Use of the PCT System as an Engine for Technology Transfer
Role of Patents: Catalyst for Innovation?


The “tragedy of the commons” metaphor helps explain why people overuse shared resources. However, the recent proliferation of intellectual property rights in biomedical research suggests a different tragedy, an “anticommons” in which people underuse scarce resources because too many owners can block each other. Privatization of biomedical research must be more carefully deployed to sustain both upstream research and downstream product development. Otherwise, more intellectual property rights may lead paradoxically to fewer useful products for improving human health.


Summary. — Contested is whether patent laws promote indigenous technology invention and innovation in developing countries. Brazil reformed its patent laws in 1996 to permit pharmaceutical product patents. Study of five post-patent law reform bio-medical technology invention and innovation projects in the state of Sao Paulo supports the propositions that patents provide incentives to Brazilian bio-medical technology entrepreneurs to make risky investments into innovation and that patents facilitate technology markets among public–private technology innovation networks, both Brazilian collaborations and North–South collaborations. Brazil enacted a technology law in 2005 that encourages public–private technology innovation through patent incentives and patent-facilitated technology markets.
What is Technology Transfer?

Transfer of technology refers broadly to a series of processes enabling and facilitating flows of *skills*, *knowledge*, *ideas*, *know-how* and *technology* among different stakeholders such as university and research institutions, international organizations, IGOs, NGOs, private sector entities and individuals, *as well as* the international transfer of technology between countries.

Transfer of technology, which is often considered to include the absorption of new technologies, is sometimes also considered to involve the transfer of *concrete knowledge* for the manufacture of products, the application of a process or for the rendering of a service, granting the improvement of domestic as well as the international competitiveness in the economic market.

National Transfer: From Lab to Market

- R&D
- Patent application
- Licensing
- Start-up/Spin-off
- Commercialization

Technology Transfer:
- Creation
- Protection
- Exploitation
IP Creation and Economic Growth

University and R&D Research → IP (Invention) as a result of Research

Economic Growth

Further Investment in R&D

IP (Invention) as a result of Research → Invention Disclosure & Decision of protection

Invention Disclosure & Decision of protection → Patent Filing

Patent Grant → Marketing

Marketing → Licensing-out

Licensing-out → Commercialization

Commercialization → Start-up/Spin-off

Start-up/Spin-off → Profit Generation

Profit Generation → Further Investment in R&D
Technology Transfer Collaboration
Infrastructure

Universities and R&D institutions
- IP Policy
- R&D Policy
- TTO

Government
- Economic development (SME policies, market creation)
- National IP infrastructure (laws and regulations)
- Enforcement
- IP strategy
- R&D enhancement
- IP education
- Research funds

Industry
- Research Funds
- Research Collaborations
- Licensing
- Marketing
- Commercialization

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Key Challenges for Technology Transfer

- Lack of IP management infrastructure
- Lack of strategic research planning
- Gap between basic research and market needs
- Lack of funds for IP protection
- Lack of IP knowledge
- Lack of expertise to manage TT and commercialization process
- Lack of entrepreneurial culture among researchers
- Lack of business skills
- Lack of marketing skills
- Lack of support (Government, senior managers) and incentive
- Culture gap (University vs. Industry)
Startup Financing Cycle

Reference: Kompere.
The seed fund is a catalyst for moving technological innovation from the lab to the marketplace, and for helping dreamers become entrepreneurs. The funding is up to $200,000 over 24 months.

Reference: King Abdullah University of Science and Technology (KAUST) Seed Fund
Technology Transfer – U.S. Activity in 2010

- 20,642 Invention Disclosures

- Patent Filings and Patent/Legal Expenditures
  - 18,712 total U.S. patent applications
  - 12,281 new U.S. patent applications
  - 1,116 non-U.S. patent applications
  - $323.2 million external legal fees paid
  - $155.7 million legal fees reimbursed

- 4,469 Issued U.S. Patents

Source: 2010 AUTM Survey
Technology Transfer — Top U.S. Universities in TT-related Income (2010)

1. Northwestern University, $180 million
2. New York University, $178 million
3. Columbia University, $147 million
4. University of California System, $104 million
5. Wake Forest University, $86 million
6. University of Minnesota, $84 million
7. Massachusetts Institute of Technology, $69 million
8. University of Washington/Washington Research Foundation, $69 million
9. Stanford University, $65 million
10. University of Wisconsin-Madison/Wisconsin Alumni Research Foundation, $54 million
11. California Institute Of Technology, $52 million
12. University of Rochester, $42 million
13. University of Massachusetts, $40 million
14. University of Michigan, $40 million
15. University of Texas System, $38 million
16. University of Utah, $38 million
17. University of Florida, $29 million
18. University of Iowa Research Foundation, $27 million
19. Duke University, $26 million
20. University of South Florida, $17 million

Source: 2010 AUTM Survey
Requirements for an Efficient Innovation and Technology Transfer System
Where to Get Help
PCT information available on the Internet (1)

- PCT Treaty and Regulations (www.wipo.int/pct/en/texts/)
- PCT Administrative Instructions (www.wipo.int/pct/en/texts/)
- PCT Newsletter (monthly) (www.wipo.int/pct/en/newslett/)
- PCT Brief (http://www.wipo.int/pct/en/brief/)
- PCT Legal Text Index, providing references to PCT Articles, Rules, Administrative Instructions, Forms and various PCT Guidelines (www.wipo.int/pct/en/texts/pdf/legal_index.pdf)
PCT information available on the Internet (2)

- WIPO Standards (www.wipo.int/standards/en/part_03_standards.html)
- Agreements between International Bureau of WIPO and International Searching and/or Preliminary Examining Authorities (www.wipo.int/pct/en/access/isa_ipea_agreements.html)
PCT Applicant’s Guide (1)

- Free weekly e-mail updating service detailing updated information
- Contents:
  - International phase
    - instructions concerning the preparation, filing and processing of international applications
    - blank forms (request, demand, power of attorney, etc.)
    - “Annexes” setting out information relevant to each Contracting State and regional or international Organization and each Office and Authority
PCT Applicant’s Guide (2)

- National phase
  - information on all acts that must or may be performed before the DO/EOs
  - time limits
  - fees
  - blank national forms
PCT training options

■ “Learn the PCT” Video Series
  (http://www.wipo.int/pct/en/training/index.html)
  ▶ A series of 29 short videos designed to provide a basic introduction to important aspects and issues in the PCT system (in English)

■ PCT Distance Learning Course available in the 10 publication languages

■ PCT Webinars
  ▶ Free webinars on PCT topics for companies/law firms on request

■ More information on the PCT resources website: www.wipo.int/pct
Where to get help at WIPO on PCT-related questions (1)

PCT Infoline
- Telephone: +41 22 338 83 38
- Fax: +41 22 338 83 39
- E-mail: pct.infoline@wipo.int

PCT Processing Service
- Gijsbertus Beijer: +41 22 338 94 79
- Fax: +41 22 338 82 70

Also for questions relating to RO/IB
- Gijsbertus Beijer: +41 22 338 92 22
- Fax: +41 22 910 06 10

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PCT  Internet Site
Internet address  www.wipo.int/pct/en/
PCT Information Service

The PCT Information Service answers general inquiries about the filing of international applications and the procedure to be followed during the international phase of the PCT. For an overview of the PCT system please see *Protecting your Inventions Abroad: Frequently Asked Questions about the Patent Cooperation Treaty (PCT)*.

Please note that correspondence relating to specific international applications should be addressed to the PCT Operations Division, preferably uploaded through ePCT: (this may be done through ePCT public services, which does not require you to obtain a digital certificate) or by facsimile: (+41-22) 338 82 70 or the specific fax number indicated on the forms issued by the International Bureau (IB), or you can contact the "authorized officer" directly.

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- E-mail: pct.infoline@wipo.int

Telephone opening hours are from 9.00 a.m. to 6.00 p.m. Central European time (from 3.00 a.m. to 12.00 p.m. (noon) US Eastern time zone).
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If you wish to ask any questions relating to a specific international patent application, you can contact the "authorized officer" directly. To know who is the authorized officer in charge of your PCT application, type your IA number in the box below; the name and contact details of the staff in charge will appear.

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**US2009051003**

**Team**

PT09

**Coordinator**

Simin Baharlou

**Phone**

+41 22 338 74 09

**Fax**

+41 22 338 71 30

**Email**

pt09.pct@wipo.int
PCT case law database

- Text-searchable PCT case law database available at: www.wipo.int/pctcaselawdb/en

- Contents:
  - decisions from national courts
  - decisions from regional administrative bodies
  - abstracts and legal references added by IB

- Any comments or submissions for addition can be sent to the IB at: pct.legal@wipo.int
WIPO – PCT LEGAL DIVISION (1)

Director
Matthew Bryan +41 22 338 96 01
Fax +41 22 910 00 30
E-mail pct.legal@wipo.int

PCT Legal Affairs
Matthias Reischle +41 22 338 96 27
Christine Bonvallet +41 22 338 70 67
Masanori Tachibana +41 22 338 99 16
Zhilong Yu +41 22 338 71 79
Ingrid Aulich +41 22 338 95 77
Fabienne Gateau +41 22 338 95 63
Margret Fourné-Godbersen +41 22 338 93 28
# WIPO – PCT LEGAL DIVISION (2)

<table>
<thead>
<tr>
<th>Section</th>
<th>Contact Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCT Information Services Section</td>
<td>Eva Schumm</td>
<td>+41 22 338 83 38</td>
<td><a href="mailto:pct.infoline@wipo.int">pct.infoline@wipo.int</a></td>
</tr>
<tr>
<td></td>
<td>Isabel Happe</td>
<td>+41 22 338 83 38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anne Gallois-Montbrun</td>
<td>+41 22 338 83 38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fax</td>
<td>+41 22 338 83 39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-mail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCT Outreach and User Relations Section</td>
<td>Quan-Ling Sim</td>
<td>+41 22 338 90 56</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silke Weiss</td>
<td>+41 22 338 88 44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beatriz Largo</td>
<td>+41 22 338 95 72</td>
<td></td>
</tr>
<tr>
<td>PCT Legal Publication Section</td>
<td>David Barmes</td>
<td>+41 22 338 93 61</td>
<td></td>
</tr>
<tr>
<td>PCT Knowledge Management Section</td>
<td>Rosina Bisi-Kurkdjian</td>
<td>+41 22 338 95 66</td>
<td></td>
</tr>
</tbody>
</table>
# WIPO – PCT INTERNATIONAL COOPERATION DIVISION

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director</td>
<td>Kenichiro Natsume</td>
<td>+41 22 338 90 48</td>
</tr>
<tr>
<td>Senior Counsellor</td>
<td>Ali Jazairy</td>
<td>+41 22 338 8173</td>
</tr>
<tr>
<td>Offices Services Section</td>
<td>Rolando Hernandez Vigaud</td>
<td>+41 22 338 86 68</td>
</tr>
<tr>
<td></td>
<td>‘Nyalleng Pii</td>
<td>+41 22 338 81 48</td>
</tr>
<tr>
<td></td>
<td>Patrick Genin</td>
<td>+41 22 338 86 67</td>
</tr>
<tr>
<td></td>
<td>Mikhail Gavrikov</td>
<td>+41 22 338 70 22</td>
</tr>
<tr>
<td></td>
<td>Anjali Aeri</td>
<td>+41 22 338 70 66</td>
</tr>
<tr>
<td>Technical Cooperation Section</td>
<td>Peter Waring</td>
<td>+41 22 338 85 21</td>
</tr>
<tr>
<td></td>
<td>Carlos Roy</td>
<td>+41 22 338 95 61</td>
</tr>
</tbody>
</table>
WIPO – PCT BUSINESS DEVELOPMENT DIVISION

Director    Claus Matthes    +41 22 338 98 09
Fax          +41 22 338 71 50

Michael Richardson    +41 22 338 91 71
Ann Bardini    +41 22 338 91 17
Allal Aloui    +41 22 338 74 24
Thomas Marlow    +41 22 338 74 23