IP Commercialization in Korea - From Research and Development to Commercialization

Submitted by: Korea
IP Commercialization in Korea
- From R&D to Commercialization -

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Reality of Moving R&D to Commercialization in KOREA

- Dramatic Increase of the Importance of Intangible Assets
  - Knowledge, Brand & Patents etc.
  - The percentage of intangible assets in Enterprises:
    - 3M: 70%, SAMSUNG ELECTRONICS: 41%

- Deepening Technology Protectionism in Advanced Countries
  - Steady increase of technology royalty

- Unsatisfactory Results of Technology Transfer & Commercialization
  - Steady increase in R&D investment: 17 Billion USD (8th)
  - Commercialization Rate of Domestic Patents: 38.9%
  - Rate of Technology Transfer of University & Research Institute:
    - 24.2% (2007) (US: 35.9%, Europe: 46.7%)
Difficulties in Commercializing Patent

- Value of Patents
  - Economic potential
  - Realization of the economic value through commercialization

- Commercialization of Patents
  - Utilizing its own patents
  - Buying or Licensing others' patents

- Obstacles in Commercialization
  - Shortage of funds for commercialization (34.5%)
  - Marketing & Sales (19%)
  - Counterfeit (12.5%)
  - Others (19.4%)

Importance of University & Research Institutes in IP Fields
### Competence of Universities & Research

✓ Cost spent on R&D & Human Resource with Doctoral Degree (2006)

<table>
<thead>
<tr>
<th></th>
<th>University</th>
<th>Research Institute</th>
<th>Enterprise</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R&amp;D Cost (percentage)</strong></td>
<td>2,722B KRW (9.9%)</td>
<td>3,497B KRW (12.8%)</td>
<td>21,127B KRW (77.3%)</td>
<td>27,346B KRW (100%)</td>
</tr>
<tr>
<td><strong>Human Resource with Doctoral Degree (percentage)</strong></td>
<td>40,256 (67.1%)</td>
<td>8,083 (13.5%)</td>
<td>11,674 (19.4%)</td>
<td>60,013 (100%)</td>
</tr>
</tbody>
</table>

### Patent Application from Universities & Research Institutes


<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University</strong></td>
<td>957 (1.3%)</td>
<td>1,692 (1.9%)</td>
<td>1,962 (1.9%)</td>
<td>2,905 (2.4%)</td>
</tr>
<tr>
<td><strong>Research Institute</strong></td>
<td>2,656 (3.6%)</td>
<td>3,185 (3.6%)</td>
<td>3,479 (3.4%)</td>
<td>4,453 (3.7%)</td>
</tr>
<tr>
<td><strong>Enterprise</strong></td>
<td>51,743 (70.5%)</td>
<td>63,917 (71.9%)</td>
<td>76,970 (74.4%)</td>
<td>90,671 (74.4%)</td>
</tr>
</tbody>
</table>
Technology Transfer of Universities & Research Institutes

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>Accumulation until 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New Tech'</td>
<td>Tech' Transfer</td>
</tr>
<tr>
<td>Research Institute</td>
<td>4,395</td>
<td>1,358</td>
</tr>
<tr>
<td>University</td>
<td>4,156</td>
<td>715</td>
</tr>
<tr>
<td>Total</td>
<td>8,551</td>
<td>2,073</td>
</tr>
<tr>
<td></td>
<td>Retaining Tech' Transfer</td>
<td>Transfer Rate</td>
</tr>
<tr>
<td>Research Institute</td>
<td>25,987</td>
<td>6,825</td>
</tr>
<tr>
<td>University</td>
<td>16,051</td>
<td>2,189</td>
</tr>
<tr>
<td>Total</td>
<td>42,038</td>
<td>9,014</td>
</tr>
</tbody>
</table>

- **R&D Productivity**
  - Income from Technology Transfer / Spent Cost for R&D
  - 0.3% (Univ') 2.3% (Research Inst')
  - 4.8% (US Univ') 8.2% (US Research Inst')

From R&D to IPRs
**Integrated Patent Information Consulting**

- Jointly Operated with Regional Government
  - Matching Fund = National Gov’ (50) + Regional Gov’ (50)
  - Responsibility of regional Gov’ as well as Effectiveness

- Preventing Unnecessary Overlapping Investment in R&D
  - Diagnosing the interference with prior patents
  - Enhancing the efficiency of R&D

- Providing researched & analyzed patent information before R&D

- Supporting technology transfer & commercialization after R&D

- Mainly for SME, Venture enterprise, and Region-specialized industry

**Subsidizing International IP Application**

- International Application for Patent, Utility Model and Design
  - Application & Registration Fees

- 3,000~6,000 USD per Application

- Enlarging the Scope from Individual & SME to University & Research Institute since 1981
  - Individuals & SMEs: Within 3 applications per applicant
  - University & Research Institute: Within 10 applications per applicant

- In 2006, 1.5 M USD for 618 applications
Facilitation of IP Creation at Universities & Research Institutes

- IP Management Model for Universities & Research Institutes
  - Diagnosing & evaluating their management capabilities
  - Distributed Universities & Research Institutes
  - 65 diagnostic indexes in three fields

- Model of Standard Contracts for Cooperation b/w Industry & Academia
  - Guidelines for contracts involving mutual research
  - Research on how indexed-patent can be used in assessing the accomplishments of professors & researchers at 40 universities & research institutes

- Standard Model of Compensation for Employee Inventions at Universities
  - Reflecting the major details of the revised “Invention Promotion Act”
  - Presentation on employee inventions

Facilitation of IP Creation at Universities & Research Institutes (cont’d)

- Supporting Universities & Research Institutes in the Acquisition of Core Patents
  - Facilitating the production of patent map in specialized technical fields for the particular organization
  - Expanding to 20 research labs including Seoul Nat’l Univ’ & KAIST

- Educational Courses on Patent Information
  - 4 Graduate courses : KAIST, Seoul Nat’l Univ’ etc.
  - 37 Undergraduate courses : Korea Univ’, Yonsei Univ’ etc.

- National R&D Forum on IP
  - Searching for outstanding IP models at univ’ & research institutes
  - Sharing of IP management experience
From IPRs to Commercialization

- Comprising 19 Institutes (Public 9, Private 9)

**Patented Technology Commercialization Committee**

- Supporting Institutes (Finance supports)
- Applicant of Utilizing Patent Technology
- Monitoring
- Post-Management
- Management Institute (Korea Invention Promotion Association)
- Support-request
- Report
- Application
- Management-request
**Appraisal of Patented Technology**

- Subsidizing Manufacture of Trial Product of Good Invention & Design
  - Possibility of commercialization & Technological Excellence
  - Within 50,000 USD per Invention per person
  - 165 Inventions & 3.2 M USD (2006)

- Subsidizing Appraisal Fees of Patented Technology
  - Except private enterprises
  - Within 30,000 USD & 80% of the fee
  - Application ➔ Preliminary Decision ➔ Evaluation ➔ Final Decision ➔ Payment
  - 1,483 cases out of 2,283 applications & 5.6 M USD (2006)

**Transaction of Patented Technology**

- Patented Technology Mart
  - Manufacturing moving pictures simulating the feature of the technology & Writing objective estimate of the technology
  - Consulting on transaction and licensing

- IP-MART
  - Online Patented Technology Mart
  - Direct transaction b/w suppliers & consumers
  - Information DB on Technology Transaction : 33,000 cases

- Early Buyer Recommendation Scheme
  - Recommending Gov’ agencies to buy good patented products

- Korea Invention & Patent Festival

- Exhibition for the Hundred Most Outstanding Patented Products
Lessons from Best Practices of Shifting from R&D to Commercialization

- Four-year Research & Only one utility model registration
- Brand Construction Utilizing Invention Exhibition
  - Geneva International Invention Exhibition
  - Korea Patent Technology Exhibition
  - International Invention Exhibition (Germany, Switzerland and US)
  - Eight consecutive gold prizes in environment & medical division
- Unique Commercialization Strategy
  - Eliminating unnecessary margin
  - Telecommunication sales
- Effective Advertising & Unique Strategy
**Transaction of Patented Technology**

**Institute W (water saving appliances)**
- Active IP Acquisition
  - 56 Patents (1 International), 30 Designs, 25 Trademarks (6 International)
- Catching Government Policy on time
  - Policy of obligation of water saving appliances
  - Getting funds from government
  - Supplying products to government agencies (government procurement products)
- Technology Power & Timely Understanding of Gov’ Policy

**Concentration on Single Product**

**Institute H (closable food container)**
- Considering the characteristics of Korean Foods
  - Strong flavor & much water
- Domestic & International Patents
  - R&D for 3 years
  - Patent Application designating 45 countries
- Understanding Trends of Technology Utilizing Patent Map
- Getting Recognition on Quality in diverse ways
- Active Participation in Exhibition & Opening various events
  - Giving housewives the chances of using in person
Some Lessons from the Best Practices

- Notice the Importance of IPR
  - Quantity of IPR does not guarantee good commercialization.
- Utilize a variety of Advertising Channel
- Understand and Utilize Government Policy
- Develop Niche Product
  - Need not to be something great
- Upgrade patented goods consistently
- Diversify the Marketing Channel
- Grasp customers’ needs

Recommended Strategy for Successful IP Policy
In the Beginning Stage

- Incorporate Good Foreign IP System & Transform into Its Domestic Version
  - e.g. First Patent Law (1946), Chemical Compound Patent (1987)
- Enhance IP Awareness in Public
  - e.g. Invention Protection Act (1958), IIPTI (1987)
- Collect lots of Foreign Patent Information
  - Utilizing the information as a basis of IP creation and commercialization

In the Intermediate Stage

- Strengthen IP Automation Infrastructure
  - e.g. Internet-based e-Filing System (1999)
- Encourage IP Commercialization
  - e.g. Patented Technology Commercialization Committee, Subsidizing manufacture & appraisal of patented technology, Supporting transaction of patented technology
- Design around Dominant Foreign Patents
  - Almost all the inventions originate from the previous inventions.
In the Advanced Stage

- Encourage International Applications
  - Coping with international patent disputes

- Enhance IP Management
  - e.g. Patent Map (2004), Regional IP Consulting Center (2004)

- Select & Focus its Own Competent Industrial fields with IP
  - e.g. IT Industry (2000s)

Thank You!

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