

Topic 2(a)

The Patent System and Research

Philip Thomas
Senior Director-Advisor (PCT and Patents)
WIPO

WIPO in Cooperation with the Government of Kenya
**Regional Forum on the Role of Patents and
the PCT in Research in Developing Countries**
March 30 to April 1, 2009, Nairobi

Patents in a research environment

- Why patents matter
- Ways of benefiting from patents
- General features of the patent system
- Patent or publish?
- Patents nationally and internationally

- The Patent Cooperation Treaty (PCT)
 - the main route for obtaining patents internationally

Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

2

The patent system

- Objective
 - promote technological and economic development by encouraging innovation
- Mechanism
 - patent rights for inventions
- Balance
 - between patentees' rights (protected inventions) and the public interest (public domain)
- Relationship to other national policy measures
 - public health (e.g. AIDS drugs), use of genetic resources, traditional knowledge, environment protection

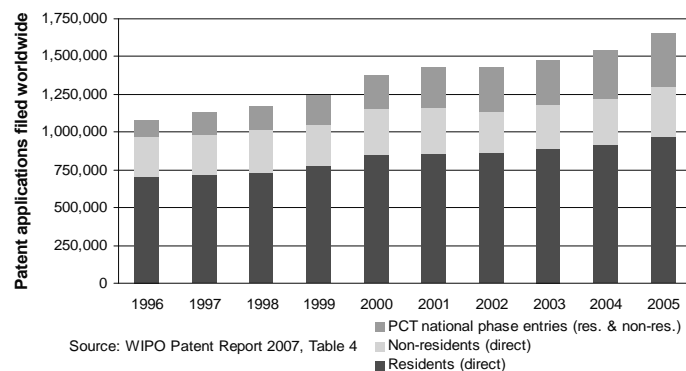
Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

3

Use of the patent system is growing

Average annual increase \approx 4.9%
Annual total applications now >1,600,000
Represents annual total inventions >1,000,000



Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

4

Patenting locally

- Filings by residents in 2005 compared to 1995:
 - world average: 45% increase
 - Republic of Korea: 101% increase
 - China: 819% increase

Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

5

Patenting abroad

- Proportion of local applications that are followed by a foreign application (figures for years 2000 to 2005)
 - world average 29%
 - China 7%
 - India 62%
 - South Africa 74%
 - Sweden 92%
- In 2006, PCT national phase entries accounted for 48% of world-wide non-resident filings

Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

6

General economic effects

- Are patents a pre-condition for innovation? – no
- Can patents encourage innovation? – yes

- Do economists agree on the economic effects? – no

- Do economically successful countries have or develop strong patent systems? – yes

Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

7

A strategic tool for enterprises

- Can patents aid commercial success? – yes
- Do many innovative enterprises use patents? – yes
- Do (potential) investors like patents? – yes

- Do patents guarantee profits? – no

Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

8

Patents and money

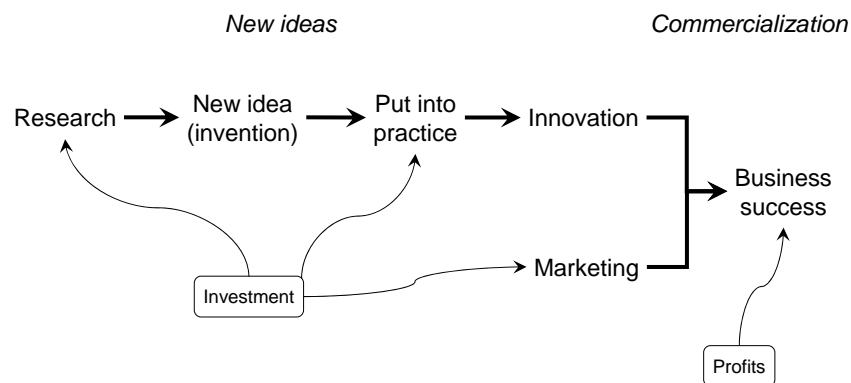
- Most research institutions don't seek "profits" as such
 - but partner enterprises do
- Possibility of financial returns
 - recoup past investment
 - fund future research
 - attract potential partners
- Patents are property rights
 - vehicle for negotiation
 - who wants to pay for using an unpatented idea?

Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

9

From research to profits

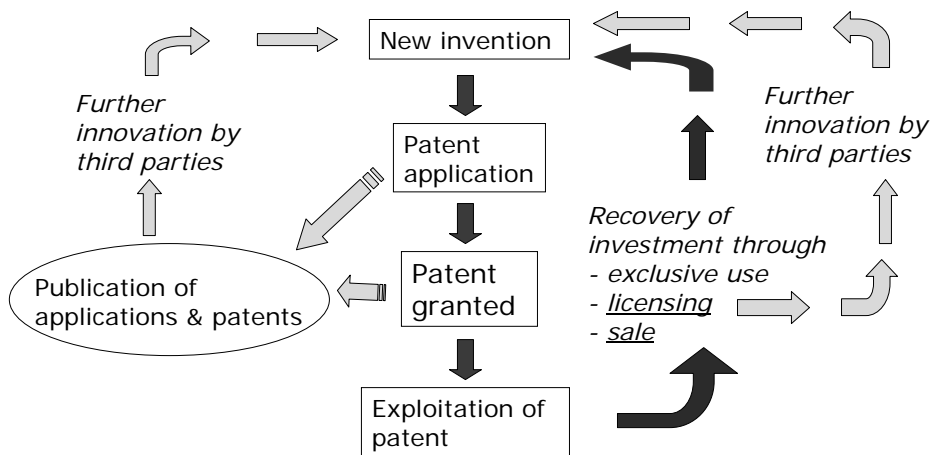


Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

10

Innovation and commercialization



11

Main features of patent rights

- *Property rights in inventions*
 - may be sold or licensed
- Right to *stop others* from making or selling the invention
- Only available for *new* inventions in a field of *technology*
 - but small improvements can be enough
- Geographically limited under *national* patent laws
 - but there are *regional* and *international* treaties
- Must file a patent *application* to obtain rights
 - fully describing invention
 - description is published
- Limited duration, *20 years* from filing date
- Annual renewal or maintenance fees (increasing with time)

Balance: patentees ~ third parties

- Conditions of patentability must be met
- Publication of applications
- Effective grant, enforcement and invalidation procedures
 - legal certainty for all affected

Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

13

Conditions for grant of a (valid) patent

- Patent application must be filed
- Invention must be new (“novel”) and involve an inventive step (“non-obvious”)
- Invention must be “industrially applicable”
- Application must fully describe the invention (in the description and drawings), sufficiently to enable performance of the invention
- Application must define the patent rights sought, in patent “claims” that are fairly based on what is described

Regional Forum, Nairobi
March 30 to April 1, 2009

Philip Thomas
WIPO

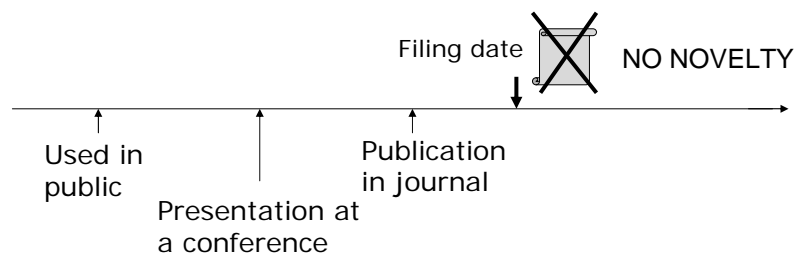
14

Patentability

- Great consistency, if not uniformity, in patentability criteria in all countries
- Some, but not all, countries assess compliance by pre-grant search and examination
- Granted patents may be revoked for non-compliance
 - i.e. grant of a patent is not conclusive, validity is not guaranteed

Novelty

- Novelty: The invention does not form part of the prior art
- “Prior art” = any knowledge made available to the public before the filing date of the relevant patent application



Inventive step (non-obviousness)

- Having regard to the prior art, the invention must not be obvious to a person having ordinary skill in the art on the filing date
- Examples:
 - obvious combination of features
 - substitution of a material for analogous use
 - routine experiment
 - mere selection of optimal material from known materials

Patent claims example (part 1)

From: International Application No. PCT/IB2003/005958

Applicants: Specialised Protein Products (Proprietary) Limited,
Potchefstroom, and (inventor) Errol Murray Collins, Cape Town

1. A method of producing a soya bean product, the method including the step of exposing soya beans to an acidic aqueous solution.
2. A method as claimed in Claim 1, in which the acidic aqueous solution has a pH of between about 2.0 and 5.5.
3. A method as claimed in Claim 1 or Claim 2, in which the soya beans are whole beans.
4. A method as claimed in any one of the preceding claims, which includes the prior step of dissolving an organic acid in water to produce the aqueous acidic solution.
5. A method as claimed in Claim 4, in which the organic acid is citric acid.

Patent claims example (part 2)

6. A method as claimed in Claim 4 or Claim 5, which includes the step of dissolving a sugar in the water.
7. A method as claimed in Claim 6, which includes the prior step of combining the organic acid and the sugar to form an additive and dissolving the additive in the water.
[...]
29. A method as claimed in Claim 28, which includes the prior step of combining the organic acid and the sugar to form an additive and dissolving the additive in the water.
[...]
44. A soya bean product produced in accordance with a method as claimed in any one of the preceding claims.
45. An additive comprising an organic acid and a sugar for use in a method as claimed in Claim 7 or Claim 29.

Enforcement and invalidation

- It is generally up to the patent owner to enforce a patent against infringers
 - in court proceedings or negotiations
- It is generally up to a competitor (e.g. an alleged infringer) to show that a granted patent is invalid
 - in court proceedings or negotiations
- Where a patented invention has been licensed, enforcement and defence against invalidation will generally be matters for the licensee

(Patent and) publish or perish

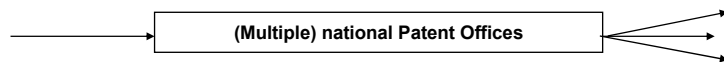
- Patenting is not inconsistent with publishing
 - the patent system requires disclosure of inventions
 - all patent applications are published
- Publication of an invention destroys patentability of a later filed patent application
 - the invention would then not be “novel”
 - moral: ask the question “to file or not to file?” before publishing
- Once a patent application has been filed, the invention can safely be published in scientific or technical literature
 - with good advice, delay in publication can be minimal

Money, decisions and advice

- Patent laws and procedures are not straightforward
- Obtaining patents is not cheap (several thousand dollars per country)
- The rewards depend on the market, but may be huge
 - the more countries covered, the greater the potential returns
- Disputes are as expensive as any commercial dispute
- Good decisions rely on sound and timely advice
 - e.g. by university technology units
- Strong patents depend on well-drafted patent applications
 - difficult without a good patent attorney

Filing patent applications abroad

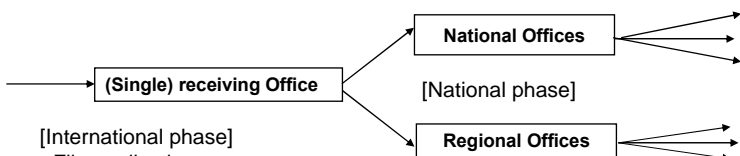
- National patent systems



- Regional patent system (EPO, EAPO, OAPI, ARIPO, GCC)



- Patent Cooperation Treaty (PCT) system



[International phase]
 - File application
 - International publication
 - International search
 - International preliminary examination

Patents

23

Thank you

Philip Thomas
 Senior Director-Advisor (PCT and Patents)
 WIPO

Tel: + 41 22 338 9551
 Fax: + 41 22 338 8780
 Email: philip.thomas@wipo.int

Regional Forum, Nairobi
 March 30 to April 1, 2009

Philip Thomas
 WIPO

24