



What is your patent portfolio worth?

By Kristian Henningsson, HØIBERG A/S

It is widely recognized that knowledge plays an increasingly important role in modern economies, and intangible assets often constitute a significant portion of the value of technology companies. Intangible assets include intellectual capital and intellectual property. Understanding the value of a patent portfolio is a complex task, which requires knowledge from three different disciplines: patent law, technology and finance. Inadequate valuation of patents may lead to sub-optimal and potentially very costly decisions.

4 methods of valuation:

Cost approach

Estimates replacement of a patent, through new development or through purchase of equivalent technology

Income approach

Valuation based on expected future income flow generated by a patent

Market approach

Estimation based on similar market transactions

Qualitative approach

Assessment of characteristics and potentials of the patent, such as legal, technological and strategic aspects

Understanding the purpose of the valuation is essential for an accurate valuation. Reasons for

valuing a patent or patent portfolio include raising new capital, transferring rights (assignment and licensing of rights) as stand-alone transactions, transferring rights as part of bigger commercial deals, including mergers and acquisitions, quantification of damages in disputes and reviewing the patent portfolio of a company. A range of quantitative and qualitative methods for valuing patents are available, which should be used in accordance with the purpose of the valuation, but also in accordance with the characteristics of the patent.

Cost approach

A cost approach is a simple method particularly applicable for recently developed inventions, for which development cost or development effort data are available. The cost approach estimates what it would cost to replace the patent, if possible. Hence, it can be used when alternative solutions can be envisaged and the development costs can be estimated.

An example of a credible valuation based on the cost approach could be a computer software patent in a company, which has developed several similar patentable solutions. The company is capable of estimating the approximate development for a functional equivalent.

If the functional equivalent could be acquired from an external source, this can also serve as basis for a valuation based on the cost approach. A cost approach may also be the appropriate method for valuation of in-development or non-commercialized

(e.g. defensive use) inventions if there are no other data, e.g. licensing statistics, available. The cost approach is not limited to specific purposes, but can be applied in many cases e.g. when raising new capital, buying/selling technology or transfer of patents.

Income approach

An income-based approach values the patent on the basis of the future income deriving from the successful utilization of the technology. In other words, if a patent is used actively to generate revenue it might be possible to give a reasonable forecast of future income during the lifetime of the patent. The main weakness of income based approaches – the inability to forecast a residual value beyond a certain period of time – does not concern patents, whose lifetime is limited.

In this category, the **discounted cash-flow methods** are widely used by IP firms. These methods take into account the remaining years of the patent and calculate a total value, which is then discounted back to a present value. More specifically this means that for the remaining lifetime of the patent a future net stream revenue has to be estimated i.e. the additional revenue generated by the patent. The incremental costs of the patent also have to be taken into account in the net value. When discounting the total value back to a present value the average interest rate can be used.

An example of a useful application of a discounted cash-flow method would be pharmaceuticals that are on the market, for which the future cash-flow may be predictable.

License agreements are also rather straight-forward to use as input data for discounted cash-flow calculations.

Another example, on which a discounted cash-flow method can be applied, would be a new manufacturing process that makes production cheaper. In this case it is the saving that 'generates' a net increase in profits.

Market approach

For new patents with an unconfirmed impact on the market, the valuation is of course an extremely

difficult task. A relevant quantitative approach for this situation may be the market approach, i.e. estimation based on transaction statistics for similar patents on the same or comparable markets. The market approach is similar to what is commonly used in e.g. real estate valuation, i.e. analysis of a number of parameters for a comparable object to evaluate the relative value.

However, the uncertainty of other factors is often too high to be able to rely on statistical data for other patents, and the valuation often results in a potential rather than an actual value.

The market approach can be applied on any kind of patent and is an important indication of the value. Unfortunately it is rare that patents are fully comparable in all aspects, and in practice the relevant transaction details for comparable patents are often not disclosed.

Cost approach

- + objective, consistent, reliable in specific cases
- uncertain correlation between development cost and value, requires an equivalent for replacement

Income approach

- + theoretically well-founded, consistent over a portfolio, valuation method particularly suitable for patents
- requires subjective cash-flow assumptions

Market approach

- + simple yet relevant (using real data)
- requires comparable patents, sometimes indicates potential rather

Qualitative patent valuation

All of the methods above need to be complemented with a qualitative analysis. In particular a new or future patent is left out to qualitative assessment since estimations of future revenue are very uncertain and there are no statistical data on the patent itself. Qualitative valuation aspects include e.g. legal aspects, technology level, scope of protection, commercial potential and enforceability of the patent claims.

Qualitative valuation is needed when deciding whether patenting an invention is a good idea at all, when deciding to continue renewing the patent, deciding which countries that are worth filing application in, or ranking patents in a portfolio. It can be used to support any of the quantitative approaches above, e.g. explaining why a patent is comparable to an existing patent in terms of protection and market. A qualitative valuation requires excellent knowledge about the technology, market and competition, but also an understanding of the technical and legal aspects of the patent. Typically, the inventor could have the former and a patent attorney the latter.

Under qualitative valuation there are also additional aspects related to synergy within a portfolio that need to be taken into account. The overall strategy or the total value of a patent portfolio is often more relevant than the value of the individual patents, typically since complex technologies require a number of patents to operate on a market and competitors try to fence and block each other. Another reason that the value of the portfolio may exceed the sum of the individual patents is that a challenge of the validity of one patent in a portfolio may be compensated by neighboring patent rights.

Internal qualitative valuation for patent portfolio review ranges from extremely simple rating system to extensive questionnaires with graphical presentation of strength, weaknesses, threats and opportunities of the portfolio. One example of an evaluation tool is IPscore, provided by the European Patent Office, which is said to, based on user inputs on a number of assessment factors, identify the conditions that create value for patents.

An area that has not been analyzed extensively in the literature is the relationship between patents and trademark and the synergies related to their combined value. It is clear though that the value of a patent is influenced by the strength of the trademark associated with the product that the patent protects.

So what is the value of my patent?

As can be seen from the overview above, there is no best method. Patent valuation is a complex task, which needs expert knowledge from several different disciplines, and there is no simple and clear answer. However, even if the task may seem overwhelming,

there are a number of concrete aspects that should be kept in mind when a patent is valued:

- Develop a clear and complete definition of the protected subject
- Develop a clear and complete definition of the patent and its protection.
- Understand the purpose of the valuation (raising capital, licensing, defensive use etc.).
- Make sure a proper valuation method is selected – can any of the traditional approaches be applied? Whoever performs the valuation should be able to explain the specific analytical procedures that were performed and support with good arguments.
- Analyze the qualitative aspects and assess whether these are in line with the quantitative valuation, or whether they provide additional or reduced value. A tool such as IPscore can assist if needed.
 - Technical aspects: scope of protection, commercial potential, other dominating rights, next-best technology, remaining lifetime etc.
 - Legal aspects: validity, enforceability, actual or threatening litigation etc.
- Consider synergies among patents and potential additional value generated by trademarks.

If you want to know more about patent valuation, you are welcome to contact Kristian Henningsson.



**Kristian
Henningsson**

Patent Attorney

Contact information:

T: 3332 0337

khn@hoiberg.com