

Exhibit 2021
Zynga, Inc. v. Personalized Media Communications, LLC
Case IPR2013-00171 (SCM)

Patent portfolio management and patent evaluation - FAQ

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Answers

What is a patent portfolio?

A patent portfolio is the list of patents owned by an individual or a company. Managing your patent portfolio and comparing it to those of other companies is essential to helping you better determine the economic value of your own patents and remaining competitive. Patent portfolio management can help you to identify opportunity and risks factors (e.g. growing markets/appearance of substitute technologies).

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What is patent value?

The value of a patent is the future commercial utility that can be extracted from the use of the patent. The patent may be used to protect one's own products or to create licensing income.

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How much is a patent worth?

The value of a patent depends on the reason for the evaluation and who is exploiting the invention. For example, a patent will be valued differently if it is part of a bankrupt company's assets than in the context of ongoing production. The value it has for a bank, which can only resell it, is different to its value for a market participant who already has the means to produce it.

In addition to monetary value, patents also have a non-monetary value. For example, they may improve the image of a company. Receiving patents for their own inventions may also increase the inventors' reputation and act as an incentive for even greater innovativeness.

[ip4inno Student's handbook](#)

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What exactly is evaluated in a patent evaluation?

When carrying out a patent evaluation, it is important not only to consider the patent as an exclusivity right, but also to consider its underlying technology, as well as the company's ability to use its complementary assets (i.e. its ability to commercialise the invention).

While it may be desirable to value each patent individually in theory, in practice, it can be difficult to separate two interdependent patents.

In many cases, it makes sense to evaluate whole patent clusters rather than individual patents.

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What are the reasons for carrying out a patent evaluation?

The need to find out the value of a patent can be triggered by both internal and external factors:

Internal	External
optimisation of patent portfolio costs alignment of patent strategy to overall business strategy remuneration of inventors	

financing licensing mergers and takeovers accounting (IAS 38) enforced evaluation (insolvency, damages)
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Who carries out patent evaluations?

The skills needed to carry out an evaluation depend very much on the purpose of this evaluation. But a thorough evaluation requires expertise in many areas, including marketing, finance, R&D and strategy, so it is a good idea to use an interdisciplinary team.

To ensure a meaningful result, the team should therefore include experts in both the patent subject-matter and evaluation methods.

The methods used for monetary evaluation should be transparent, so that the results can be checked and verified.

Support from intermediaries, e.g. PATLIB centres or national patent offices, may help to improve the evaluation process. Such intermediaries can also give advice on how to interpret and profit from the evaluation results.

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Who might be interested in a patent's value?

Apart from applicants themselves, a patent's value is mainly of interest to technology transfer institutes, banks and venture capitalists.

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What are good indicators of patent value?

Research has identified a number of indicators that may be used to assess a patent's value.

The number of **forward citations** is often used as a strong indicator of patent value. A forward citation is a reference to the patent to be evaluated in a later document. An analysis of such citations produces a network of links called a patent citations network which is used in evaluation. The number of times a patent is cited indicates its scientific importance and therefore its value.

Other indicators of patent value include:

- the patent family size
- the lifespan of a patent
- the outcome of oppositions to the patent application
- the number and quality of claims

These factors or "value indicators" can influence the value of the patent both positively and negatively in the same way as factors such as location, numbers of rooms, nearby schools, etc. affect the value of a house.

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What do the statistics say about patent value?

Statistical analyses have shown that the number of patents with a very high value is quite small, and that the value spread varies from country to country.

In 2005, a PatVal-EU study estimated the economic value of patents by collecting data on more than 9 000 patents, including their value and a broad set of characteristics describing the context of the invention. The study estimated that only 7.2% of patents in the sample were worth more than EUR 10 million each, while 68% were worth less than EUR 1 million.

[PatVal-EU study](#)

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How do you measure patent value?

Methods of evaluating patents for business purposes can be divided into two groups - quantitative and qualitative. Quantitative ways of assessing the value of a patent or patent portfolio attempt to calculate the monetary value of the patent. They fall into three basic categories:

- 1. Cost method:** Cost theory looks at the costs which would be necessary to develop and patent a similar invention, either in-house or externally. This approach is generally used in accounting and bookkeeping.
- 2. Market method:** Market-based methods value patents through comparison with prices achieved in recent comparable transactions. These methods require an active market, a comparable exchange of IP between two independent parties, and sufficient access to transaction price information.
- 3. Income method:** Income-based methods measure the potential income that can be derived from a patent; the calculation of the present value of the patent on the basis of anticipated future income (less interest).

All three methods have their advantages and disadvantages, and the most suitable one must be chosen on a case-by-case basis. It is therefore always a good idea to get legal and professional advice. Here is an overview of the advantages and disadvantages of all three methods:

Method	Advantages	Disadvantages
Cost method	patents become visible in the company's books and patent awareness is increased useful indicator of patent value in the case of patents whose future benefit is not yet evident	no direct correlation between cost of development and the future revenue of patents future revenue from patents is not considered the cost method can encourage overspending
Market method	relatively straightforward evaluation method useful to check the validity of other approaches	limited formal markets for IP relevant pricing information not usually public uniqueness of IP makes direct comparison difficult
Income method	relatively simple likely availability of required inputs from company's financial statements and market information - may be possible to identify/forecast cash flows	can be an uncertain method and subject to subjective assumptions both uncertain and distant cash flows and the discount rate have to be estimated

Different evaluation methods are needed for different target audiences, e.g. prospective investor, internal management, etc.

The preferred method of most companies is the income method.

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What is qualitative evaluation and when is it used?

As quantitative evaluation only gives an indication of the estimated monetary value of the patent, this approach is often insufficient as a basis for recommending business strategy decisions. Qualitative evaluation goes further by identifying the strengths and weaknesses of the patent and creates a value guide through the rating and scoring of different factors related to the patent.

For example: Even if the outcome of a quantitative evaluation was, "The patent is worth EUR 50 000", the result of a qualitative evaluation could be, "The patent protects a technology of strategic importance for an attractive market; it can be enforced efficiently, but significant investment is still needed".

Qualitative evaluation methods are most often used for the purpose of internal patent management. They are most useful for comparing, categorising and ranking patents within a portfolio or vis-à-vis competitors' patents. They are also useful for assessing the risks and opportunities of patents.

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Does the EPO carry out patent evaluations?

The EPO does not provide tailor-made patent value assessments. It can, however, advise users and guide them to the appropriate tools that will help them carry out their own patent or patent portfolio evaluation.

Watch out for virtual classroom seminars on patent evaluation and portfolio management on the EPO's searchable event calendar.

[Searchable event calendar](#)

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What EPO tools are available to help with patent evaluation?

The EPO has acquired, adopted and distributed the "IPscore" software to the national patent offices in its member states.

IPscore, developed by the Danish Patent and Trademark Office in co-operation with the Copenhagen Business School and industry, enables you to carry out a qualitative evaluation. The IPscore method is used to value technology, patents and patent portfolios internally, within companies, and provides a framework for evaluating and strategically managing patents.

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How does IPscore work?

The IPscore assessment of a patent consists of five categories: legal, technology, market, finance and strategy. Each question relates to a different value indicator. In each question the patent is rated 1-5 according to its strengths and weaknesses. Together, the 40 or so value indicators form a whole picture of the patent and related risks (e.g. existence of an alternative technology) or opportunities (e.g. winning new markets). These are then displayed in various tables and graphical forms to be used by management for taking strategic decisions. In this way IPscore can display information relevant to the decision-making process and facilitate cross-functional co-operation within companies.

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Last updated: 10.1.2011