Context:

To provide a detailed analysis of the European patent system:
- Challenges,
- Weaknesses,
- Policy recommendations
Methodology:

- Meet several actors from the business sector,
- Recent economic research (WPs),
- Book (Guellec and BVP, 2007),
- Statistical analyses,
- Today’s workshop,
- Meetings at the EPO (October),

- Feedbacks from colleagues and selected experts on final version
Outline:

- **Context**
- **Stylized facts**
  - Boom in filings
  - Boom in size
  - Burn out symptoms: backlogs
  - Higher propensity, drop in quality
- **The quality challenge**
- **Building Europe**
- **Policy recommendations**
Total patent fillings at the USPTO, JPO and EPO, 1980-2006

Drivers of the boom

- Fast developing countries (BRICS, South Korea, Taiwan);
- New technologies;
- New actors like SMEs;
- New actors like universities (from 0.5 to 4%);
- Globalization (made easy through the PCT process);
- Strategic patenting (higher propensity);
A higher propensity: patent per R&D expenditure (million 2000 US PPPs)

Higher propensity due to strategic patenting

- to “freeze” a technology;
- to guarantee its own freedom to operate;
- Communication: an innovator on the market;
- to build negotiation power;
- to avoid being ‘invented around’ (thickets);
- to invent around the patents filed by other companies;
- to “create a smoke screen”: i.e., ‘hide’ the important one.
- to maximize the probability to have ‘something’ granted
New ‘filing’ strategies

- Patent drafting practices;
- Interaction with patent offices;
- Route chosen to patent at the EPO;

TYPOLOGY

- Fast track and good will: small patents, well drafted, clearly written; direct replies.
- Deliberate abuse of the system: very large patents, unclear, multiple dependent claims; late replies, Divisionals...

Average number of claims per patent filed at the USPTO, JPO and EPO, 1980-2006
Incoming workload:
total number claims filed, 1980-2006 (millions)

... induce growing backlogs and pendency

Number of patents in examination
... Number of claims in pendency (millions)

Higher propensity and a drop in quality at EPO
In a nutshell:

- Higher propensity to patent (strategic patenting)
- New filing strategies (larger patents)
- Generate backlogs
  - double at EPO since 2000: more uncertainty
  - but three times larger at the USPTO
- With lower quality patents pending longer

- Puts pressure on examiners (more workload), and might reduce the quality of examination process
- Low quality of examination is dangerous (?)
- Problem more important for the US

Solutions so far (press releases):

- Improved performance monitoring of examiners (strikes)
- Mutual recognition of search reports in Japan and USA
- Higher fees
- Use of work performed by national patent offices

USPTO
- Use of work performed by national patent offices
- Use of work performed by EPO, JPO
- More examiners (sharp increase recently)
Outline:

- Context
- Stylized facts
- The quality challenge
  - Transparency
  - Flexibility
  - Subject matter
  - Quality of examination
- Building Europe
- Policy recommendations

The quality challenge

- Transparency
  - Databases and search tools more widely available
  - Need for claim-based searches with AI software (public)
  - Publish requests for accelerated search and examinations
  - Database on patents in force (easy to search)
  - Advanced search services offered by NPOs
  - Other ideas...?
- Flexibility
- Subject matter
- Quality of examination
The quality challenge

- **Transparency**
- **Flexibility for examination process?**
  - Reduce reliance on excessive divisionals
  - Stop the presumption of validity (reverse?)
  - Oral proceedings controlled by examiners?
- **Subject matter**
  - Domains for which prior art is not codified (business methods, traditional knowledge) or difficult to identify (software, source codes) should not be patentable
- **Quality of examination**

- Important difference between the US and Europe?
Quality differences: Claims filed per examiner

The quality challenge

- Transparency
- Flexibility for examination process?
- Subject matter
- Quality of examination
  - Important difference between the US and Europe
  - 4 times more productive in the US and Japan than in Europe?
  - Reduce low quality filings with **higher fees** and **more freedom for examiners** (to reject badly drafted applications, to tackle patent flooding)?
Fees (costs) and the demand for patents
Outline:

- Context
- Stylized facts
- The quality challenge
- Building Europe
  - The cost of non-Europe
  - Economic incongruities
  - Governance and stakes
- Policy recommendations

A fragmented patent system

APPLICATION
Centralized

EPO

ENFORCEMENT
Decentralized

MST 1
MST 2
MST 3
MST ...
MST 34

MST 1
MST 2
MST 3
MST ...
MST 34
Procedural steps and fees

- Drafting
- Priority Filing
- Search
- Examination
- Publication
- Request of examination
- Grant
- Translation and validation fees
- Renewal fees

International extension (other patent offices or PCT)

London Protocol

- London Protocol (LP)
  - Dispense Art 1(1) LP
    - D. NO
    - C. NO
    - CH/LI, DE, FR, LÜ, MC, UK
  - Claims Art 1(2) LP
    - D. NO
    - C. YES
    - LV, SI
  - Claims and Description* Art 1(2) LP
    - D. EN*
    - C. YES
    - HR, DK, IS, NL, SE
  - Not LP
    - D. YES
    - C. YES
    - AT, BE, BG, CZ, CY, EE, ES, FI, GR, HR, HU, IT, LT, MT, NO, PL, PT, RO, SK, TR
Relative cost savings due to the ratification of the London Agreement, 2008

London Agreement: 19 countries left....
Total savings for the business sector is 220 Million EUR

<table>
<thead>
<tr>
<th></th>
<th>EPO-3 (LA15)</th>
<th>EPO-6 (LA15)</th>
<th>EPO-13 (LA15)</th>
<th>EPO-34 (LA15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>absolute translation savings in EUR</td>
<td>2,432</td>
<td>3,648</td>
<td>4,864</td>
<td>9,728</td>
</tr>
<tr>
<td>Translation (%)</td>
<td>78%</td>
<td>59%</td>
<td>39%</td>
<td>26%</td>
</tr>
<tr>
<td>Procedural and Translation (%)</td>
<td>26%</td>
<td>29%</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td>Procedural, Translation and External Services (%)</td>
<td>-</td>
<td>16%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10Y excl. External Services (%)</td>
<td>21%</td>
<td>19%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>10Y incl. External Services (%)</td>
<td>-</td>
<td>11%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**International comparison of cumulated patent costs, 2008**
Procedural and translation cost relative to the US, 2008

<table>
<thead>
<tr>
<th></th>
<th>Per patent</th>
<th>Per claim</th>
<th>Per capita</th>
<th>3C-index</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPO-13</td>
<td>9.0</td>
<td>11.4</td>
<td>7.3</td>
<td>9.2</td>
</tr>
<tr>
<td>EPO-6</td>
<td>5.6</td>
<td>7.1</td>
<td>6.0</td>
<td>7.5</td>
</tr>
<tr>
<td>EPO-13(LA15)</td>
<td>6.9</td>
<td>8.7</td>
<td>5.6</td>
<td>7.0</td>
</tr>
<tr>
<td>EPO-6(LA15)</td>
<td>4.0</td>
<td>5.1</td>
<td>4.2</td>
<td>5.4</td>
</tr>
<tr>
<td>JPO, Japan</td>
<td>0.8</td>
<td>2.0</td>
<td>1.9</td>
<td>4.7</td>
</tr>
<tr>
<td>KIPO, South K.</td>
<td>0.7</td>
<td>1.7</td>
<td>4.5</td>
<td>10.8</td>
</tr>
<tr>
<td>SIPO, China</td>
<td>0.5</td>
<td>1.2</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>CIPO, Canada</td>
<td>0.5</td>
<td>0.6</td>
<td>4.6</td>
<td>5.3</td>
</tr>
<tr>
<td>IN-PO, India</td>
<td>0.4</td>
<td>1.0</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>BR-PO, Brazil</td>
<td>0.4</td>
<td>0.9</td>
<td>0.6</td>
<td>1.5</td>
</tr>
<tr>
<td>AU-PO, Australia</td>
<td>0.3</td>
<td>0.4</td>
<td>4.5</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Source: Adapted from van Pottelsberghe and Mejer (2008).

Renewal fees per million capita

Renewal years counting from the filing date:
- 5th-10th
- 11th-15th
- 16th-20th
A fragmented patent system

APPLICATION Centralized

ENFORCEMENT Decentralized

Diversity of national jurisdictions

<table>
<thead>
<tr>
<th>Country</th>
<th>Germany</th>
<th>France</th>
<th>The Netherlands</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judicial system</td>
<td>Dual system</td>
<td>Single system</td>
<td>Single system</td>
<td>Single system</td>
</tr>
<tr>
<td>The Court of First Instance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialized court</td>
<td>Federal Patent Court for invalidity; 12 District Courts for infringement (specialized court in Düsseldorf and Mannheim)</td>
<td>10 Tribunal de Grande Instance; (specialized patent judges in Paris and Lyon)</td>
<td>District Court in The Hague has a specialized IP chamber</td>
<td>Patents Country Courts and the Patents Court of the High Court</td>
</tr>
<tr>
<td>No of judges legally qualified</td>
<td>62</td>
<td>40</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>...out of those technically qualified</td>
<td>46</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Composition of the court (number of judges dealing with a case)</td>
<td>3 or 5</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Allgayer (2005), Council of the European Union Document No 11622/07 and EPO WPL/4/03;
**Patent litigation cost in four EPC contracting states and US** (in EUR 1,000)

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>France</th>
<th>The Netherlands</th>
<th>United Kingdom</th>
<th>Cumulative 4 EPC</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Instance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.a.</td>
</tr>
<tr>
<td>50 to 250</td>
<td>50 to 200</td>
<td>60 to 200</td>
<td>150 to 1,500</td>
<td>310 to 2,150</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2nd Instance</strong></td>
<td>90 to 190</td>
<td>40 to 150</td>
<td>40 to 150</td>
<td>150 to 1,000</td>
<td>320 to 1,490</td>
<td>n.a.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>140 to 440</td>
<td>90 to 350</td>
<td>100 to 350</td>
<td>300 to 2,500</td>
<td>630 to 3,640</td>
<td>420</td>
</tr>
</tbody>
</table>

**Litigation demand curve, 2006**

- EPO (1.9;60)
- US
- DE
- FR
- NL
- UK

Litigation cost per 1,000 capita (in EUR)
Outline:

- Context
- Stylized facts
- The quality challenge
- Building Europe
  - The cost of non-Europe
  - Economic incongruities
  - Governance and stakes
- Policy recommendations

Uncertainty and incongruities: 3 case studies

- **EU competition policy and national patent rights**
  Static (EU-DG Comp.) and dynamic efficiency (national)
  Different territorial jurisdictions, with different practices

- **Intra-EU “parallel” trade and national protection**
  Higher infringement risk, as no borders within EU
  Prohibitive cost of EU-wide protection

- **Time paradox**
  Inconsistent institutional order
### ‘The property hedge’

**Patent holder:** Epilady  
**Invention:** electronically powered depilatory device  
**Year of grant:** 1986  

<table>
<thead>
<tr>
<th></th>
<th>Validity</th>
<th>Infringement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFI upheld</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>EPO upheld</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Alleged infringer:** Remington  
**First litigation filled:** 1989  

**Discrepancy:** Claim interpretation

<table>
<thead>
<tr>
<th></th>
<th>AT</th>
<th>BE</th>
<th>DE</th>
<th>ES</th>
<th>IT</th>
<th>FR</th>
<th>NL</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validity</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Infringement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ‘A local currency?’

**Patent holder:** Document Security System (DSS)  
**Invention:** non replicable document and method for making same  
**Year of grant:** 2002  

<table>
<thead>
<tr>
<th></th>
<th>Validity</th>
<th>Infringement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFI pending</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>EPO</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Alleged infringer:** European Central Bank  
**Litigation filled:** 2005 (CFI)

**Discrepancy:**  
- ECB filed validity cases at N. C. in 2005  
- Parallel infringement case at CFI
‘Coffee Wars’

Patent holder: Sara Lee/DE and Philips Electronics
Invention: assembly for use in the coffee machine for preparing a coffee
Year of grant: 2001

Alleged infringer:
Belgian and Dutch retail chains

First litigation: 2001 (NL)

Discrepancy:
Interpretation of indirect infringement
Time paradox

- Belgium: held valid in 2004
- EPO revoked: 2006

<table>
<thead>
<tr>
<th></th>
<th>Validity</th>
<th>Infringement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFI</td>
<td></td>
<td>-</td>
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<tr>
<td>EPO</td>
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<td>-</td>
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<tr>
<td>ES</td>
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<tr>
<td>FR</td>
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<tr>
<td>NL</td>
<td>decision</td>
<td>postponed</td>
</tr>
<tr>
<td>UK</td>
<td></td>
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</table>

Heterogenous countries

Centralized European Court (EPO validity ECJ infringement)
National Court

Validity Infringement
Time paradox and heterogeneous countries

Centralized European Court (EPO validity ECJ infringement)

National Court

DSS

VALIDITY

INFRINGEMENT

Time paradox?

Centralized European Court (EPO validity ECJ infringement)

National Court

Senseo

VALIDITY

INFRINGEMENT
Summary

<table>
<thead>
<tr>
<th></th>
<th>Epilady</th>
<th>Senseo</th>
<th>DSS</th>
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<tbody>
<tr>
<td>EU competition policy</td>
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<td></td>
<td></td>
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<tr>
<td>and national patent</td>
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<tr>
<td>rights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intra-EU ‘parallel’</td>
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<td></td>
<td></td>
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<tr>
<td>trade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time paradox</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks

- We confirm the classical drawback of the EPS: patenting costs in the EU is prohibitive due to translation costs and national fees...

- And we illustrate two less ‘classical’ backwards
  - Heterogeneous litigations costs, high cumulated costs
  - Incongruities and variegated national practices

- Implications: reduces the intended stimulating effect
  - Costs (fee + managerial complexity)
  - High level of uncertainty
  - High managerial complexity: favours large players
Outline:

- Context
- Stylized facts
- The quality challenge
- Building Europe
  - The cost of non-Europe
  - Economic incongruities
  - Governance and stakes
- Policy recommendations

Governance and stakes

- Conflict between NPO and EPO’s interests
- Patent attorneys not convinced (translation business)
- Solution is with a Community patent with redistribution key
- New role of NPOs: support national innovation networks and offer search services, including PCT?
- Should the EPO be more responsive to EP?
Outline:

- Context
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Policy recommendations

- Solve the quality issues (more recommendations)
- Revise the EPC (economic evaluation, introduce 'recitals')
- Increase fees for examination and renewals, reduce translations
- Community patent would induce lower relative fees
- Reduce fees for Universities and SMEs
- EPLA (still to be defined)
- New role for NPOs
- EPO more related to EP
- Surplus generated should be used to feed basic research
- Fix the European problems first, global harmonization later.... (backlog is more important in the USA)
  - F2F, Publication, Grace period, Wage, Quality....