IP strategy

IP creation strategies to generate value

in cooperation with I3PM

Gordan Hyland
President of I3PM

15.03.2018
Your speaker – Gordan Hyland

Background:
- MSc MA MBA LLM: microelectronics, maths, management & finance, IP law
- CFA CAIA FRM: financial & alternative investments analyst, risk management
- Lived/worked in Europe, Asia, America
- 20 years in blue chips internationally: Philips & Sony
- 3 years entrepreneur: IPX
- Since 2013 consulting: Shibumi

International Institute for IP Management president¹

CAIA Ireland Chapter co-founder and executive²

Disclaimer
Opinions expressed in this presentation are those of the speaker and not necessarily those of the European Patent Office.
Why have patents?

- Jurisprudence arguments centre on the spectrum bracketed by the extremities:¹
  - "natural right", i.e. justice
  - "promotion of the public interest", i.e. pragmatic grounds

- The "natural-law" thesis

- The "reward-by-monopoly" thesis

- The "monopoly-profit-incentive" thesis

- The "exchange-for-secrets" thesis

What are patents worth?

Formality vs. substantive examination:
- Utility models
- Not all national patents are examined
- Business process patents (US only phenomenon?)

Quality of patents 1, 2, 3, 4
- What is quality? (EPO post grant stats.)
- Different systems, different emphasis (US vs EPO)
- Quality before quantity? (pro.s & con.s)

1. Kimberly Moore, *Worthless patents*
2. Robert Merges, *As many as six impossible patents before breakfast*
3. Mark Lemley & Carl Shapiro, *Probabilistic patents*
4. Mark Lemley, *Rational ignorance at the patent office*
No patents for the sake of patents

Porfovaluation spectrum: 1
• 10% valuable (~90% of portfolio’s total value)
• 25% pay for themselves
• 65% do not directly result in revenues

Pharma industry analog:
• Blockbuster vs. commercial failure pay-off curve is very similar

Management vs. transaction mentality

Some key patent laws

- Venice, 1474 – first patent law: 10-yr term
- England – 1624 Statute of Monopolies: 1 14-yr term for inventor/importer, no examination, sworn affidavit for novelty, exact public specification not required until early C18th (secrecy vs clarity re infringement rulings)
- France – 1699 statute – Académie des Sciences examined applications, issuing reports 1735
- Germany – 1877 Patent Act defined the age of corporate research labs run by managers
- USA – 1952 Patent Act was written mostly for the chemical-pharmaceutical industry; globally copied
- USA – 1983 Orphan Drug Act gave 7 yrs' exclusivity resulting in 12x increase p.a. in new orphan drugs

1. Christie MacLeod, Inventing the Industrial Revolution
2. William Kingston, Beyond Intellectual Property
SME patent characteristics

- EPO-EUIPO SME study: 5
  - Type of IP protection: 36% patents.
  - Reason for registering: 79% prevent copying.
  - Suffered infringement: 24-39%.

- Study of US patents granted 1994-2003: 1, 4
  - 25% OECD originated US patents granted are SE (47% small firms, 45% individual, 9% non-profit)
  - 36% of US based applicants in this category
  - 13% of non-US based applicants in this category
  - Taiwan highest rate-of-decay, >50% after 4 yrs, >75% after 8 yrs

- Average patent life: Germany-UK 8 yrs; France 6yrs ²
- De facto patent economic life is 4 yrs (2.8-5.6yrs) ³

1. William Kingston & Kevin Scally, Patents and the Measurement of International Competitiveness
2. William Kingston, Beyond Intellectual Property
3. Erich Kaufer, The Economics of the Patent System
4. Donal O'Connell, Inside the Patent Factory
5. EUIPO, SME Scoreboard 2016
The essence of patents

• What is the gist of them?
• What is protected & why?

β What are they good at?
• No freeriding

β Caveats?
• How to avoid the anticommons
Industry structure and design-around

β Design around times: ¹, ²
  • 3-4 yrs’ imitation time except in pharma industry
  • R&D results can be kept secret 6-15 months

β Cumulative vs. discrete industries: ³
  • Pharmaceutical industry tends toward discrete
  • Electronics industry tends toward cumulative
  • The spectrum is what’s important

β The Tragedy of the Anti-Commons: ⁴, ⁵
  • A technology domain becomes a no-man’s-land due to overlapping claims of different patents from different inventors

¹. Mansfield, Patents and Innovation
². Mansfield, Schwartz & Wagner, Imitation Costs and Patents
³. Levin, Klevorick, Nelson, Winter, Gilbert & Griliches, Appropriating the Returns from Industrial Research and Development
⁴. Michael Heller, The tragedy of the anti-commons
⁵. Michael Heller & Rebecca Eisenberg, Can patents deter innovation
Bridging the gap

With the advantages and challenge of patents specifically, and IP in general, how does one create useful IPR?

Codified and uncodified?
Value Extraction Points (VEPs)

Participatory sensing alert system.

Source: Peter Bittner
Invention overview

- Fixed and variable infrastructure

- Fixed sensors connected (wired, wireless) to the City Emergency Management Centre

- Augment with mobile-phone (GPS) and other monitoring (radiation, air quality, etc.) devices via 4G network

- How to merge public & private networks, and data?

- How to fund? (pay for the data, be paid to issue warnings)

- Maintain individuals' privacy

Source: Peter Bittner
How to protect?

In Europe cannot protect business processes:
• IBM’s patent for airplane restroom availability.  

Top-down:
• Macrosystem (Big Brother, person of interest).  
• The interfaces (software, hardware).
• The monitoring devices (should be cool to encourage use).

Bottom-up:
• Sensor design (beyond what’s on a mobile phone).
• Security protocol (prevent hacking of personal information e.g. browser history, secure payments).
IP mechanisms

Trade marks:
• Nike: customers buy Nikes rather than shoes

Copyright:
• Interface protocol, and cool apps: software

Designs:
• Cool designs: watches are jewellery

Patents:
• Internal hardware: radiation / smoke detectors

Secrets:
• Privacy: RSA encryption protocol, etc.
Other value extraction points (examples)

Pharma industry:
- Patents: evergreening techniques vs generics
- Trade marks: extend commercial life

Android:
- Trade mark: permission to use conditional
- Patents: Microsoft

Intel:
- Patents: a lot
- Copyright: microcode
- Trade marks: Intel Inside campaign

Wintel: PC monopoly between Microsoft & Intel
- Ecosystem: combination?
Individual patents nice, portfolios better

Moving from individual star patents (identified via VEPs) to teams (portfolios).

Patent team / portfolio management:
- Static (playbooks).
- Dynamic (pruning).
Patent portfolio strategies – 1

- Single patent -> multiple: continuations, divisionals
  - Silver bullets/scarecrow.

- Tailgating:
  - Dynamic
  - Static

- Blanket\(^2, 3, 4\)

2. Reitzig, *Strategic Management of Intellectual Property*
Patent portfolio strategies – 2

- Perimeters: Encirclement/belt/surround/net, Picket/laager
- Stacking
- Fence/thicket
- Net/minefield:
  - Offence
  - Defence

References:
1. Knight, Patent Strategy
2. Reitzig, Strategic Management of Intellectual Property
Second division → premier league

Moving from good patent portfolios to superior-performing patent portfolios

How to train the team and make it more valuable by strategically:
• Focusing
• Grooming
• Cultivating
• Harvesting
How to make a good IP portfolio

Usual portfolio:
- Lognormal. ¹

Challenges: ²
- Generate the right IP assets for the firm to support a sustainable profitable business
- What incentive structures work?
- How to manage the process, and implications on the organisation

² Donal O’Connell, *Inside the Patent Factory*
Basic factors to consider

IP value
- intrinsic
- complements
- appropriation engine

Technology field: ¹
- IP contribution potential:
  - Innovation potential (S-curve, new or mature)
  - Skills within the organisation
  - Resources within the organisation
  - Funding of projects
- Strategic relevance:
  - Technology attractiveness
  - Potential market size
  - Competitive intensity
  - Existence of standards

---

1. Alexander Wurzer, CEIPI
   Univ. of Strasbourg
SIPAC (strategic IP asset creation) – 1

Technology field

- Risk
- Contribution
- Indefinite
- Defensive

IP contribution potential

- SIPAC (strategic IP asset creation)

SIPAC (strategic IP asset creation) – 2

β Contribution:¹
- Focus efforts here: high-quality IP that's relevant

β Defensive:
- High-quality IP but less relevant
- IP licensing opportunity to non-competing products
- Defensive publishing prevents others creating IP

β Risk:
- Increase firm's creation ability (organisation impact)
- Buy in/license IP

β Indefinite:
- Mature stage: maintenance, no more IP expected
- Early stage: could be new breakthrough technology, nurture as the wild card

1. Peter Bittner, A Value Based IP Management Approach, 2010
Monitor, control and feedback

- Monitor by dashboard
- Control by alignment of interests amongst stakeholders\(^1, 2\)
- Feedback by adjusting the organisation

2. Donal O’Connell, *Inside the Patent Factory*
Summary

IP strategy:
- Inputs:
  - Prior art
  - Competitive landscape
  - Relevant standards
- Outputs:
  - Secure key IP to support the innovation
  - Cover white spots in IP map
  - Secondary revenue opportunities

IP asset portfolio chart:
- Identify technology fields enabling a firm's product
- Place each field on the portfolio chart based on ranking for strategic value & contribution potential

Next lecture

IP value extraction strategies to realize value:
- Premium price supported by IP
- Entrepreneurial use of IP for financing
- Revenue generation with IP assets
- Technology access and FTO
- Open innovation and collaboration
- IP based control of ecosystems