IP evaluation and protection

Evaluation dimensions
Dr. Malte Köllner

- World’s Leading Lawyer Valuation (Chambers)
- Lecturer on Patent Valuation
- World’s Leading Patent Strategists (IAM)
- Vice-Chairman German standards committee on patent valuation
- Vice-Chairman committee on patent valuation of the German chamber of patent attorneys
- Editor-in-Chief MITTEILUNGEN DER DEUTSCHEN PATENTANWÄLTE
- Author of “PCT Handbook”
Main purpose of this module

This first module provides an introduction and overview into the different evaluation dimensions. For each topic, examples of relevant factors of the respective perspective should be given. However, of course the list of examples is always incomplete and should provide insight to the students how to approach the various dimensions.
Valuation approaches

- Market approach
- Cost approach
- Income approach
Income approach

\[
value = \sum_{t} \frac{Income_t - cost_t}{(1 + WACC)^t}
\]

β All values are expectation values (E)
β E(\text{Income}) = \text{Income} \times \text{Probability(\text{Income})}
Income approach

Isolation of patent related cash flows by comparison with comparable products:
• Identification of a patent related increased market share
• Identification of a patent related premium price
• Identification of patent related cost reductions
Patent valuation (with the income approach)

Patent valuation

- Economic
- Technical
- Legal
Risk and patent income

- technical risk
- legal risk
- resulting income
The different perspectives

- Legal Perspective
- Technology perspective
  - Technical risk
- Market / economic perspective
- Internal perspective
# Implicit assumptions

<table>
<thead>
<tr>
<th>Statement</th>
<th>Patent X can generate earnings of € 100,000.</th>
</tr>
</thead>
<tbody>
<tr>
<td>More precisely</td>
<td>The Patent</td>
</tr>
</tbody>
</table>
Legal questions
Dealing with legal risk

Clarifying aspects A, B, C, …

e.g. ownership, invalidity, Freedom-to-Operate, …

1. Requirement:

Don’t forget anything relevant, completeness.

Don’t forget any risk.

I.e. we need a complete list of all legal questions / topics.
List of topics

1. **Completeness** of the list of topics.
2. The topics should be **disjoint**.

Do not take risk into account twice!
Legal topics / aspects (1/4)

Status of the patent

- Is it in force?
- Countries covered?
- Remaining lifetime?
Legal topics / aspects (2/4)

Ownership and contractual issues

E.g. employee inventions
Legal topics / aspects (3/4)

Patentability / Invalidity

Has it been granted?
If not, is it patentable?
If yes, can it be invalidated?
Legal topics / aspects (4/4)

**Freedom-to-Operate**

- Third party patents
- Industry standards
- Legal restraints
- FDA approvals
- etc.
Mixed aspects (1/3)

Scope

Does the patent really cover the product or process that it is meant to cover?

Does it cover “your own” product?
Mixed aspects (2/3)

Circumvention and breadth of coverage

Which “third party products” does it cover?
Mixed aspects (3/3)

Detectability and Enforceability

β Can infringement of the patent be detected?
β Can the patent be enforced?

(Complete? Disjoint?
There are different lists imaginable.)
7 Pillars of wisdom (for patents)

"Wisdom has built her house; she has hewn out its seven pillars ..."

(Bible, Proverbs 9:1)
The different perspectives

- Legal Perspective
- Technology perspective
- Market / economic perspective
- Internal perspective
Risk and patent income

- Technical risk
- Legal risk
- Resulting income

Risk-free economic income
Dealing with technical risk
e.g. clinical studies

Decision tree

Pre-clinical studies
- Passed: 25%
  - Failed: 75%

Phase I
- Passed: 70%
  - Failed: 30%

Value = 0 €

Phase II
- Passed: 18%
  - Failed: 82%

Value = 0 €

Phase III
- Passed: 50%
  - Failed: 50%

Value = 0 €

DCF
Dealing with technical risk, e.g. technical product

Technical problem

Solved: 75%

After 1 year: 33%
DCF + 1 year

After 3 years: 67%
DCF + 3 years delayed and additional costs

Never solved: 25%
Value = €0
## Technical risk

<table>
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<tr>
<th>Status of development</th>
<th>Technical risk</th>
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<td>Idea</td>
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<tr>
<td>Prototype</td>
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<tr>
<td>Pre-series</td>
<td>35%</td>
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<tr>
<td>Start of production</td>
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<tr>
<td>Commercial launch</td>
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<td>Established on the market</td>
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The different perspectives

• Legal Perspective

• Technology perspective

• Market / economic perspective

• Internal perspective
Economic effect of a patent

- Patent value
  - Cash flow
    - Appropriation (of the economic advantages)
      - Impact (in the market)
        - Function (of the patent)
          - Legal influencing factors
            - Technical influencing factors
              - Blocking impact (of the patent)

Economic influencing factors:
- Determines
- Generates
- Must lead to
- Uses
## Business plan

<table>
<thead>
<tr>
<th>Year</th>
<th>Turnover (DM)</th>
<th>Selling Price (DM)</th>
<th>Production Costs (DM)</th>
<th>Gross Margin per Unit Sold (DM)</th>
<th>Gross Margin in %</th>
<th>Royalty Rate of Gross Margin (33%)</th>
<th>Legal Risk - Remaining (78%)</th>
<th>Expected Relieved Royalty (DM)</th>
<th>WACC (8%)</th>
<th>Discounting Factor</th>
<th>Discounted Royalt (DM)</th>
<th>Summe nach Steuern (DM)</th>
<th>Fictitious Taxes (20%)</th>
<th>Sum after Tax (DM)</th>
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<td></td>
<td>50,684</td>
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<td>20%</td>
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Business plan

• Where does the business plan come from?
• Do you have an independent perspective?
Income approach

\[\text{value} = \sum_{t} \frac{Income_t - cost_t}{(1 + WACC)^t}\]
## Business plan

<table>
<thead>
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The different perspectives

Š Legal Perspective

Š Technology perspective

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Š Internal perspective
Complementary factors to generate income

To generate the income, you need more than the patent alone, namely:
• Know-how
• Capital
• Skilled persons
• A factory
• A sales force
• A big market / customers
• Processes / things must really happen
• ...

European Patent Office
Complementary factors

Compl. factors

processes

patent

=

IP Value