A presentation for the FICPI Forum
04 November 2020
Intellectual Property Valuation:
Practicalities for IP Attorneys
Client: I need a patent/IP valuation ...

IP Attorney:
What’s a patent worth? (back to basics)

- Why patent? Keep competitors out of our market/off our product* or similar/competing products: market exclusivity
- How? By getting enforceable, granted patent claims
- What? On as broad a scope as commensurate with the above
- When? Usually very early on in product development – but need to cover as many (future) sales periods as possible
- Where? In all our current/prospective markets, if possible

So a patent is worth a figure that represents the extent to which it can achieve all that – but the figure must be adjusted down to the extent that it cannot achieve all that
A method for arriving at a patent* valuation

- There are other methods! This is suitable for IP attorneys
- Emphasises what the IP attorney needs to input/understand
- In arithmetical terms, we can look at the process in 4 steps:

  I. What’s the patent worth if it’s ‘doing its job’ for 20+ years?
  II. Deduct for the contribution made by non-patent factors
  III. Deduct for the risk that the patent can’t ‘do its job for life’
  IV. Adjust the figures to arrive at a value in ‘today’s money’

* This method can be adjusted to apply to other forms of IP, rather than patents, and to services, rather than products
1. Assume that our patent will ‘do its job’

- The value of our patent could then be seen as:
  - What we might gain by selling products covered by the patent
  - Minus what we might gain anyway, if we had no such patent

- First, identify all the products that include a claimed feature
- Obtain (finance/commercial people) the nett* value of those product(s) sales during the life of the patent (EPL)

*The accountants will take account of the costs of developing/producing the product, marketing, overheads, people, amortisation, etc.
II. Deduct contribution by non-patent factors

- BUT not all sales will be due just to the patent – need to deduct or apply a % due to other (non-patent) factors

- A. The product as a whole may be a success due to components or design aspects *not* covered by the patent claims
  - Clarify to marketing/commercial which these are and then
  - Ask: how much ‘value’ do these non-patented components add?

- If, say, 10%, then our patent cannot be worth more than 90% of the nett sales value arrived at from step I
Patent exclusivity does not account for all sales

B. Market exclusivity due to patented elements will not be the only reason why people buy our product:
   ◦ design, advertising, marketing, problems with competitor products, &c

   Ask commercial people for an estimate of contribution made by factors (associated with but) not directly due to the product or the patent

   If, say, 20%, then the patent value is further reduced (from 90%) to 72% nett sales
IIC. Other adjustments to ‘nett sales’

- Is the patent licensed in some territories? – add royalties
- Could the patent be extended? – add adjusted nett sales

- Is the patent co–owned/other ‘sharing’? – subtractions due
- It costs to obtain and maintain the patent – subtract costs

Because all the foregoing adjustments are time-consuming, sometimes an overall factor is applied to nett sales, e.g. based on typical profit-splitting or a standard royalty rate.

In the EPO example (slides 10/11), the non–patent factors are estimated to account for about two-thirds of sales, so the initial value of the patent is reduced to ⅓ of the nett sales value.
III. Deduct for risk the patent can’t do its job

- So far, we have *assumed exclusivity* for the claimed aspects

- A. But is the patent valid?

- Are there grounds for *invalidity*? Chances of success?
- What is the likelihood that someone may actually challenge?

- Do we have grounds for defence? Chances of success?
- Do we have the resources to – would we, in practice – defend?
B. Even assuming it’s valid, is the patent inherently enforceable?
Do the claims specify a workable ‘infringement test’?
Are there ‘no-brainer’ claims?

Other issues include: incomplete ownership chain, etc.

We now need to reduce the total from step II to account for factors that may limit our exclusivity in the marketplace (‘legal risk’)

For time reasons, this presentation assumes you know how to assess the legal (IP) risks – further suggestions are in the FICPI Journal article or do contact me.
Example valuation published by EPO

Example Business Plan (highlighted entries input)

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>232,000</td>
<td>415,000</td>
<td>546,000</td>
<td>573,000</td>
<td>541,000</td>
<td>487,000</td>
</tr>
<tr>
<td>Selling Price (unit)</td>
<td>351</td>
<td>369</td>
<td>387</td>
<td>407</td>
<td>427</td>
<td>448</td>
</tr>
<tr>
<td>Production Cost (unit)</td>
<td>183</td>
<td>183</td>
<td>183</td>
<td>183</td>
<td>183</td>
<td>183</td>
</tr>
<tr>
<td>Gross margin (unit)</td>
<td>168</td>
<td>186</td>
<td>204</td>
<td>224</td>
<td>244</td>
<td>265</td>
</tr>
<tr>
<td>Gross margin (unit) as %</td>
<td>48%</td>
<td>50%</td>
<td>53%</td>
<td>55%</td>
<td>57%</td>
<td>59%</td>
</tr>
<tr>
<td>Royalty (on gross margin) at 33%</td>
<td>16%</td>
<td>17%</td>
<td>17%</td>
<td>18%</td>
<td>19%</td>
<td>20%</td>
</tr>
<tr>
<td>Saved royalties</td>
<td>36,644</td>
<td>69,032</td>
<td>94,979</td>
<td>104,069</td>
<td>102,017</td>
<td>95,063</td>
</tr>
<tr>
<td>Legal risk remaining assume 78%</td>
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- Gross margin = selling price minus cost of product
- Nett sales = turnover (€) x gross margin (%) [step I]
- Non-patent factors accounted for by subtracting $\frac{2}{3} (= 33\% \text{ ‘royalty’ rate})$ [step II]
- Legal risk est’d. as 22% = chance of patent failing [step III]
- ‘Expected royalty’ = value added by patent, through 6-year EPL
IV. Adjust to get value in today’s money

- The EPO example – the spreadsheet – applies a further step
  - This may appear under the ‘Turnover’ or ‘Nett sales’ lines, instead
- Puts monetary value of future income streams (e.g. annual nett sales) into today’s prices – the Net Present Value (NPV)

- We can (or accountants will) calculate the NPV
  - Usually use a method called Discounted Cash Flow (DCF)
  - Discounts the value of future cash flows to account for inflation, etc.

- NPV/DCF is what most commercial organisations use to compare values when deciding on resource allocation
The discount factor applied to future sales/royalties/cashflow assumes that the value of a unit of currency in the future is worth less than the value of the same unit today.

Companies typically use the weight-averaged cost of capital (WACC) for the discount rate/factor.

WACC measures the cost of capital to a firm, which is a reasonable price tag to put on investment in a product. It takes into consideration the rate of return expected by shareholders.
## Final steps – DCF and final valuation (NPV)

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<td>79,573</td>
<td>74,149</td>
</tr>
<tr>
<td>Discount factor</td>
<td>at WACC = 8%</td>
<td>100%</td>
<td>92%</td>
<td>85%</td>
<td>78%</td>
<td>72%</td>
</tr>
<tr>
<td>Discounted royalty</td>
<td>28,582</td>
<td>49,537</td>
<td>62,704</td>
<td>63,209</td>
<td>57,006</td>
<td>48,870</td>
</tr>
<tr>
<td><strong>Total before tax</strong></td>
<td>309,909</td>
<td></td>
<td></td>
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</tbody>
</table>
Summary

Don’t panic! Teamwork with commercial & financial

- IP Attorney input is essential (our role is) to:

- Identify client activities (e.g. products) protected by the IP
- Clarify which elements of the activity are covered (or not)
- Inform re: other relevant factors, e.g:
  - territories/sales areas encompassed
  - transactional deductions/additions (licences, other monetary deals)
  - costs of obtaining and maintaining the IP (may be included elsewhere)
- Assess the risk of exclusivity failing over time/place/activity
- Assess the risk of not being able to prove infringement
Thank you!

Supporting your IP-related career or business

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+44-(0)7740-946161
Julie Barrett – who am I?

- Mother, friend, singer, colleague, walker, mentor, writer, ...

- Chartered & European Patent Attorney (CPA, EPA)
- Purposive Step Consultancy
  - Support for IP-related businesses and careers

- Non-linear career as IP Attorney
  - BSc(Comb Hons) Business Admin & Chemistry
  - Director of IP on Development Lead Team of multinational pharma co.
  - Own practice founder, partner in private practice, career/business coach
  - Focus on business/commercial use of IP
The following three slides aim to draw parallels between house/tangible property valuation and IP/intangible property valuation.

Introductory slides, cut due to cut in session time.
Some basic considerations re: ‘value’

Suppose, instead of IP, you need to value an old house … What’s it worth?

- You want to sell the house
- You want to build the house
- You want to insure the house

Reason for valuation

- What someone will pay – £400k?
- What it costs to build – £200k?
- What it did cost to build – £10k?
- What it would cost to rebuild – £160k?
- Rental income – £1200 pcm?

Estimated value
Factors contributing to ‘value’ of property

- Depends on why you need to know value:
  - for a sale, depends on what someone else would pay for it
- Depends also on external factors, e.g.,
  - environment, neighbours, schools, crime, history, celebrity, security, &c
  - whether it is sold with sitting tenant (income stream v nuisance factor)
- You won’t receive the full price paid – need to deduct costs
  - Legal fees, agency fees, advertising/marketing, etc.

- Similar considerations and variables apply to valuing IP – and more!
Property – tangible and intangible

- You may want your house valued because you need to know your total asset value –
- you are likely to base that valuation on how much you could sell your house for, so ...

- Let’s assume you want to know the value of IP, e.g. a patent, because you want to know the asset value of the business –
- how much could you sell the patent for?
IP Valuation – Practicalities

Any questions?

Do get in touch if any questions remain unanswered
IP Valuation
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theberden@deloitte.com.au
Applications of IP Valuation

- Financial Reporting
- Tax
- Litigation
- M&A
- Licensing / JVs
- Strategy
- Risk management
- Board Reporting
Background
jargon & concepts
Present value of an annuity

Discount rate = 6%

Net Present Value

$421

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 3</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100</td>
<td>$100</td>
<td>$100</td>
<td>$100</td>
<td>$100</td>
</tr>
<tr>
<td>$94</td>
<td>$89</td>
<td>$84</td>
<td>$79</td>
<td>$65</td>
</tr>
</tbody>
</table>
Present value of a project

Net Present Value

Discount rate

Year 2

Year 3

Year 4

Year 5

-$
Enterprise valuation

Discounted back to a present value

Enterprise Value

Free Cash Flow FY1
Cash flow FY2
Cash Flow FY3
Cash Flow FY4
Cash Flow FY5
Terminal Value

Free Cash Flows
Valuation approaches & methods
Valuation approaches & methods

Cost Approach
- Replacement cost method
  - direct cost
  - opportunity cost
  - obsolescence provision

Market Approach
- Use restricted by:
  - data scarcity
  - comparability complications

Income Approach
- Income-based valuation methods
  - relief from royalty
  - profit split
  - incremental earnings
  - residual methods
Steps in an IP valuation

1. Asset definition
2. Purpose, scope & premise of value
3. Asset assessment
4. Valuation approach & method
5. Valuation analysis
6. Cross checks
7. Reporting
Income based IP valuation

1. Combined Earnings
2. IP Earnings
3. Associated Costs
4. Risk

5. Useful Economic Life

- NPV $
- FY1 -$0
- FY2
- FY3
- FY4
- FY5
- FY6

IP earnings
Other earnings
Income approach: illustration
## Combined earnings of IP and contributory assets

### Useful Economic Life

1. **Combined Earnings**
   - Market size
   - Market share
   - Benchmarks
   - Sales curve

2. **IP Earnings**
3. **Associated Costs**
4. **Risk**

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Asset assessment & earnings potential
- relative functional benefits

- Lower manufacturing
- Lighter/ better ergonomics
- Electrical safety
- Lower installation cost
- Lower maintenance
- Fewer SKUs
- Longer life

Client system
Current HVCS
### Asset assessment & earnings potential
- **level of protection**

#### PROTECTION
- Patent A/claim 1
- Patent C/claim 3
- Trade secret

#### TECH FEATURES
- Pin/socket interface
- Materials & design
- Cable anchoring
- Thimble arrangement
- Plug/receptacle arrangement

#### FUNCTIONAL BENEFITS
- Manufacturing efficiencies
- Better ergonomics
- Electrical safety
- Lower opex
- Longer life

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**Cash Flow**
- Asset assessment & earnings potential
- Level of protection
Value impact of changes in forecast sales

Present value of:

- $1M IP earnings in FY1, growing for 10 years at:
  - 5% CAGR
  - 10% CAGR
- 10% discount rate

- $7.6m present value at 5% CAGR
- $12.9m present value at 10% CAGR
- $9.6m cumulative FY10 at 5% CAGR
- $16.9m cumulative FY10 at 10% CAGR
Value impact of time to market

Present value of:
• $1M in 5 years
• 10% discount rate

Present Value $620,921  $1,000,000

FY5
Value impact of time to market

Present value of:
• $1M in 10 years
• 10% discount rate

NPV

FY10

$1,000,000

$385,543

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IP earnings

1. Combined Earnings
2. IP Earnings
3. Associated Costs
4. Risk
5. Economic life

Patent Royalty Rates (illustrative)

Royalty Rate

Patent Population

Inter-quartile range
Costs associated with the IP

1. Combined Earnings
2. IP Earnings
3. Associated Costs
4. Risk

5. Useful Economic Life
   - Costs specific to the subject asset
   - Development costs
   - IP costs
Value impact of up-front costs

- Present value of:
  - $1M of cost in FY1
  - $1.5M of revenue on FY5
  - 10% discount rate

\[ \text{NPV} = \frac{-1,000,000}{(1 + 0.10)^1} + \frac{1,500,000}{(1 + 0.10)^5} = \$0.02M \]
Development hurdles and risk

Remaining development time: ................................................................. 7 years

Cumulative probability of market entry: ............................................. 16%
Value impact of risk weighting

Present value of:

• $1M in 10 years
• 11% **probability of success**
• 10% discount rate

NPV FY10

$1,000,000

$42,410
Value impact of discount rate

**Cost of equity** (CoE)
- Risk free rate
- Equity risk premium
- Beta
- Asset specific risk premium

**Cost of debt** (CoD)
- Pre-tax cost of debt
- Less tax benefit

**Weighted average cost of capital**
- CoE X equity weighting
- CoD x Debt weighting

Present value of:
- $1M in 10 years
- 100% probability of success
- **20%** discount rate

NPV FY10
- $1,000,000
- $161,505
Useful economic life

1. Combined Earnings
2. IP Earnings
3. Associated Costs
4. Risk
5. Useful Economic Life
Value impact of economic life

Present value of:

- **$1M p.a.** IP earnings for
  - 5 years
  - 10 years
  - indefinite useful life
- 10% discount rate

$3.8M

NPV 5 years

$6.1M

NPV 10 years

$11.4M

NPV indefinite life
IP assets are complex
- Valuation requires multi-disciplinary inputs

Scope
- Fit for purpose
- Ensure client/users aware of restrictions

Clear asset definition
- Imprecision undermines subsequent analysis

Legal characteristics
- Vary by jurisdiction
- Can significantly influence value
- Attorney inputs?

Functional characteristics
- Asset utility central to value
- Consider quality of supporting evidence

Economic characteristics
- IP economics
- Cross checks
- Do findings articulate the range of potential outcomes?
Finance jargon

- EBITDA
- NPAT
- EBIT
- Market Cap
- NTA
- Net tangible assets

- Earnings before interest & tax
- Earnings before interest, tax, depreciation and amortization
- Net profit after tax
- Market capitalization (share price x number of shares)
Valuation jargon

- Discounted cash flow
- Compound annual growth rate
- Weighted average cost of capital
- Capital asset pricing model
- Market cap or EV/EBIT or EBITDA or Revenue
- Enterprise value
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