The European Patent Office
An introduction to patents in Europe

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Date: 02.10.2014
Overview

- Intellectual property (IP)
  - Different forms of IP
  - What is a patent?
  - How to get a patent in Europe

- The EPO: one of the largest patent offices in the world
  - IP5
  - The EPO

- The EPO: facts and figures
- The patent examiner
## Overview of intellectual property rights

<table>
<thead>
<tr>
<th>Legal right</th>
<th>What for?</th>
<th>How?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patents</td>
<td>New inventions</td>
<td>Application and examination of the application</td>
</tr>
<tr>
<td>Copyright</td>
<td>Original creative or artistic forms</td>
<td>Exists automatically</td>
</tr>
<tr>
<td>Trade marks</td>
<td>Distinctive identification of products or services</td>
<td>Use and/or registration</td>
</tr>
<tr>
<td>Registered designs</td>
<td>External appearance</td>
<td>Registration*</td>
</tr>
<tr>
<td>Trade secrets</td>
<td>Valuable information not known to the public</td>
<td>Reasonable efforts to keep secret</td>
</tr>
</tbody>
</table>
Example: one mobile phone; several IP rights

**Trade marks:**
- Made by "Nokia"
- Product "N95"
- Software "Symbian", "Java"

**Patents:**
- Data-processing methods
- Semiconductor circuits
- Display

**Trade secrets:**
- ?

**Copyrights:**
- Software code
- Instruction manual
- Ringtones

**Designs (some of them registered):**
- overall shape of phone
- arrangement of buttons in an oval configuration
- three-dimensional waveform of buttons
What is a patent?

- A patent is a legal title granting its holder the exclusive right to **prevent** third parties from exploiting an invention (making, using, offering for sale, selling or importing infringing products) without authorisation in a defined country and for a limited period, e.g. 20 years.

- In return for this protection, the holder has to disclose the invention to the public.
Patenting: pros and cons

**For inventors:**

- Exclusivity enables investment and higher returns on investment
- Strong, enforceable legal right
- Makes invention tradable (licensing)
- Reveals invention to competitors (after 18 months)
- Can be expensive
- Patent enforceable only after grant (this can take 4 to 5 years)

**For industry, patents are a prime source of new technical knowledge and help:**

- identify new technological trends and new business partners
- inspire further inventions
- prevent the duplication of R&D in industry and universities
Alternatives to patenting

Information disclosure (publishing)

- Cheap
- Prevents others from patenting the same invention
- Does not offer exclusivity
- Reveals the invention to competitors

Trade secret

- Cheap (but there is the cost of maintaining secrecy)
- Does not reveal the invention
- No protection against reverse-engineering/duplication of invention
- Difficult to enforce
- "Secrets" often leak quite fast

Do nothing

- No effort required
- Does not offer exclusivity
- Competitors often find out
How to get a patent in Europe?

Patent applications can be filed:

- separately via national patent offices
  => national patent **valid only in the country** where it is granted

- with the EPO
  => **single examination procedure**
  => a European patent is **equivalent to national patents** in the countries for which it is granted

- as an international (PCT) application
  => just one application for up to 143 countries
  => after the initial application phase, the international application leads to **multiple national patent examination procedures**
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  - IP5 offices
  - The EPO
- The EPO: facts and figures
- The patent examiner
PATENT OFFICE?

IT HASN'T BEEN INVENTED YET!
The five largest intellectual property offices in the world have set up a forum to improve the efficiency of the patent examination process worldwide.

The aim is to reduce the growing backlog by eliminating the duplication of work at each of these offices on families of patent applications.
The EPO

- As the patent office for Europe, we deliver the services defined under the European Patent Convention (EPC). The EPC provides the legal framework for the granting of European patents via a centralised procedure.

- We provide patent protection in up to 40 European countries based on a single application in either English, French or German, our three official languages.

- We are:
  - the second largest intergovernmental institution in Europe
  - not an EU institution
  - self-financing, i.e. revenue from fees covers operating and capital expenditure

- The EPO has offices at five different locations. Its headquarters are in Munich.
The European Patent Convention

- 1973 – Diplomatic Conference in Munich ➤ EPC signed by 16 countries

- 1977 – EPC enters into force in seven countries

- 2011 – 38 member states
  Albania • Austria • Belgium • Bulgaria • Croatia • Cyprus • Czech Republic • Denmark • Estonia • Finland • France • Germany • Greece • Hungary • Iceland • Ireland • Italy • Latvia • Liechtenstein • Lithuania • Luxembourg • Former Yugoslav Republic of Macedonia • Malta • Monaco • Netherlands • Norway • Poland • Portugal • Romania • San Marino • Serbia • Slovakia • Slovenia • Spain • Sweden • Switzerland • Turkey • United Kingdom
European Union
28 members

European Patent Organisation
38 members
The EPO's services to industry

- Free online services
  - filing
  - fee payment
  - file inspection
  - tracking of the legal status of applications

- Free patent information services (1998 Espacenet)
  - online access to all European patent documents (updated weekly)
  - simple online searches in our database of over 70 million patent applications
  - helpdesk staffed by experts on the Japanese, Chinese and Korean patent systems

- Training (European Patent Academy)
  - conferences
  - workshops and seminars
  - e-learning
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Filing rates at selected patent offices

- Continuous growth in Europe
- Rising demand in Asia
Origin of European patent applications (2010)\(^1\)

1 European patent applications filed with the EPO have been allocated to the country of residence of the first-named applicant.
Technical fields \(^1\) generating the most applications (2010) \(^2\)

1. Medical technology: 10,479
2. Computer technology: 8,257
3. Electrical machinery, apparatus, energy: 8,241
4. Digital communication: 7,951
5. Biotechnology: 7,435
6. Organic fine chemistry: 7,269
7. Pharmaceuticals: 6,654
8. Measurement: 6,239
9. Transport: 5,869
10. Telecommunications: 5,687

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1. Classified according to the IPC and technology concordance table compiled by the Fraunhofer ISI for WIPO.
2. Based on European patent applications filed with the EPO.
Top applicants seeking protection with the EPO in 2010

1. Siemens 2 135
2. Philips 1 765
3. BASF 1 707
4. Samsung 1 691
5. Qualcomm 1 682
6. Panasonic 1 400
7. Robert Bosch 1 400
8. Sony 1 286
9. LG 1 263
10. Bayer 1 123
11. Mitsubishi 1 096
12. Ericsson 1 095
13. General Electric 1 084
14. Research in Motion 907
15. Hoffman - La Roche 811
16. Alcatel 773
17. Hitachi 741
18. Huawei 730
19. 3M 710
20. Johnson & Johnson 709
21. EADS 688
22. Canon 653
23. Toyota 651
24. Fujitsu 642
25. Honeywell 642

1 Based on European patent applications filed with the EPO.
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Patent requisites

- **What does a patent look like?**
  - Bibliographic information
    - Inventor, proprietor, date of filing, technology class, etc.
  - Description
    - Summary of prior art (i.e. the known existing technology)
    - The problem that the invention is supposed to solve
    - An explanation and at least one way of carrying out the invention
  - Claims
    - Define the extent of patent protection
  - Drawings
    - Illustrate the claims and description
  - Abstract
    - Around 150 words as a search aid for other patent applications

- **To be patentable, an invention must at least:**
  - have technical character (e.g. comprise a product, process or apparatus)
  - be new (no previous public notice)
  - involve an inventive step (i.e. not an "obvious" solution)
  - be industrially applicable
  - on the face of it not be excluded from patentability
Examples of prior art
Examples of prior art

An aircraft tire or wheel is provided with pockets or ridges, which catch the airflow past the wheel and cause the wheel to rotate. The pockets or ridges may be formed in the tire or an additional member for attachment to the wheel. Means may be provided for diverting air from a pocket into the wheel assembly for cooling purposes.
Inventive step – an introduction

- The Problem-Solution Approach (PSA)
  - Used at the EPO to assess inventive step, involves defining difference, objective technical problem > analyse solution in claim of application
  - Person skilled in the art, can be a group

- Example using the information on the prior slide:
  - Application: The newer GB document
  - Prior art: The older document to the right in the picture
  - PSA - assume that the claim in the GB application states that:
    - the pockets 6 are
      - i) formed on an additional member for attachment to the wheel and,
      - ii) designed so that air is diverted into the wheel assembly for cooling purposes.
Inventive step – an introduction, cont.

- Objective technical problem would be:
  - To adapt the teaching of the older document so that it achieves that cooling air is diverted into the wheel assembly.

- Question for the examiner:
  - Assuming that the person skilled in the art is aware of the older document, is the features of the claim obvious to this person?
The patent examiner (1)

- Assesses patentability of application, grants patents and may process oppositions in his or her technical field of expertise

### European Patent Application

- **Applicant**
  - European patent application
  - Filing and formalities check

- **EPO**
  - Search and search report together with preliminary opinion on patentability
  - Substantive examination

- **Public domain**
  - Publication of application and search report
  - Online access to application file and legal status information
  - Observations by third parties possible

- **Withdrawal of application**
- **Validation in designated states**
- **Grant of European patent**
  - Publication of patent specification
  - Opposition by a third party
  - Limitation or revocation proceedings
  - Opposition proceedings
  - Appeal

### Timeline
- **18 months**
- **Approx. 3 to 5 years**
- **9 months**
The patent examiner (2)

- Works with applications and with colleagues from all EPO member countries in all three official languages

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<tr>
<th>Country</th>
<th>Number of staff</th>
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<tbody>
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<td>Others</td>
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Total: 6 818
The patent examiner (3)

- Strictly applies legal texts and quality standards

Highly skilled examiners

Rigorous controls and commitment to improvement

Quality

Comprehensive search documentation

Thorough and consistent procedures
Highly skilled examiners

- Top-level engineers and scientists
  - high degree of technical expertise
  - good knowledge of the EPO's three official languages

- Training during first two years
  - extensive legal and procedural training
  - personal coaching by experienced examiners

- Continuing professional development throughout career
Thorough and consistent procedures

- **Single procedure**
  - the European Patent Convention provides the legal framework for the granting of European patents

- **Systematic approach**
  - each application is examined by a division of three technically qualified examiners

- **Review processes**
  - each opposition is examined by three technically qualified examiners, at least two of whom will not have been involved in the grant proceedings for the patent
  - appeals heard by independent second-instance judiciary (boards of appeal)
Comprehensive search documentation

- World's largest collection of patent and non-patent literature documents, containing **more than 540 million records in over 120 databases** and updated daily

- Online access to **more than 6 000 journals** via the EPO Virtual Library

- New tools and services such as **machine translation** to extend the range of easily accessible information

- Ongoing efforts to **improve the scope and quality** of our documentation
Rigorous controls and commitment to improvement

- Up-to-date guidelines and instructions for examiners
- Spot checks on search reports and patent quality
- Internal quality audits
The patent examiner  (extract from the EPO website)

- The job of a European patent examiner demands a unique combination of scientific expertise, analytical thinking, language skills and an interest in intellectual property law.

- **Minimum requirements:** candidates must meet the following formal requirements:
  - Citizenship of one of the member states of the European Patent Organisation.
  - Full university degree in physics, chemistry, engineering or natural sciences. The degree should be relevant to the technical field in which you would like to work.
  - Generally, an excellent knowledge of one official language (English, French and German) and the ability to understand the other two.
  - You should also have a genuine interest in technology, an eye for detail and an analytical mind.

- **Experience**
  - Work experience in industry is not essential, but would be an advantage.

- **Relocation**
  - Applicants must also be willing to relocate to Munich, The Hague or Berlin.
Need more information?

- Visit [www.epo.org](http://www.epo.org)
- Contact us at [www.epo.org/contact](http://www.epo.org/contact)
- Follow us on:
  - [www.facebook.com/europeanpatentoffice](http://www.facebook.com/europeanpatentoffice)
  - [twitter.com/EPOorg](http://twitter.com/EPOorg)
  - [www.youtube.com/EPOfilms](http://www.youtube.com/EPOfilms)
  - [www.linkedin.com/company/european-patent-office](http://www.linkedin.com/company/european-patent-office)
Thank you for your attention.

I very much appreciate feedback. If you have any feedback, please email me on: 

hbaggeaf@epo.org