DG Joint Research Centre

Technology Transfer and Intellectual Property Rights (IPRs)

Elena Andonova, 24th of May, 2017, Thessaloniki
About Me

- Policy work in technology transfer
- Seven years technology transfer experience from Oxford
- Experience in 20+ ecosystems
- Drove spin out of a medical device
- Corporate finance and securitisation
- Economics and business administration background
About Us

- The European Commission's in-house science service, provides EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

- Headquarters in Brussels, with research institutes in Belgium, Germany, Italy, the Netherlands and Spain.
1. Introduction to:
   Intellectual Property and Intellectual Property Rights (IPRs)

2. What is Technology Transfer?
   Tools of technology transfer (assignment, licensing, spin-off, joint ownership)

3. Types of IPRs?
   What and how to protect?

4. Management of IPRs
   Protection, maintenance etc
Introduction
It is worth protecting

PS. Nicola Tesla died impoverished and in debt  @Nicola Tesla picture – http://www.ancient-code.com/nikola-teslas-incredible-ufo/
Value of Intangibles

COMPONENTS of S&P 500 MARKET VALUE

<table>
<thead>
<tr>
<th>Year</th>
<th>Tangible Assets</th>
<th>Intangible Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td>1985</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>1995</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>2005</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>2015</td>
<td>16%</td>
<td>84%</td>
</tr>
</tbody>
</table>

Source: Ocean Tomo, LLC
What is IP and IPR

- Intellectual Property (IP) is a form of “intangible asset” which relates to creations of the human mind.
- Intellectual Property Rights (IPR) are legal rights granted to creators of IP to give them protection over their intangible assets.
- IPR grants you the ownership of your creation. If you own it, then you can use it!
- IP offers a myriad of options: exploiting, licensing, cross-licensing, attract investment etc.
Examples of IP

**Bain type-printing telegraph 1841**

**Apple® IPhone®**

**Leffe®**

**BIMW®**

**Astra Zeneca’s Crestor®**
Technology Transfer
What is Technology Transfer

Technology transfer resources

Research

Product
Technology Transfer Process

- Identify Ownership
- Protect IPRs
- Translate Proof of concept
- Market Spin out or License
- Manage Post-deal

IDEAS

IMPACT
Types of IP
<table>
<thead>
<tr>
<th>IP</th>
<th>Inventions</th>
<th>Trade Secrets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industrial Property</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Inventions</strong></td>
<td><strong>Trade marks</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Trade names</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Geographical Indications</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Aesthetic creations</strong></td>
<td><strong>Designs (industrial design)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Intellectual Property</strong></td>
<td><strong>Literary &amp; artistic creations</strong></td>
<td><strong>Copyright</strong></td>
</tr>
</tbody>
</table>
Copyright

- Vested in literary, artistic and scientific creations of the mind, such as movies, music, books, drawings, works of architecture, software, paintings, statues, photographs
- No formal registration required – Soft IP
- Valid during the life of the creator + 70 years thereafter
Copyright rights

**Economic rights**

- the rights to exploitation of a work
- cover: the right of reproduction, communication to the public, distribution
- usually obtained by the Contracting authority or employer under contracts, but also under Licences or Assignment Agreements
Copyright rights

Moral rights

Authorship – the right of paternity

The right to:

• claim or to refuse authorship of his work
• be mentioned as an author of the work
• decide on how his/her name shall (not) be mentioned
• decide whether the work shall be released to the public under name of a third party
• oppose to a false attribution
**Trademarks**

- Conceived to distinguish goods and services of the entrepreneur from those of someone else
- Trademarks are distinctive signs
- Highly valuable, to attract goodwill

*goodwill is the value of the attraction of a business or product to customers that the trade mark possesses*

<table>
<thead>
<tr>
<th>Brand</th>
<th>Value (bn$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>apple</td>
<td>154</td>
</tr>
<tr>
<td>google</td>
<td>83</td>
</tr>
<tr>
<td>microsoft</td>
<td>75</td>
</tr>
<tr>
<td>coca-cola</td>
<td>59</td>
</tr>
<tr>
<td>facebook</td>
<td>53</td>
</tr>
<tr>
<td>toyota</td>
<td>42</td>
</tr>
</tbody>
</table>

*source: Forbes 2016*
Trademarks

Relate to goods and services

Potentially perpetual

Territorial

Transferable rights

Registered or Unregistered
• Application:
  • National
  • EU EUTM
  • International
• Registration fee to be paid every 10 years
Trademarks

- Registration requirements:
  - graphically representable
  - show distinctiveness
  - not deceptive
  - actually used
Patent is a type of IPR which relates to “Technical Inventions”. It is a territorial right granted by a State for a limited time period (20 years).

Technical Invention:
A new and inventive technical solution to a technical problem
"Selfie - stick"

- **Technical problem:** How to take a picture of oneself?
- **Technical solution:** A monopod used to take photographs by positioning a camera beyond the normal range of the arm. The metal stick is typically extendable, with a handle on one end and an adjustable clamp on the other end to hold a camera in place.

Apparatus for supporting a camera and method for using the apparatus
Application number: US11593806
Inventor: Wayne G. Fromm
Grant date: 2010-03-23
Patentability criteria

- Novel? = is it different
- Inventive? = so what
- Useful?
- Also has to be.....
  - Not excluded
  - Sufficiently described
Patent rights

• Exclusive right to prevent others from making, using, selling or importing patented products in the territory where the patent was granted

• Sell these rights or conclude licensing contracts

• For up to 20 years from the date of filing of the patent application
## Types of Patents

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Products</strong></td>
<td>chemical and pharmaceutical products, devices, machines, materials (alloys, polymers, ), electronic components, etc.</td>
</tr>
<tr>
<td><strong>Processes</strong></td>
<td>for manufacturing chemical or pharmaceutical products, for polishing steel, for controlling an industrial process, etc.</td>
</tr>
<tr>
<td><strong>Apparatus</strong></td>
<td>for producing the product, etc.</td>
</tr>
<tr>
<td><strong>New uses</strong></td>
<td>of known products</td>
</tr>
</tbody>
</table>
What cannot be patented

- Medical and surgical treatments
- Mathematical methods
- Business methods
- Discoveries
- Aesthetic creations
- New plant or animal species
- Inventions which are contrary to moral standards and public order (e.g. instruments of torture)
- The human body and any non-separate part/s thereof

Grey areas: Biotech inventions and computer software
Important!

Check prior art!

Do not publish before the patent application is filed!

Espacenet (EPO) and Patentscope (WIPO) databases provide access to information on patents published around the world.

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**EUROPEAN PATENT SPECIFICATION**

Date of publication of patent specification: **16.12.92**

Application number: **86302299.2**

Date of filing: **27.03.86**

Divisional application 92201226.5 filed on 27/03/86.

Publication number: **0 201 184 B1**
Management of IPRs
Why Patent

You’ve Developed a New Electric Engine: Why Protect?

• “Protects my small firm from larger competitors”
• “I can sell it as a licence”
• “It’s valuable in R&D collaboration”
• “It’s the starting point for a new spinout company”
• “It’s good for our reputation”
• “We have to gain a monopoly on commercialising otherwise developing it is not worthwhile”
• “It blocks my competitors”
Should an invention be patented?

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusivity, enables investment and higher return on investment</td>
<td>Reveals invention to competitors (after 18 months)</td>
</tr>
<tr>
<td>Strong, enforceable legal right</td>
<td>Can be expensive</td>
</tr>
<tr>
<td>Makes invention tradable</td>
<td>Patent enforceable only after grant</td>
</tr>
</tbody>
</table>
How to protect

<table>
<thead>
<tr>
<th>Application Procedures</th>
<th>National (through national patent offices)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>European (through the European Patent Office)</td>
</tr>
<tr>
<td></td>
<td>International (through the PCT procedure via WIPO)</td>
</tr>
</tbody>
</table>
The Process

- Technical Invention Declaration Form
- Patentability analysis by patent attorney
- Decision
- Drafting Patent
- Application
IP Promotion

The invention was developed for/with a potential licensee

Networking, personal contacts

Direct mailing

Brokerage Events – Innovation fairs

Dissemination of Technology Profiles:

- JRC Internet
- Specialised websites (EEN)
JRC Technology Profile

A multi-level summarisation of large surveillance image streams

Description

Images and video are being captured and stored at an ever increasing rate. With this trend likely to continue, the need for tools to review large image sets is becoming a central issue in video based forensics. Currently the effort required to review these captured images and video are significant.

The VideoZoom review tool aims to make the best use of a reviewer’s time by presenting summarised images taken from a fixed camera. The system presents all the information in the video in a compact way allowing a reviewer to quickly understand what happened in a video and to decide what to investigate in detail.

The VideoZoom review tool creates a ‘pyramid’ of summary images built from the video. It then presents the summaries in layers of increasing detail. Each subsequent layer provides more information than the last to the reviewer, allowing them to decide if further consideration is necessary. A reviewer can smoothly zoom out to see many images at once, or zoom in to see a single image in full detail.

Innovative aspects and main advantages

- Reviewer-guided approach, summarising large volumes of information without removing events or objects.
- Reduced number of images for the reviewer to identify relevant events.

Areas of application

- Image reviews for nuclear safeguards inspectors
- Image forensics based on surveillance streams
- Video summarisation

Stages of development

Prototype is under evaluation by nuclear safeguards inspectors. Granting of non-exclusive licences is possible.

Scientific contact

Cristina Versino
Institute for Transuranium Elements
Joint Research Centre, Ispra
European Commission
Email: cristina.versino@jrc.ec.europa.eu

Licensing contact

Intellectual Property & Technology Transfer Unit
Joint Research Centre, Brussels
European Commission
Email: EC-ITTO@ec.europa.eu

Reference: 2004
## Marketing of IP

<table>
<thead>
<tr>
<th>Confidentiality Agreements (NDA)</th>
<th>Protects the data and information shared about the parties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Limits the scope for which the data can be used</td>
</tr>
<tr>
<td></td>
<td>Typically for a limited time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Transfer Agreements</th>
<th>Protects material transferred between the parties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Establishes clear ownership of the material</td>
</tr>
<tr>
<td></td>
<td>Defines scope and purpose of the transfer</td>
</tr>
</tbody>
</table>
Marketing of IP - Assignment

- Permanent transfer of ownership of an IP right such as patent, trademark, copyright from the assignor to the assignee
- Immediate cash flow, once time lump payment but no royalties
- No further responsibility (but also no control!) over the management / protection of the IP
## Marketing of IP - Licensing

<table>
<thead>
<tr>
<th>License Agreements</th>
<th>Allows the licensee to use and exploit the IP (in the absence of the license agreement, the user would be infringing the licensor’s legal rights)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Defines the scope, duration and geographical areas (exclusive vs non-exclusive, worldwide vs limited)</td>
</tr>
<tr>
<td></td>
<td>Terms would typically include law and jurisdiction, obligations, liabilities, sub-licensing, options to developments</td>
</tr>
<tr>
<td></td>
<td>Defines the payments, including royalties (minimum royalties?) or lump sums</td>
</tr>
</tbody>
</table>
A spin-out company formed from research carried out by the Joint Research Centre, the European Commission's research organisation, developing new technology and bringing it to the market.

Spin-outs – mediators between research and business.

New entity, independent from the research organisation.

License agreement with the research organisation, often the research organisation is the owner of the IP.
Nucleonica
a JRC's spin-out

- Created March 2011 by a former staff member to undertake the further development of the Nucleonica portal
- Nuclear science web portal developed at the JRC’s Institute for Transuranium Elements
- Provides users with access to various web-based nuclear science applications and programmes, social networking tools, basic nuclear data on more than 3800 radionuclides, and an array of databases, graphics, and other informative material
Conclusion

Features of the Technology Transfer Process

<table>
<thead>
<tr>
<th>Identification of IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of protection</td>
</tr>
<tr>
<td>Drafting of legal agreements</td>
</tr>
<tr>
<td>Business planning</td>
</tr>
<tr>
<td>Negotiations</td>
</tr>
<tr>
<td>Advice / revision of IP clauses in contracts</td>
</tr>
</tbody>
</table>
Thank you!