Intellectual Property Strategy in the Global Cosmetics Industry

A Soap Opera

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Why are we doing this?

- importance of IP and IP policy for innovation
- increased corporate use of various IP strategies
  - litigation, opposition
  - deep purse, cost of FUD (see Lerner, Hall and Ziedonis)
- patent systems make mistakes - how to fix them at lowest cost?
Why this industry?

- mundane industry - branding is important - average advertising intensity around 10%
- R&D intensities – ~2% much lower than in pharmaceuticals and biotechnology, but not trivially small
- high patent opposition activity even though not a high-technology industry – why?
Advertising and R&D Spending - Large Toiletries Firms

Advertising Intensity
Selected Toiletries/Cosmetics Firms

R&D Intensity
Selected Toiletries/Cosmetics Firms

Colgate  P&G  Unilever
EPO Patenting in A61K 7

Year of Application/Grant

- Applications
- Grants

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Introducing
VOLUMACTIVE
BODIFYING MOUSSE
THE FIRST STYLING TREATMENT TO
ACTIVATE VOLUME FROM WITHIN

Patented Innovation: The Vita-Ciment®
Complex 3D System reinforces fine, fly-away
hair with more strength, substance, and
body while enhancing overall shine.

PATENTED INNOVATION
VITA-CIMENT®
COMPLEX 3D SYSTEM

Exclusively at Kérastase Consultant Salons
Patent examination at the EPO

Application → Formal Examination → Publication of the Application and the Search Report (+18 months)

- Opposition/Appeal
- Granting of the Version Approved by the Applicant

Yes → Substantial Examination Passed → National Rights

No → Rejection of the Patent Application

Rejected → Appeal
Opposition Proceedings – Some Institutional Detail

- centralized proceedings, two instances (opposition and appeal) at the EPO
- modeled on the opposition mechanism in the German Patent System
- cost: 15,000-25,000 Euros
- subsequent litigation is at the national level (at much higher cost)
- any third party can oppose a patent grant within 9 months after the grant date
- once initiated by the opponent, opposed and opposing parties cannot settle “out of court”
- overall rate – 7%
  - ~30 times more likely than US patent re-examination
  - ~10 times more likely than US patent litigation
Incidence of opposition

EPO Opposition Rates
1983-1999

Year
Oppositions/grant

Cosmetics
Pharma/biotech
All technologies

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Opposition Proceedings – Some Institutional Detail

- Patent Grant
  - 9 months
  - Opposition
  - 2 months
  - Presentation of Proof
    - 4 (+2) months
    - Response by Patent Holder
      - 4 (+2) months
      - Response by Opponent
        - Decision
          - Revocation, Amendment, Rejection
            - Response by Patent Holder
              - Response Opponent
                - Final Decision
                  - Revocation, Amendment, Rejection
                    - Appeal by Patent Holder?
                      - Appeal by Opponent?
                        - Appeal Procedure (similar structure)
                          - 2 months
                          - Final Decision
                            - Revocation, Amendment, Rejection
                              - Appeal by Patent Holder?
                                - Appeal by Opponent?
                                  - Appeal Procedure (similar structure)
A Simple Model
When would we expect to see opposition?

Consider two cases

- Successful opposition transforms monopoly to duopoly (entrant opposition)
- Successful opposition preserves monopoly (incumbent opposition)
A Simple Model

When would we expect to see opposition?

threat points

\[ T_O = p_O \Pi^D - c_O \]
\[ T_P = p_P \Pi^D + (1 - p_P) \Pi^M - c_P \]

cooperative solution (settlement)

\[ CV = \Pi^s - S \]

Opposition will occur if the cooperative surplus is smaller than the sum of the threat points.

\[ (\Pi^M - 2\Pi^D)(1 - p_P) + (p_O - p_P)\Pi^D + (S - c_O - c_P) \geq (\Pi^s - 2\Pi^D) \]

\[ \Pi^M = (2 + \alpha) \Pi^D \]

“optimism” of the opponent

cost advantage of settlement

cooperation effect

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A Simple Model
When would we expect to see opposition?

\[
\Pi^D \geq \frac{\Delta C}{(1-p)\alpha}
\]

- \(p\Pi^D > \bar{c}_o\)
- \(\bar{c}_o\) decreases
- \(S\) increases or \(c\) decreases

\[
\Delta C = c_p + \bar{c}_o - S
\]
The likelihood of opposition increases with …

- increasing stakes (more valuable patents)
- diverging expectations
- degree of asymmetric information
- decreasing cost advantage of settlement vs. opposition proceedings relative to settlement costs (likely to be low in this case)
Data

- 8,501 EPO patent applications with A61K 7 as main or auxiliary classification (1978-2001)
- our sample: all 3,548 patents granted by Dec. 1995
- 523, or 14.7%, were opposed
- multiple oppositions:
  - 68% once
  - 20% twice
  - 12% three or more times
Patenting over time

Patent Application Rates for Selected Firms (Granted Patents)
1978-1995

Goldwell
Henkel
Wella
Unilever
l'Oreal
Procter and Gamble
Enter the main players

### Most Active Patenting Firms in Cosmetics 1978-2000

<table>
<thead>
<tr>
<th>Opponent</th>
<th>Number of Patents Granted</th>
<th>Oppositions Filed</th>
<th>Own Patents Opposed</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>HENKEL</td>
<td>221</td>
<td>207</td>
<td>23</td>
<td>9.00</td>
</tr>
<tr>
<td>GOLDWELL</td>
<td>33</td>
<td>93</td>
<td>16</td>
<td>5.81</td>
</tr>
<tr>
<td>WELLAR</td>
<td>110</td>
<td>60</td>
<td>21</td>
<td>2.86</td>
</tr>
<tr>
<td>BASF</td>
<td>65</td>
<td>15</td>
<td>8</td>
<td>1.88</td>
</tr>
<tr>
<td>MERCK</td>
<td>23</td>
<td>5</td>
<td>4</td>
<td>1.25</td>
</tr>
<tr>
<td>COLGATE-PALMOLIVE</td>
<td>43</td>
<td>16</td>
<td>13</td>
<td>1.23</td>
</tr>
<tr>
<td>BEIERSDORF</td>
<td>28</td>
<td>9</td>
<td>8</td>
<td>1.13</td>
</tr>
<tr>
<td>BRISTOL-MYERS SQUIBB</td>
<td>31</td>
<td>7</td>
<td>7</td>
<td>1.00</td>
</tr>
<tr>
<td>PROCTER &amp; GAMBLE</td>
<td>161</td>
<td>41</td>
<td>80</td>
<td>0.51</td>
</tr>
<tr>
<td>L'OREAL</td>
<td>538</td>
<td>53</td>
<td>141</td>
<td>0.38</td>
</tr>
<tr>
<td>SMITHKLINE BEECHAM</td>
<td>40</td>
<td>6</td>
<td>18</td>
<td>0.33</td>
</tr>
<tr>
<td>UNILEVER</td>
<td>274</td>
<td>25</td>
<td>91</td>
<td>0.27</td>
</tr>
<tr>
<td>KAO</td>
<td>177</td>
<td>0</td>
<td>43</td>
<td>0.00</td>
</tr>
<tr>
<td>Total for all firms</td>
<td>4205</td>
<td>848</td>
<td>573</td>
<td>1.48</td>
</tr>
</tbody>
</table>
Empirical results – who is attacking whom?

- See Table 8 in the paper
- Henkel, Goldwell and Wella account for the lion share of oppositions filed
- oppositions hit mostly P&G, Unilever and L’Oreal
Value correlates

- Number of designated EPC countries
- Number of claims
- Citations:
  - Number of backward A-cites to patents
  - Number of backward XY-cites to patents
  - Number of backward A-cites to scientific lit.
  - Number of backward XY-cites to scientific lit.
  - Number of forward A-cites
  - Number of forward XY-cites
- PCT application
- Accelerated exam requested
- Non-corporate applicant; university applicant
Empirical results – opposition probability

- Table 9 - descriptive stats on oppositions by firm
- Table 10 - simple probit for opposition probability.
  - opposition likelihood increases as value correlates increase
  - aggressive opponents (Henkel, Wella, Goldwell) have lower rates controlling for value correlates
  - P&G and Unilever face higher rates
- Specific product classes:
  - cosmetics NEC; soaps; deodorants; sun/insect lotions, dental care
  - haircare (+12 percent)
  - perfumes, makeup, nailcare (-8 percent)
Opposition outcomes

- Table 11 – opposition outcomes compared to other technologies
  - Slightly less likely to be rejected, more likely to result in patent revocation

- Table 12 – outcomes by nationality of firm

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Non-German Patentholder</th>
<th>German Patentholder</th>
<th>Non-German Opposer</th>
<th>German Opposer</th>
<th>Henkel is Opposer</th>
<th>All firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opposition rejected</td>
<td>17.9%</td>
<td>38.5%</td>
<td>28.3%</td>
<td>19.2%</td>
<td>12.4%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Patent amended</td>
<td>34.0%</td>
<td>29.5%</td>
<td>32.8%</td>
<td>33.0%</td>
<td>26.4%</td>
<td>21.6%</td>
</tr>
<tr>
<td>Patent revoked</td>
<td>45.7%</td>
<td>32.0%</td>
<td>37.4%</td>
<td>45.8%</td>
<td>58.9%</td>
<td>27.8%</td>
</tr>
<tr>
<td>Other</td>
<td>2.4%</td>
<td>0.0%</td>
<td>1.5%</td>
<td>2.0%</td>
<td>2.3%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>65.5%</td>
</tr>
</tbody>
</table>
Conclusions

- high opposition rate due mostly to actions of a few players in the hair care industry
- more valuable patents are more likely to be attacked (as theory suggests)
- new citation measures do provide additional information
Questions

- Is this legitimate opposition due to asymmetric information or harassment of large firms by established firms that have experience with the use of opposition?
- Is Henkel the Texas Instruments of the hair care industry?
  - We don’t really know, although the positive outcomes for German firms do suggest they are bringing some prior art to bear.
Further research

- model interaction between portfolio of opponent i and new patent
- are Henkel opposition cases taking longer?
- *US data as controls*
- *add firm-level data*