

# Volvo Technology Corporation

**Practical experiences regarding the  
evaluation of medium-sized patent  
portfolios**

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property as an economic asset**

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# Volvo Technology Corporation

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\* valuation = determination of the (monetary) value of an asset

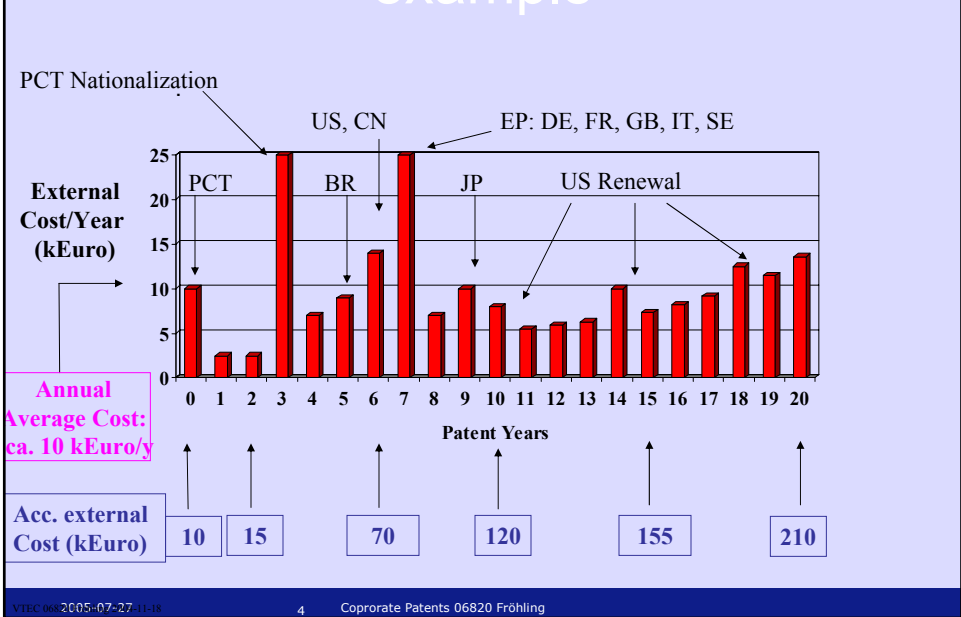
\*\* evaluation = qualitative assessment (ranking, scoring) of an asset, often in comparison with other assets of similar type

# Basics about valuation

## The challenge

- **IBM IP business model year 2000**
  - 1.9 Billion US\$ licensing revenues
  - 98% net profit (1.86 Billion US\$)
  - 23% of total pre-tax income (8.1 Billion US\$)
  
- **Key data for a patent family**
  - Coverage: 10 countries: EP(5), US, JP, KR, CN, BR
  - Duration: typically ca. 10-12 years
  - Cost: ca. 100.000 Euro (accumulated) or ca. 10.000 Euro/year (on average)

# Costs of a Patent family – an example



# Basics about valuation

## Knowledge based company model

- Structural capital (tangible assets)
- Intellectual capital (intangible assets)
  - Intellectual assets
    1. Intellectual Property IP (patents, designs, marks, ...)
    2. Proprietary information (confidential know-how)
  - Human capital (knowledge of the employees)
- Complementary functional assets
  - IT-systems
  - Supplier & distribution networks
  - Customer relations
  - ...

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# Basics about valuation

## Basic valuation concepts

- **Cost approach**
  - Basis: the investment costs for the technology
  - Concept: reproduction/replacement costs
  - Method: reimbursement of costs
  - Suitable objects: new (emerging or innovative) technologies
- **Income approach**
  - Basis: a reliable business plan
  - Concept: expected income of the investment
  - Method: discounted cash-flow (net present value)
  - Suitable objects: technologies ready for commercial exploitation
- **Market approach**
  - Basis: equal assets shall have equal price
  - Concept: comparison with similar/competing technologies
  - Method: market price; comparison with known cases
  - Suitable objects: mature technologies

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# Basics about valuation

## Occasions for IP valuation

- **Single events**
  - Merger & acquisitions
  - Joint ventures, co-operations & strategic alliances
  - Purchase or sale of technologies and/or patents
  - Licensing of technologies and/or patents
  - ....
- **Recurrent events**
  - Annual reports of the company
  - Financing, rating, tax & accounting
  - R&D project management
  - Crosslicensing of technologies and/or patents
  - **Annual screening of the patent portfolio**

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# Patent portfolio evaluation

## Annual patent portfolio screening

- **Small-sized patent portfolio**
  - 1-100 patent families
  - 10-1.000 patents & patent applications
  - Manageable: annual in-depth evaluation & valuation
- **Medium-sized patent portfolio**
  - 100-1.000 patent families
  - 1,000-10.000 patents & patent applications
  - Manageable: modified annual in-depth evaluation
- **Large patent portfolio**
  - > 1.000 and more patent families
  - > 10.000 patents & patent applications
  - Manageable: simplified annual evaluation

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# Patent portfolio evaluation

## Basic steps

1. Initial evaluation of the own patent portfolio
2. Recurrent annual evaluation of the own patent portfolio
3. Initial & recurrent annual evaluation of 3rd parties' patent portfolios (competitors, suppliers, technology providers)
4. Concurrent annual patent portfolio evaluation (steps 2 and 3)

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# Patent portfolio evaluation

## 21 Aspects to be considered (1)

1. Set up one or more cross-functional teams of experts (IP, technology, marketing, sales, business strategy,...) and educate them in IP evaluation
2. Create a portfolio structure (divisions & their products, technologies used in said products or held for use according to the business strategy)
3. Classify the individual patent families according to said portfolio structure; appropriate sub-portfolio size: 25-50 patent families
4. Define a set of parameters for the assessment of the patent families & sub-portfolios:
  - patent family related parameters,
  - technology related parameters,
  - product & market related parameters,
  - financial parameters,
  - business strategy related parameters
5. Create a questionnaire in order to achieve a common language & understanding between the experts about the parameters chosen

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# Questionnaire for Assessment of Patents

## Example

### Patent parameters

- Status
- Strength/challenges
- Age
- Geographical coverage
- Scope
- Infringement monitoring
- Enforcement
- Relation to other patents
- ...

### Technology parameters

- Uniqueness
- Superiority
- Maturity
- Time to market
- Easy to copy
- Easy to substitute
- New skills & tools necessary
- Licenses necessary
- ...

### Market parameters

- Marketing options
- Market growth
- Technology/product lifecycle
- Substitutes
- Premium price
- Additional turnover
- Non-core exploitation
- ...

### Financial Parameters

- Business w/o & w patent
- Future development costs
- Implementation costs
- Production equipment costs
- Patent costs
- License costs/license income
- Share in the company's profit
- ...

### Strategic Parameters

- Freedom to operate
- Exploitation of new markets
- Brand-identification & exclusivity
- Customer benefits
- Defence of existing markets
- Image-building
- Core/non-core business
- ...

# Questionnaire for assessment of Technology

## Example

1. Is it possible to protect the technology with patents or other means (copyrights, trademarks and trade secrets etc.)?
2. To what extent will the final technology represent an innovation?
3. Probability of technical success until technology can be commercialised and/or implemented?
4. Probability of success for commercialisation /implementation. (Possible to produce? Potential customers? Regulations?)
5. Is it possible to sequentially implement the technology?
6. Is the project necessary to be able to fulfil specific customer demands, regulations, public authorities or specifications etc.?
7. What is the potential extra turnover to be obtained within the market segment, when implementing/commercialising the technology?
8. What is the project's total cost for the company?
9. Does the final technology call for new skills, qualifications, or production equipment before it can be commercialised and/or implemented?
10. Is there alignment between the project and the company's business plan?

# Patent portfolio evaluation

## 21 Aspects to be considered (2)

6. Make an initial classification of the importance of the patent families according to a simple HML-assessment: H=High; M=Medium; L=Low
7. In the next step use a (user-friendly) scoring system (questionnaire) for the assessment of the patent families (example: IPscore from the Danish Patent Office); the result is a relative ranking of the patent families assessed
8. Repeat the HML-assessment
9. Make a plausibility check of the results and adjust them if necessary
10. Score the sub-portfolios accordingly
11. Use the assessment results for the decisions regarding individual patent families & sub-portfolios:
  - Patent families: foreign filings; maintain, abandon, license/sell, donate, ...
  - Sub-portfolios: increase, maintain, decrease; abandon, license/sell, donate, ...

# Patent portfolio evaluation

## 21 Aspects to be considered (3)

12. Repeat/update the assessment regularly (for instance annually)
13. If a financial valuation is needed choose a valuation concept for the patent families or sub-portfolios in question suitable for the purpose of the valuation
14. Depending on the circumstances it might be wise to make an independent financial valuation based on a second suitable valuation concept
15. Don't believe in figures, i.e. make always plausibility checks of the results of the evaluation & the financial valuation and adjust them if necessary

# Patent portfolio evaluation

## 21 Aspects to be considered (4)

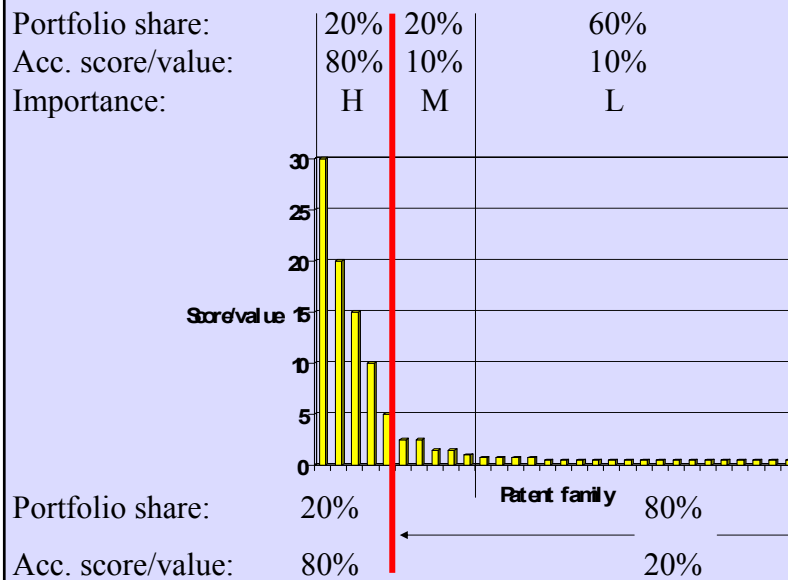
16. Identify the important part of your company's patent portfolio ("brand-identifying" patents, basic patents, blocking patents, etc.) by using for instance the results of your HML-assessment
17. Use the 80-20 rule for your evaluation & compare it with the results of your HML-assessment & adapt it, to the extent necessary, to your needs (for instance to a 75-25 rule)
18. The 80:20 rule: "80% of the value of a patent portfolio is based on 20% of the patent families of the portfolio"
19. Save cost by making a comprehensive evaluation/valuation for the decisive "20%"-part of the portfolio & a simpler estimation for the remaining "80%"-part
20. Save cost by screening the "80%"-part of the portfolio very thoroughly; if there are no special (often sub-portfolio related) reasons to keep the patents get rid of them by selling them, by granting licenses on them, by donating them to universities (USA) or simply by abandoning them
21. Remember always that the score & the value of a patent family are not static and depend completely on the purpose of the evaluation or valuation

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## The 80 : 20 Rule – an example



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# Conclusion

- Patents can be seen as a **currency** for the company's business:
  - Securing access via cross licenses to complementary technologies needed for the company's business but controlled by third parties;
  - Strengthening the company's position in strategic alliances, co-operations or merger & acquisitions;
  - Showing the company's innovation strength and technological competence;
  - ....
- Important is not (only) the number of patents but (more important) their quality
- In general the use of patents in own products is no longer the only goal

# Conclusion

- Important patents are those
  - which protect "brand-identifying" or "visible" features of the products,
  - which protect a significant competitive advantage of the products,
  - which can block the competitors and suppliers,
  - for which evidence for infringement easily can be shown,
  - which are suitable to form an international standard,
  - which protect emerging technologies (broad scope of protection possible)
  - which protect systems and sub-systems
- Thinking in terms of patent portfolios (instead of individual patents) is of increasing importance for industry
- **Therefore, simple, robust & reliable (trustworthy) evaluation & valuation methods and software tools are urgently needed**

# Conclusion

About the robustness of patent evaluations

The **telephone** is a fantastic invention –  
I am pretty sure that in the not too far  
future there will be at least **one** telephone  
in **each** town!\*

\* The origin of this quotation is unknown to the author of this presentation

# Conclusion

Thank you for your attention