevent others from copying our products or services
- Improve chances of securing investment
- Improve chances / quality of liquidity (e.g., IPO / acquisition)
- Enhance company reputation / product image
- Improve negotiating position with other companies (e.g., cross-licenses)
- Prevent patent infringement actions against us
- Obtain licensing revenues

(1=Not at all important; 2=Slightly important; 3=Moderately important; 4=Very important)

1,332 early-stage technology companies founded 1998 - 2008
Start-up Financing Phases

- Co-founders
- Seed Capital
- Angels, FFF
- Accelerators
- Equity Crowdfunding & Crowdlending
- VCs, Acquisitions/Mergers & Strategic Alliances
- Later Stage
- Early Stage
- Mezzanine
- 3rd
- 2nd
- 1st
- Break even
- Valley of Death
- IPO
- Secondary Offerings
- Public Market
Start-up Financing Phases (Biotech)
Importance of Patents for VCs

<table>
<thead>
<tr>
<th>Situation of VC</th>
<th>Vale add of Patent</th>
</tr>
</thead>
<tbody>
<tr>
<td>✖ Information asymmetry between VC and start-up</td>
<td>✖ Help overcome information asymmetries</td>
</tr>
<tr>
<td>✖ Information decision at high degree of uncertainty</td>
<td>✖ Lower uncertainty (to a certain extent)</td>
</tr>
<tr>
<td>• No track record</td>
<td>• Signal for novel and inventive technology</td>
</tr>
<tr>
<td>• No revenues</td>
<td>• Seal of quality</td>
</tr>
<tr>
<td>• High risk</td>
<td></td>
</tr>
<tr>
<td>✖ Problem of securing investment</td>
<td>✖ Economic benefit</td>
</tr>
<tr>
<td>• In case of success</td>
<td>• In case of success</td>
</tr>
<tr>
<td>• In case of failure</td>
<td>• In case of failure (VC owns patent)</td>
</tr>
</tbody>
</table>

Harhoff, D.: The role of patents and licenses in securing external finance for innovation. EIB Papers, Vol 14 (2)
Cumulative probability of success of start-ups

Subsample of 587 VC backed start-ups (post-investment)

Subsample of 587 VC backed start-ups (post-investment), 2007 till 2012


Probability of success of start-ups

<table>
<thead>
<tr>
<th>With patent</th>
<th>30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without patent</td>
<td>8%</td>
</tr>
<tr>
<td>Patent premium</td>
<td>22%</td>
</tr>
</tbody>
</table>
Importance of patents for funding – case studies

**Recycling waste heat to cool down the planet**

A renewable energy company founded in 2008, Ocean Energy, offers standard components for heat power generators that recycle waste heat by turning it into electricity, using the Organic Rankine Cycle (ORC), a process similar to that used in steam engines. Having started as a spin-off from the Technical University of Munich (TUM) in Germany, Ocean now has 65 employees. Patents are important, because the risk of Ocean’s standard components being copied is high. Eight early patents were filed by the TUM and then subsequently acquired by Ocean. Ownership of these patents was vital in order to attract funding. Ocean co-operates with other companies, but simplifies patent management by avoiding joint ownership. It has a detailed patent protection strategy and understands when to file a patent application and when not to file it.

**Using red algae to fight the flu**

Founded in 2006, Marinomed is an Austrian biopharmaceutical spin-off from the Veterinary University of Vienna. The company’s main technology platform is based on the natural polymer Caragelose, which is isolated from red algae and is active against respiratory viruses. As a drug discovery company, Marinomed is heavily dependent on patent protection. It has three main patents, which have been validated in almost 100 countries, and a trade mark registered in around 50 countries. The company actively manages its patent portfolio and grants licences for its technology. Marinomed has experienced infringement of its patents, but was able to resolve the cases without going to court.
Importance of patents for funding – case studies

Recycling waste heat to cool down the planet

A renewable energy company founded in 2008, Orcan Energy offers standard components for heat power generators that recycle waste heat by turning it into electricity using the Organic Rankine Cycle (ORC), a process similar to that used in steam engines. Having started as a spin-off from the Technical University of Munich (TUM) in Germany, Orcan now has 65 employees. Patents are an important asset.

Andreas Schuster
Co-founder and CTO, Orcan Energy

Using red algae to fight the flu

Founded in 2006, Marinomed is an Austrian biopharmaceutical spin-off from the Veterinary University of Vienna. The company’s main technology platform is based on the natural polymer Carrageenan, which is isolated from red seaweed and is used in several pharmaceutical applications. As a direct-disclosure company, it is vital that we own and manage the IP associated with our products.

Andreas Grossauer
CEO, Marinomed

Two out of a series of 12 case studies (produced by the EPO in 2017)
Importance of patents for funding – case studies

www.epo.org, case studies

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Recycling waste heat to cool down the planet

A renewable energy company founded in 2008, Ocean Energy offers standard components for heat power generators that recycle waste heat by turning it into electricity, using the Organic Rankine Cycle (ORC), a process similar to that used in steam engines. Having started as a spin-off from the Technical University of Munich (TUM) in Germany, Ocean now has 65 employees. Patents are key to the company’s success.

“Patent protection is critical when it comes to venture capital funding for early-stage technology companies”

Andreas Schuster
Co-founder and CTO, Ocean Energy

Using red algae to fight the flu

Founded in 2006, Marinomed is an Austrian biopharmaceutical spin-off from the Veterinary University of Vienna. The company’s main technology platform is based on the natural polymer Carrageen, which is isolated from red algae and is active against respiratory viruses. As a direct consequence of the patents, the company was able to secure €17 million in funding from the European Union.

“Marinomed is an IP-driven company. It is vital that we own and manage the IP associated with our products.”

Andreas Grossauer
CEO, Marinomed

Also for mature companies
Reputation

Companies:
§ For employees / new recruits
§ For customers
§ For suppliers
§ For collaborators
§ For research grants
§ For investors

Academia:
§ For being recognized as an expert in a certain field
Reputation
For product: promotion / marketing

Here’s a bright beauty idea for summer! Treat your skin to TimeWise® Tone-Correcting Serum, featuring our patent-pending† Perfectly Bright™ Complex. Scientists at the Mary Kay Research Center discovered that the extract of the navy bean had impressive brightening benefits, and the power of the navy bean is at the core of the Perfectly Bright™ Complex! | Mary Kay

Features a first-ever brightening breakthrough in our patent-pending† Perfectly Bright™ Complex.

†U.S. Pat. Nos. 8,747,926 and 8,481,090 and Other Pats. Pend.

Source: Mary Kay
New IP based business models

β NPE (non practicing entities)
β PAE (patent assertion entities)

β IP brokers
β IP auctions
β IP exchanges

β Effect of Unitary Patent / Unitary Patent Court ?
(26 EU member states)
Summary
IP value extraction

- IP supported exclusivity
- Additional income generation
- Gaining technology access
- Fundraising
- Reputation
- New IP based business models