

One Valuation fits all?

How Europe's most innovative companies valuate technologies and patents

PRICEWATERHOUSECOOPERS

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Foreword

Patents offer a temporary monopoly on the exploitation of an invention and hence a very attractive potential to develop new markets and sources of revenue. They are "felt" to be a key factor to success in enterprises of all sizes, in all sectors and in all countries. And, in the most innovative sectors, they are also of considerable interest to stakeholders and the capital markets. For this reason, the scope, development and potential of companies' patents portfolio should be elementary constituents in any strategic considerations of management.

The key significance of patents and technologies for corporate success requires a set of valuation tools appropriate to this function. Although there have been certain efforts at standardisation in this connection there is still a considerable need for refinement. In contrast to the valuation of tangible assets, in the case of intangibles such as brands and patents there is great uncertainty about the choice of methods and their application at the corporate level.

In particular, thanks to the introduction of International Financial Reporting Standards and the German Accounting Modernisation Act (Bilanzrechtsmodernisierungsgesetz) recently the debate on the valuation of intangible assets has gained momentum. There has been an increase in the number of occasions where valuation is called for and indeed in the interest of the capital market in the "soft" factors influencing corporate success. We have been encouraged by this development to conduct a Europe-wide survey of companies intensively involved in patent use and patent valuation in their business practice. The survey has been performed by PricewaterhouseCoopers in collaboration with the Institute of Technology Management at the University of St. Gallen, Switzerland, its Innovations and Intellectual Property Management spin-off BGW AG, and Shearman & Sterling LLP. The findings discussed below represent in the first instance a snapshot, but are nonetheless revealing for the development of valuation of patents and technologies.

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A Technical progress in the knowledge society

Thesis 1

As we move further into a knowledge economy, so are technologies and patents becoming increasingly important

“A small invention every ten days, and a big one every six months” was the wish of Thomas Alva Edison in 1876 for his research laboratory at Menlo Park in the State of New Jersey, the first enterprise in history to specialise in patents. His wish was fulfilled, with Edison winning a total of 1,093 patents. Although involved in a series of copyright disputes and faced with much pirating of his inventions, Edison was one of the first men to be successful as an inventor. Indeed, the present-day multinational General Electric can be traced back to an Edison company, although Edison himself sold his shares early in order to provide funding for new inventions.

Another pioneer in the fight for patent protection was Werner von Siemens, the most successful German inventor-entrepreneur. The patent protection association he founded was largely responsible for the uniform patent law that came into force in Germany in 1877. The material incentive for inventors that this gave rise to was perhaps the greatest single force behind the accelerating scientific and technological progress that took hold from the end of the 19th century.

Times have changed, and it is no longer companies specialising in inventions that set the pace. Nowadays companies such as Siemens, BASF or Bosch register more patents in a year than Edison did in his lifetime. Both the numbers of patents applied for and those granted are growing exponentially, in Germany, Europe as a whole and indeed the world, with the European Patent Office surpassing in 2006 the threshold of 200,000 applications, a doubling within ten years. In 2006 the number of patents granted was about 62,000, and the number of requests for patents in all OECD countries rose from 1995 to 2004 by 7 percent annually.

In the same ten-year period in Germany, the rate of growth in patent applications, at 6.9 percent, was only slightly below the OECD average. More than 50,000 patents are currently applied for annually in Germany, and about one third of the applications are granted. In terms of how many of those in the working population seek to register a patent, Germany ranks sixth in the OECD survey, with 288 patent applications per million inhabitants, compared with the leaders Finland (600), Sweden (518), Switzerland (392) and Japan (342).

In terms of the patents relevant to the world market – these are known as “triadic” patents – that were applied for in the USA, in Europe and in Japan, Germany comes third in the world ranking. In 2004, 35 percent of all patents relevant to world markets went to inventors in the USA, followed by those in Japan (23 percent) and Germany (11 percent).

The economic significance of innovations and patents is shown not least in the fact that it is the most knowledge-intensive sectors of industry that enjoy the highest growth. The latest “Report on technological performance of Germany” of the Federal Ministry of Education and Research found that, between 1995 and 2005, real production in the industrial sectors with a high research and development intensity rose by 43 percent. Their share in overall industrial production increased from 43 percent in 1993 to 52 percent in 2005, whereas sectors with a low knowledge index reported a production growth of only 6 percent in the same period.

No end of this development is in sight – quite the contrary, with higher growth through the transition from the industrial society of the twentieth century to the

knowledge society of the twenty-first. According to a survey conducted by the OECD in 2001, the number of knowledge-workers grew in the nineties in the OECD countries by an average of 3 percent annually, more strongly than any other vocational group. The only group that reported an absolute decline in the numbers employed in this period was that of industrial workers, with an annual decrease of 0.2 percent.

The importance of innovations and patents for entrepreneurial success is undisputed among economists and politicians. Our study, too, shows that companies with many patents have more financial success – measured in terms of EBIT margin – than competitors with fewer patents.

The importance of patents for entrepreneurial success is recognised similarly by the capital markets. Whereas some three decades ago the value of a company was determined almost entirely by its tangible assets, today more than half of the market value of listed companies is constituted by intangibles. And among those intangibles it is patents and other commercially protected rights that make up the lion's share. However, German accounting regulations have reflected the rapid transition to the knowledge-based economy to a limited extent only, with, as far as the integration of intangibles in corporate reporting is concerned, declarations of intent, but little more. Traditional German accounting as expressed in the German commercial code continues to prohibit capitalisation of internally generated patents (§ 248 clause 2 HGB); only purchased patents may be recognised in the balance sheet, and then only at their acquisition cost.

Over the medium term the increasing importance of intangible assets for corporate success is bound to lead to greater recognition in corporate reporting. The mandatory introduction of International Financial Reporting Standards for listed companies in the European Union as from the financial year 2005 created for the first time numerous opportunities to recognise intangibles generally and patents in particular. Furthermore, as from 2009 there will be a move by the German commercial code towards the principles of the IFRS with regard to the valuation of selected intangible assets, the bill on German Accounting Modernisation Act (Bilanzrechtsmodernisierungsgesetz, BilMoG), that will likely come into force on 1 January 2009, will put an end to the prohibition on recognition in the balance sheet of internally generated patents and will adopt the fair value principle.

A direct consequence of this development, not least in view of the rising number of occasions when valuation is an issue, is that market participants are increasingly calling for standard valuation methods and comparability of valuations between companies. It is against this background that PricewaterhouseCoopers has for some time been addressing issues of how to valuate the different kinds of intangibles (see insert).

A selection of PwC studies on intellectual property and intangible assets

- Intangible values and other soft factors in corporate reporting – Taking stock. Results of a survey by PwC and Prof. Dr. Thomas Günther (TU Dresden) on the consideration of intangible values in internal and external reporting of German companies. 2003, 36 pages.
- The practice of brand evaluation and management in German companies. Findings of a survey by PwC, Prof. Dr. Henrik Sattler (Hamburg University), the GfK Group (GfK Marktforschung) and Brand Association (Markenverband e.V.) on the status of brand evaluation in German companies. 2005, 28 pages. Download: http://www.pwc.de
- Valuation of human capital. Findings of a study by PwC on the potential uses of various methods of human capital valuation at DAX corporations. 2007, 46 pages. Download: http://www.pwc.de
- Exploiting intellectual property in a complex world. Findings of a study by PwC and the Economist Intelligence Unit on the present and future standing of intellectual property in global corporations. 2007, 76 pages. Download: http://www.pwc.com

The search for the best valuation methods has only just begun. The most promising will be those methods that are already widely used in companies, and whose scope is as universal as possible, i.e. ideally they should be applicable to all occasions on which valuation is sought and for all kinds of intangibles. The present study has therefore set itself the task of surveying the status quo of valuation of patents and technologies in the European companies with the most patents.

Structure and scope of the study

PricewaterhouseCoopers has conducted its study "The practice of evaluation of technologies and patents" in collaboration with the Institute of Technology Management at the University of St. Gallen, Switzerland, its Innovations and Intellectual Property Management spin-off BGW AG, and Shearman & Sterling LLP. The companies that were surveyed are all based in Europe and are among the 500 companies requesting the most patents from the European Patent Office. The survey was conducted in its entirety in 2007. Questionnaires were sent to 142 companies. Of these, 61 replied, i.e. the return ratio was 43 percent. More than half of the replies (54 percent) came from the IP departments, and about 28 percent of the respondents being from the R&D departments.

Most of the participating companies were in the industrial products (32 percent) and chemicals/ pharmaceuticals (22 percent) sectors. The latter are clearly in the lead in terms of the total number of patents held: about 58 percent of all patents (among those surveyed) are held by chemicals and pharmaceuticals companies. On average, the respondents hold 9,900 patents in 2,340 patent families and apply for 335 new patents annually. For the mean value of the financial data for all participating companies the findings are, calculated per annum: an average revenue of 9.5 billion Euro (median: 2.7 billion Euro); a profit before interest and taxes (EBIT) of 11 percent of revenue; an average research & development budget of 525 million Euro (median: 100 million Euro) and a patents budget of 9.5 million Euro (median: 1.5 million Euro).

B Significance of patents for the companies

Thesis 2

Patents are highly assessed but treated modestly

The high significance that research, development and innovation enjoy in the political, commercial and public spheres is reflected in the findings of this study. More than half of the respondents see innovations as one of the most important drivers of success of an enterprise (value 5 on a scale of 1 to 5). Together with the respondents that choose the second but highest value, more than 90 percent of those surveyed underscore the importance of innovations for corporate performance. However, this finding does not allow any direct conclusion to be made about the standing that innovations have as a whole, since the participants of the study came primarily from companies that are concerned with innovations in particular – a targeted survey of management in the finance sector might well generate somewhat different findings.

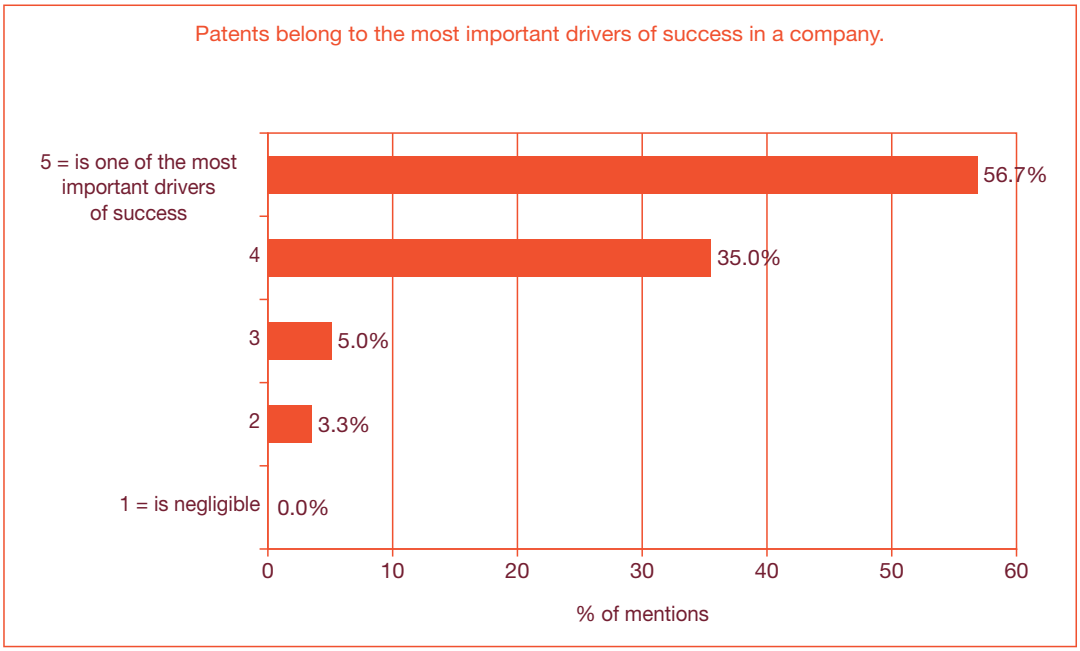


Figure 1 Innovations as drivers of success

An estimate of the direct influence of innovations on corporate results, however, confirms the prominent position they enjoy. Overall, innovative products are responsible for 66 percent of revenues and for 60 percent of profits of those surveyed. About two thirds relate to products and technologies with incremental innovations, i.e. the refinement of existing products, and one third to radical innovations.

Patents that represent a sub-segment of the innovation area are also assessed highly as drivers of success. However, here, in contrast to the importance of innovations, the emphasis is not on the highest but on the second highest value of the five-point scale.

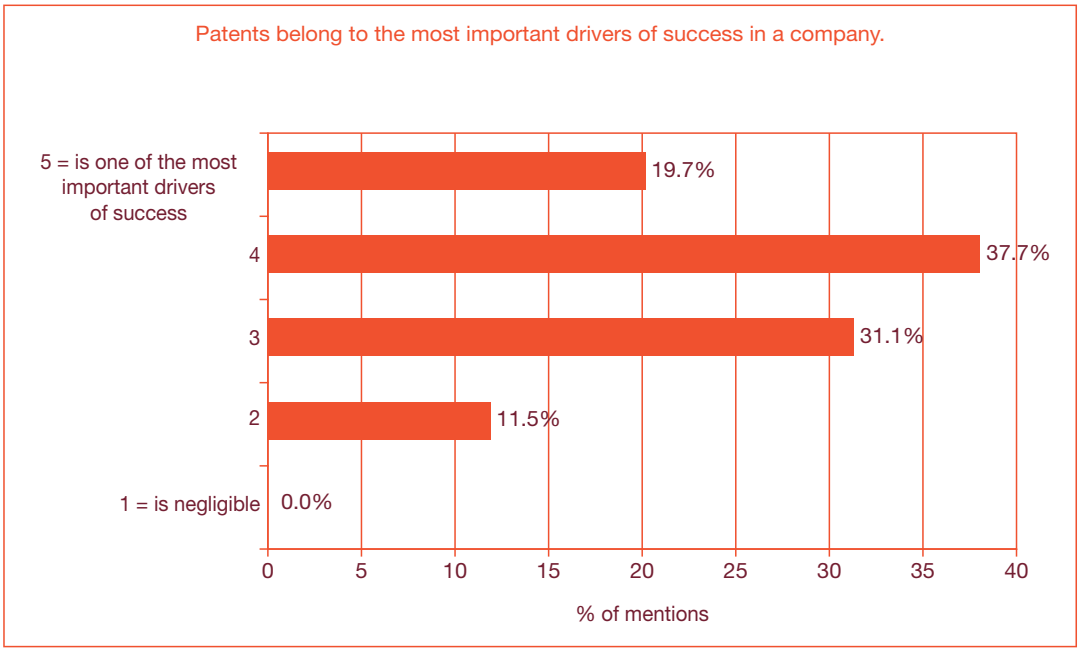


Figure 2 Patents as drivers of success

The survey “Exploiting IP”, that was conducted by PwC among managers from the most innovative sectors (software, communications, and technology) throughout the world in March 2007, confirms this finding. There 83 percent of all management personnel surveyed gave their assent to the statement that the management of intellectual property (IP management) is important or very important for the success of their enterprise. However, the regional breakdown of affirmation figures for Europe was 74 percent, which was the lowest among all survey regions.

These findings show that patent management has a high strategic importance for corporate success. It might be expected that this high strategic significance would be reflected in practice, too. But the picture that emerges is somewhat different: In actual handling of patent portfolios, it is not the strategic but the administrative function that has the upper hand. This is well demonstrated in the answers to the question of the frequency as to how often a valuation is needed: By far, patent valuations are made for the maintenance of a portfolio and for the reward of employee inventions, and they alone reach a mean of more than 3.5 on the five-point frequency scale.

Valuations triggered by capital market requirements, for instance for voluntary discretionary capital market information or for company finance, on the other hand, are seldom, with mean values of 2. In this case, a significant minority of those surveyed (between 20 and 30 percent) were unaware of whether valuations of patents had even been made in the company.

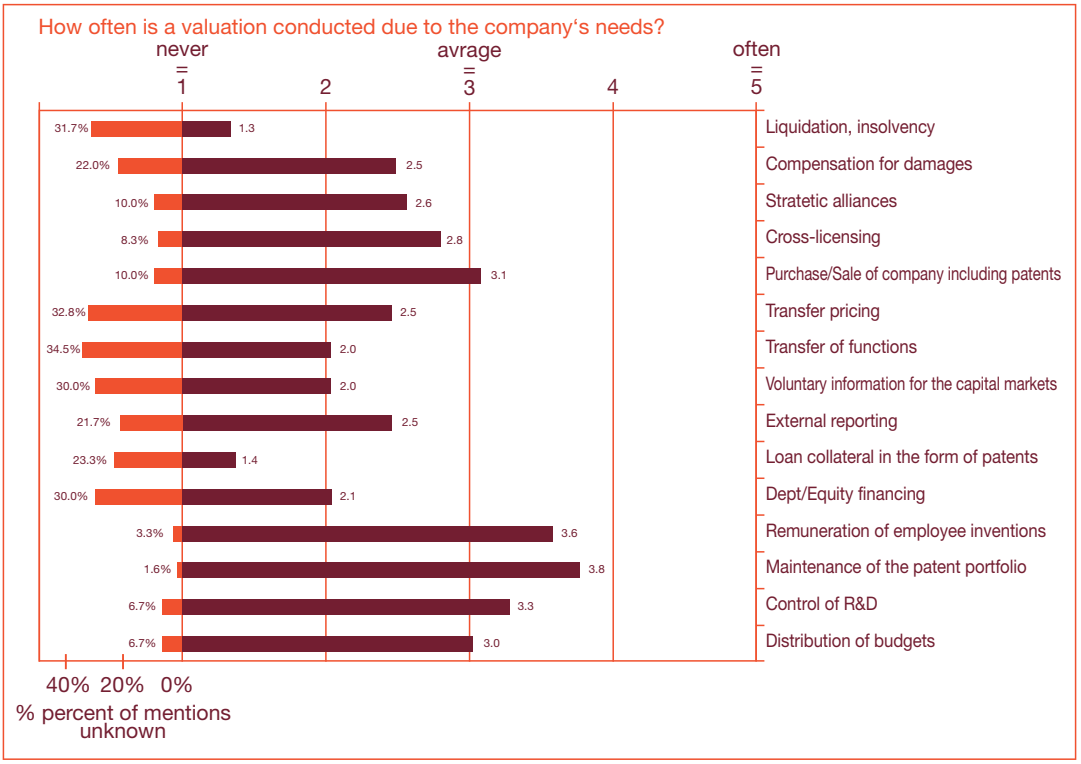


Figure 3 Occasions for valuation of patents and technologies

Another factor that speaks for the administrative rather than the strategic function of patent management is the assignment of the responsibility for patent valuation. Here it is only rare that the initiative is taken by the management responsible for the strategic positioning of the company. Most frequently by far it is the departments for intellectual property or for research & development that initiate and take responsibility for valuations of technologies and patents. It is only here that the theoretical mean of 3.0 (between 1 = never and 5 = frequent) is found. The subordinate role that capital market valuation occasions play in the companies surveyed is mirrored in the fact that the departments for M&A and for finance only rarely initiate the valuation of patents and technologies.

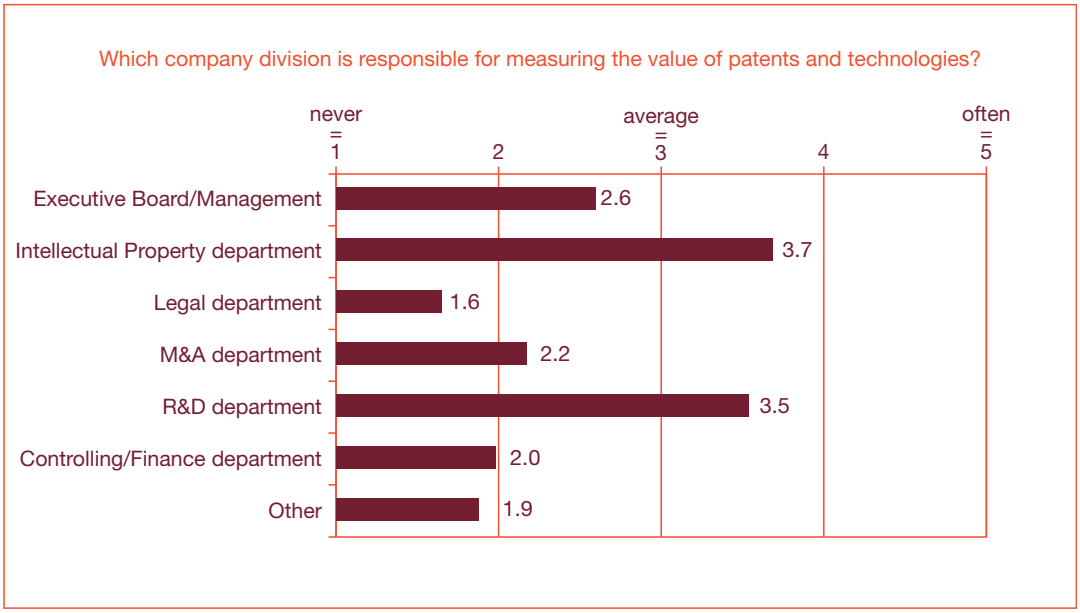


Figure 4 Company divisions responsible for patent valuation

C Unused value potential of the patent portfolio

Thesis 3

The nature and scope of the valuation occasions indicate that there is considerable untapped value

One of the essential preconditions for obtaining a patent for an invention is its commercial applicability. Although the patent offices do not examine whether an invention is actually implemented in a product, they do look to see whether it could be. In contrast to the situation faced by private owners of patents or small entrepreneurs, the companies surveyed for this study are not confronted with the question of how to get from the patent to the product: it is part of their core business to make patents from inventions and in turn to make innovative products from patents.

Nonetheless, the survey found that many of the existing patents are not used by the companies themselves. 36 percent of the respondents use less than 20 percent of their patents, and less than ten percent of the participants declared that they actually use 80 to 100 percent of their patents. In terms of total number of patents, licensing to third parties plays only a subordinate role, with 80 percent of companies stating that they license less than ten percent of their patents.

Even if, in addition to the patents used or licensed by the companies themselves, one counts those whose commercial purpose is not to be used but simply to stop competitors from using them, a large number of patents remains without commercial application, even among the patent-rich companies.

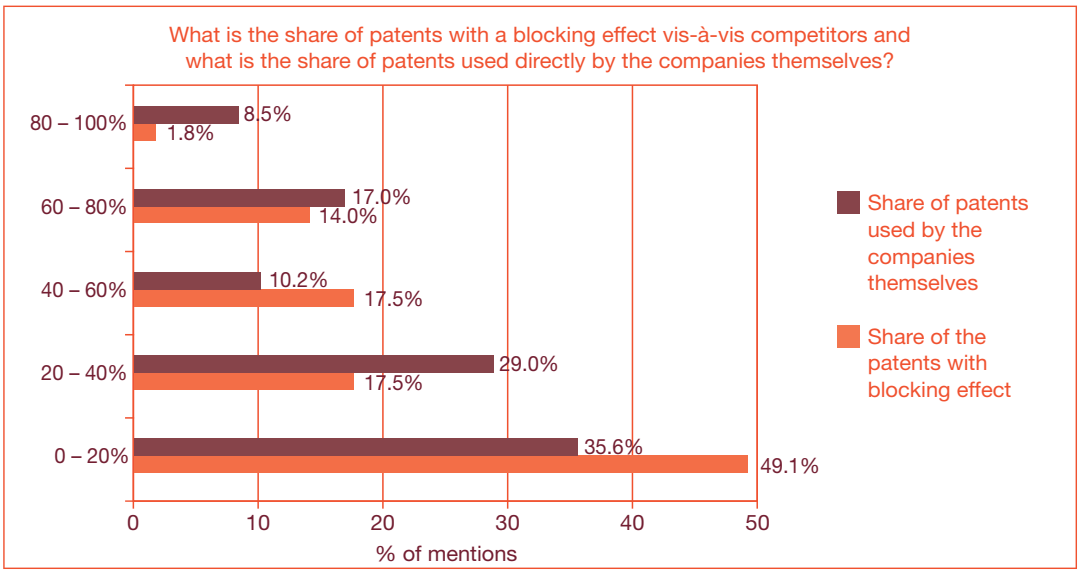


Figure 5 Patents with blocking effect and patents used by the companies themselves

Non-use of a patent that has been granted can well represent a commercially reasonable decision. This is the case in particular if the patent fails to offer sufficient added value, i.e., if the additional income that might be expected from using the patent is not in reasonable proportion to the additional expense required for using it.

However, the survey shows that, in a large number of the valuation cases, the potential or actual monetary value creation by individual patents or entire portfolios of patents is not even calculated. This is of course true in the first place of all those

cases in which non-monetary valuation methods are applied. But, even among the monetary valuation methods, some are not suitable for determining an added value figure, for example, the cost-based methods since they do not estimate present or future income from a patent, but only the costs that would arise for the company if it had to purchase or create the relevant asset anew.

Strategic decisions do not have to be based on a monetary valuation of the relevant alternatives. The objectives such as innovation or market leadership may be based on non-monetary valuation systems. The comparative preponderance of non-monetary methods as well as complete house-made valuation methods for patents and technologies has, furthermore, a historical root. Patents were assessed by companies at a time when most monetary methods did not exist or were only gradually coming into existence. Both Werner von Siemens and Thomas Alva Edison had to undertake patent assessments for their companies in the 19th century, whereas the monetary methods only came to the fore in the second half of the 20th century.

The main advantages and disadvantages of monetary and non-monetary valuation approach are summarised below:

Valuation approach	Pro	Contra
Monetary	Can be used for all valuation occasions. Has the potential of being standardised and is comparable in different companies. Can fundamentally be aligned to the needs of both the capital market and the company.	Many different methods Standardisation and comparability not yet fully developed
Non-monetary	Often tailored to the circumstances of the particular company Can easily be adjusted to changes in requirements	Not suitable for capital markets or accounting purposes Isolated solution

Table 1 Pro and contra of monetary and non-monetary valuation approaches

The non-monetary assessment approaches include the one-dimensional methods, for example the calculation of a single figure. Here different criteria of importance for the company are used (e.g. sales expectation, image boost, innovatory degree) in a weighting specific to the company to arrive at an overall point number, that is supposed to express the value of a patent for the company. In the case of multi-dimensional methods, various figures are determined, which are kept separate from each other, instead of being aggregated to form a single overall value.

One- and multi-dimensional methods are deployed mainly for management purposes: the aim is to provide the corporate or divisional management with a quantitative and qualitative overview of the state and development of the patent portfolio. Thirty-four percent of the companies surveyed use multi-dimensional methods for management purposes and 25 percent use one-dimensional methods (multiple replies were possible). On none of the other valuation occasions (balance sheet, fiscal, transfer, legal dispute) is one of the non-monetary methods used by more than 20 percent of the respondents.

About one fifth of the companies surveyed use in-house methods for non-monetary assessments. The reasons given for this are: individual adaptability to the circumstances and the market environment of the company; the high complexity of the company's patent portfolio; reduction in time and cost expense; and the necessity of developing an in-house scale for determining inventors' remuneration.

Similarly, cost-oriented valuation procedures are used more often than other monetary valuation methods for management purposes. This leads to a most peculiar outcome: the very people who should be especially well informed about the actual or potential contribution of patents and of the patent portfolio as a whole, namely the managers who are responsible for these matters, rarely receive the very information that would enable them to arrive at such a valuation.

This is all the more astonishing since the companies surveyed are very committed, in theory, to a value-oriented innovation management. In most companies in which there is a systematic innovative process, there is also a value-oriented innovation management. In answer to the question "Does value-oriented innovation management take place in your company?", one quarter of respondents gave the highest value of the five-point scale, and a further third the second highest. Only 12 percent of respondents gave a straight negative answer to this question.

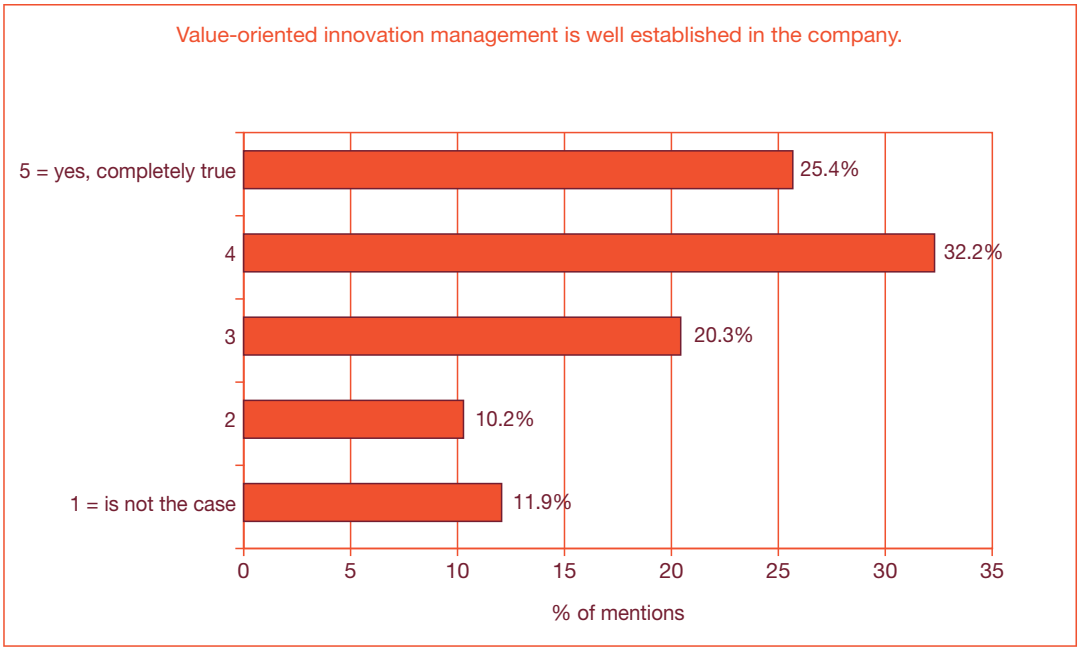


Figure 6 Value-oriented innovation management

There are various possible causes for the discrepancy between the high esteem in which value-oriented innovation management is held and the relatively rare application of valuation approaches that might determine the monetary value contribution of patents. They include:

- The confusing number of valuation methods that have been applied in the past
- The still insufficient standardisation of the methods and therefore the limitations of what is expressed in the findings
- The multitude of valuation occasions occurring in the company and consequent doubts about the universal applicability of individual methods

If in the medium term it should be possible to weaken or attenuate such objections by a further development of valuation methods, a great potential for the application of value-oriented valuation methods would open up for patents and technologies.

D Valuation approaches for patents actually practised in companies

Thesis 4

Capital-market oriented valuation approaches are the most widely used in companies

Since patents are one of the most important assets for innovative companies, this study looked at how far and on which occasions the most common methods for valuing intangible assets were used by the participating companies. The pre-selection for the methods to be examined here was made using the "Principles of the valuation of intangible assets" of the Institut der Wirtschaftsprüfer in Deutschland e.V. (IDW S 5) of July 2007. This standard lists the following eight methods (although the order of discussion below is different to that in the standard):

Cost-based approach

Two of the methods are cost-based. Here actual or future revenues from the asset under consideration are left out of account and the calculation is only of the cost that the company would face either to produce an exact duplicate of the asset (**reproduction cost method**) or to produce or procure a benefit-equivalent asset (**replacement method**).

Market approach

Two further valuation methods are based on market prices, i.e. an asset is valued in terms of its market price.

The first method here is a valuation using **market prices for sufficiently comparable assets in an active market**. However, an active market is only possible if all of three conditions are met: the goods being traded are homogenous; willing buyers and sellers can generally be found at any time; and the prices agreed on the market are known publicly. As a rule, in the case of patents none of these conditions is fulfilled: no patent is comparable to another; any market that exists is, in the case of patents, liquid and transparent to a limited extent only; and when patents are traded there is usually no disclosure of the price.

The **analogy method** tries to circumvent the problem of limited market activity for intangible assets. Under this approach an analogy is made between the observed price for a comparable item and the sought-after value of the intangible asset being valued.

Income-based approach

The other four methods belong to the income-based approach. For these methods the value of an intangible asset arises from its ability to produce future income, this income being described in the form of cash flows or, more precisely, the aggregate discounted cash flow (sum of future cash flows discounted to net present value) that it can generate.

The method of **direct cash flow forecast** involves discounting directly attributable cash flows using a risk-adjusted, asset-specific interest rate. This presupposes that the cash flow attributable directly to the intangible asset can indeed be determined.

The **relief from royalty** method involves determining what license payments the enterprise would theoretically have to pay if the intangible asset were owned by a third party.

The starting point of the **multi-period excess earnings** method is to note that it is only in combination with other assets that most intangibles generate cash flows and, for this reason, information on payments surpluses is generally only available for an aggregate of assets. It is imagined for the sake of the computation that the supporting assets, to the extent that they are necessary for the generation of the cash flows, are rented or leased from a third party. The theoretical fees for leasing the "supporting" assets are deducted from the sum total of the cash flows surpluses in order to arrive at the net contribution made by the asset under valuation.

In the **incremental cash flow method**, the future expected cash flows from the enterprise, including the intangible asset being valued, are compared with the cash flow of a fictional reference enterprise that either does not possess this asset or decides not to use it.

Of all these methods it is the relief from royalty method that is used most often by the enterprises surveyed. This was the only method to record a mean of just above 3 on the one-to-five scale of frequency of use. This preference for the relief from royalty method is no doubt due to its ease of use. Another practical advantage is that the key necessary data, such as comparable license fee rates, can be obtained quickly and inexpensively from numerous databases.

Two similar widespread methods (with a mean of more than 2.5) are the two market methods and the method of direct cash flow forecast. On the other hand, the two other income-based methods as well as the two cost-based methods play only a marginal role in the monetary valuation of patents.

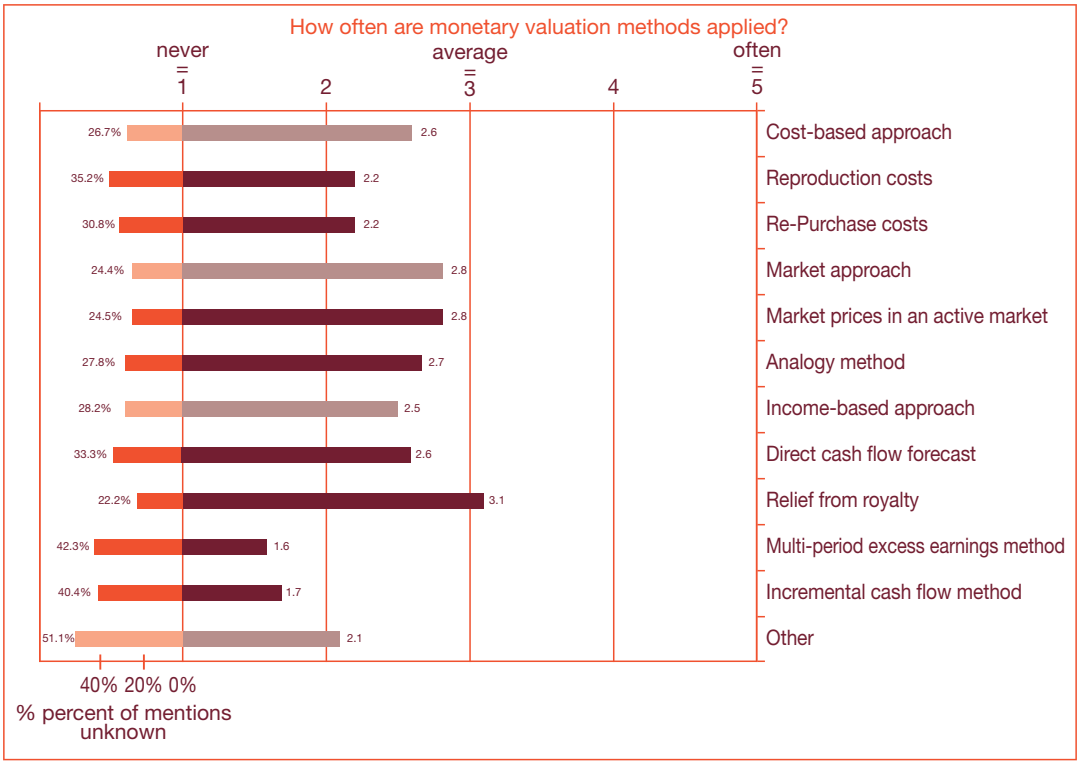


Figure 7 Frequency of use of monetary valuation approaches and methods

One of the main reasons for the many valuation methods in use, both monetary and non-monetary, and whether standard or in-house, is the large number of different reasons for conducting a valuation. In legal disputes involving the right to invoke patents, for instance, the methods used are often very different to those applied for accounting purposes: In the case of conflicts, market valuation methods are used most often, for management occasions cost-oriented occasions take the lead, and for accounting purposes the preference is for income oriented methods.

Although each monetary valuation method was chosen sometimes more frequently, sometimes less frequently, for any of the different occasions, it is noticeable that the distribution of the mentions was very varied. In the case of market methods the number of mentions fluctuated particularly strongly, with these being used very rarely for accounting purposes, but very often in legal disputes. The fluctuation is somewhat less marked for cost-oriented methods, which are used especially rarely to settle disputes, but are especially frequent for management purposes. The lowest fluctuation for the different valuation occasions was manifest with the income valuation methods. This indicates that cost oriented and market methods are used as a specialist instrument, whereas income oriented methods tend to cater for a broad range of functions. This is in conformity with the trend noticeable in the responses: companies that engage in valuations frequently resort more often to income oriented methods.

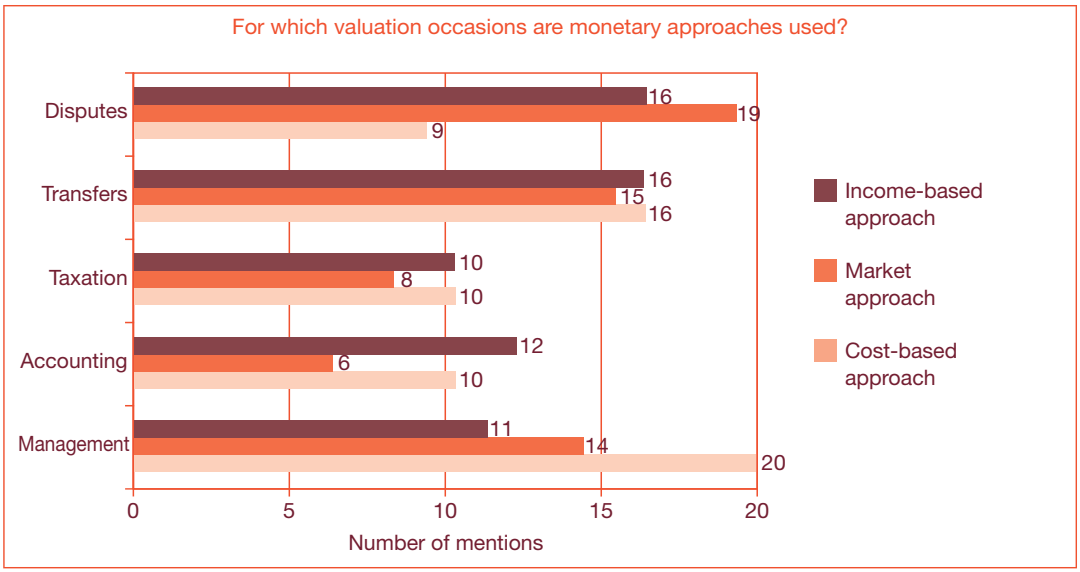


Figure 8 Application of monetary methods by valuation occasion

Valuation approach	Strengths	Weaknesses
Cost-based	Relatively easy to apply Results easily comprehensible Relatively little scope for interpretation	No statement possible about the future financial benefit Often based on historic data
Market approach	Very easy to apply when there are suitable active markets Reflects the market assessment	Few active markets exist for patents Limited range of comparable transactions High fluctuations in volatile markets
Income-based	Reflects the expected future financial benefit Corresponds to both (external) capital market requirements and (internal) requirements of patent management Can be used for all occasions It is possible to identify and model transparently the factors determining value Changing future expectations can be modelled in subsequent valuations	Relatively high expense in terms of time and information processing Large scope for interpretation

Table 2 Strengths and weaknesses of monetary valuation approaches

E Towards a generally recognised valuation approach

Thesis 5

Companies would welcome a generally recognised valuation approach

Whereas for many intangible assets the question of valuation has only arisen fairly recently, it has accompanied patents for more than a century. Following the institutional establishment of patents in the second half of the 19th century, they were quickly recognised as a key factor in the success of innovative enterprises. Hence they have long been a focal point for management and for those responsible for business divisions involved in research, development and innovations. The interest in internal information for management purposes was therefore high from the outset, while the interest in transparency for outsiders was low.

Similarly, since the end of the 19th century a whole series of further valuation occasions have come to be linked with patents. The beginning was made with national licensing for international patents: the genesis of the later AEG Group as the acquisition in 1881 by Emil Rathenau of the German license for the Edison incandescent filament bulbs, while later, in 1904, Siemens paid the then unheard-of sum of 1.6 million Mark for the national license for a US invention that made it possible to make telephone calls without debilitating disturbance. Other early valuation occasions were legal disputes about the infringement of patents and the setting of inventors' remuneration for company employees. This variety of occasions gave rise to many home-made valuation techniques for patents and new technologies.

Valuation for accounting purposes, by contrast, played a relatively modest role. Until recently, patents in particular barely put in an appearance as intangible assets in the financial reporting of companies. There was simply no obligation to produce a valuation of the patent portfolio in the balance sheet. Under the German accounting tradition as embodied in the commercial code, capitalisation of internally generated patents, indeed, is still forbidden (§ 248 paragraph 2 HGB); only purchased patents are subject to mandatory reporting in the balance sheet, at the amount of the acquisition cost only, and with subsequent amortisation. This means that for the majority of companies there is no recurrent occasion to engage in valuations which would otherwise lead, in the course of time, to a standardisation of the monetary valuation methods, similar to the standardisation in methods used to evaluate tangible assets.

Thanks to the introduction of IFRS, the situation has recently changed since, for the first time, there are now numerous occasions to seek valuation for intangible assets in general and for patents in particular (see inset). The mandatory introduction of IFRS accounting for listed companies in the European Union since the financial year 2005 has led to a steep rise in the number of occasions when companies must undertake a valuation.

Furthermore, from 2009 there will be a move by the German commercial code towards the principles of the IFRS with regard to the valuation of intangible assets. The bill on the modernisation of accounting rules (BilMoG), which is due to come into force in Germany on 1 January 2009, will end the prohibition on recognising internally-generated patents and simultaneously instigate the fair value approach.

Hence as from the financial year 2009 the question of the valuation of patents will affect not only listed companies, but indeed all companies operating in Germany. This will lead to an increase in the number of occasions on which valuations are required – and therefore, too, the need to apply monetary methods when performing the valuation.

Monetary valuation approaches are well accepted among the companies surveyed. 64 percent consider monetary valuation of innovation to be helpful or indeed very helpful for the management of technologies and patents, with only 6 percent rejecting this approach entirely. In assessing whether the monetary valuation of technologies and patents represents a reasonable addition to financial reporting, the opinions were less unanimous: 47 percent were in favour, 24 percent undecided, and 29 percent were against, though only 6 percent rejected this approach unequivocally.

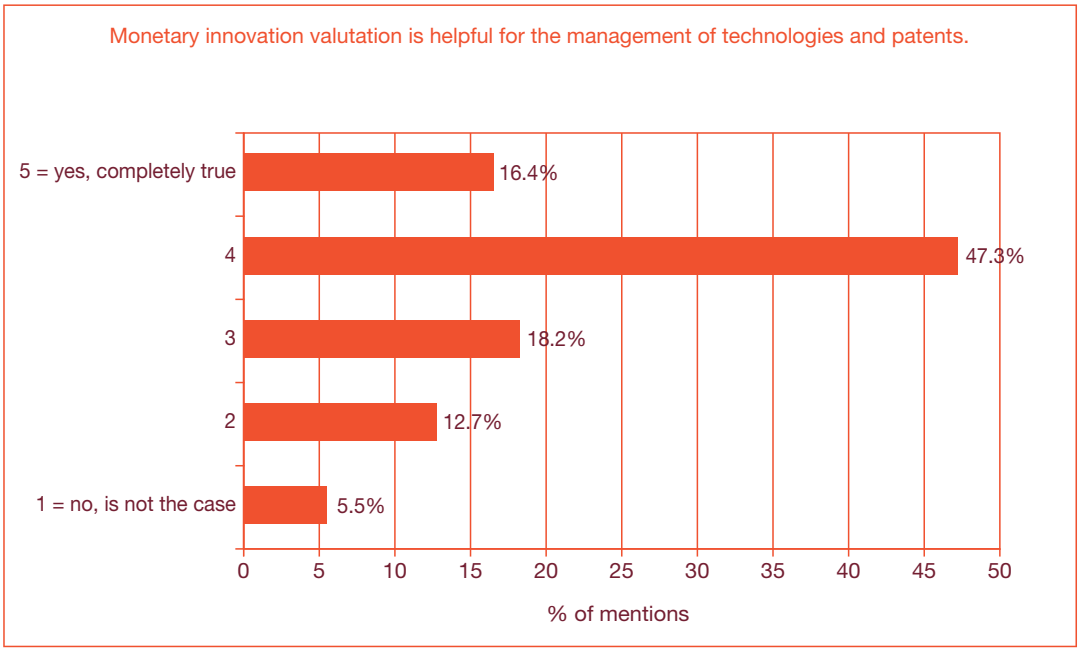


Figure 9 Monetary valuation of innovation and patent management

The study “Exploiting IP” from the beginning of 2007 indicates that there is a fast-paced development of the use of intangible assets in corporate reporting, albeit from a low level. Here 6 percent of management questioned in Europe stated that their company published information on its intellectual property as a discretionary addendum to the regular financial reporting. But within the coming three to five years, this figure is set to increase almost fourfold, to 23 percent. In all other regions of the world the starting figures are higher, although the growth rates forecast are lower than in Europe.

Valuation of patents is set to constitute a key factor in the valuation of intangible assets and intellectual property. Already in a 2002 survey conducted by PricewaterhouseCoopers on “soft” factors involved in financial reporting, the respondents considered patents to be the intangibles that are most suited for the application of monetary valuation methods. At the time, 65 percent of respondents considered monetary methods to be fundamentally suitable for the valuation of patents while 23 percent considered that only non-monetary methods could be applied: 12 percent were entirely against the valuation of patents. Although the questions asked in 2002 and those asked in the present study are not identical, the results, especially in view of the proportion of strict opponents of only 6 percent, indicate a rise in the acceptance of monetary valuation methods.

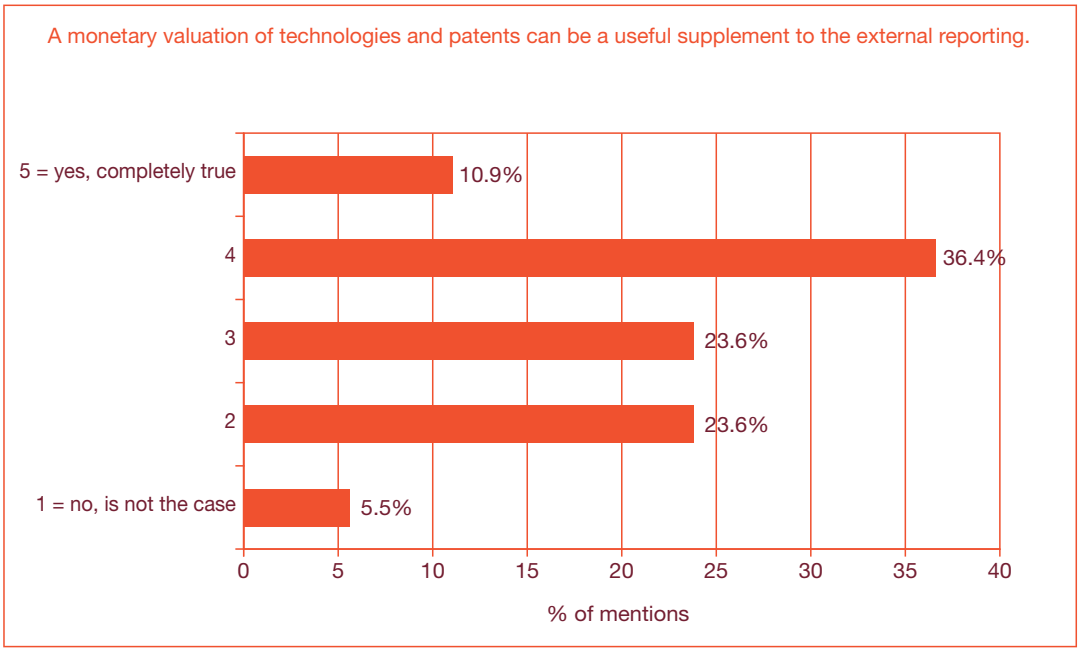


Figure 10 Monetary patent valuation and external reporting

Whereas monetary valuation methods enjoy a high level of acceptance among the companies surveyed, the question of the importance of generally recognised valuation methods receives a more mixed reply. 45 percent considered them to be important or very important for the monetary valuation of innovations and patents whereas 34 percent considered them to be unimportant or indeed very unimportant. The mean of 3.1 on a scale of 1 to 5 is only slightly above the value of 3 for those undecided.

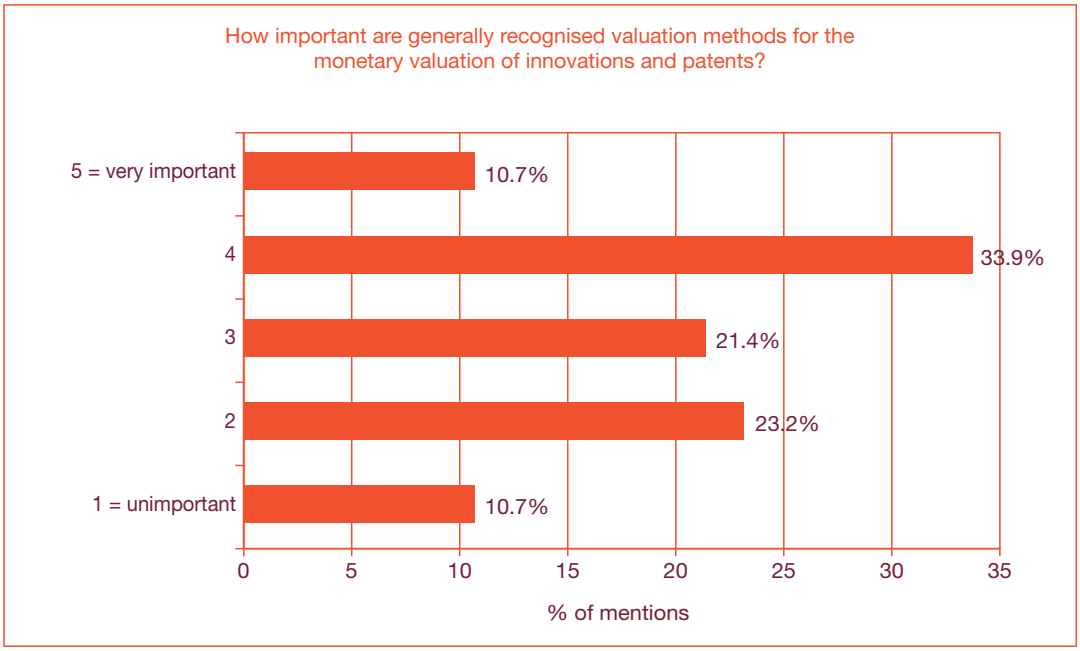


Figure 11 Importance of generally recognised valuation methods

The average of the replies to the question of whether the companies would resort to generally recognised valuation methods if they existed is 2.96. Although the number of those that would like to or very much like to do so (37 percent) is higher than that for those who would be reluctant or very reluctant to do so (34 percent), the number of those strongly opposed is twice as high as those who are strongly in favour.

Seven percent of respondents would be “very keen” to use generally recognised valuation methods and 14 percent would be “reluctant”. Obviously the advantages that derive from the existence of standardised and generally recognised valuation methods are not communicated intensively enough among the target group of patent-rich companies.

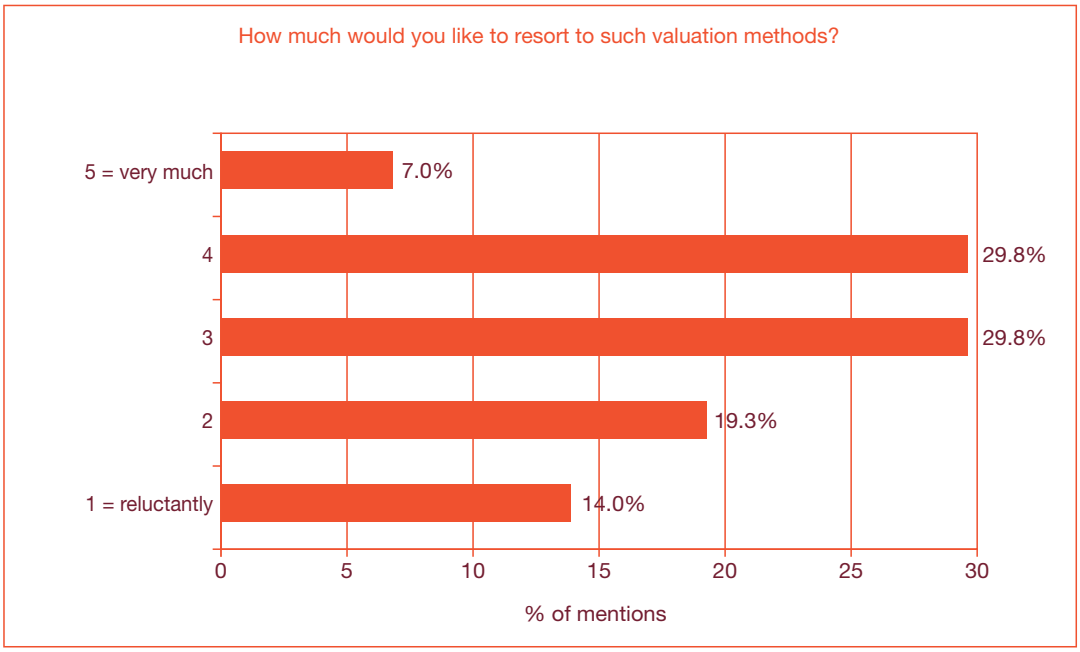


Figure 12 Interest in the application of recognised valuation methods

Intangible assets in corporate reporting

The reporting requirements on intangible assets are somewhat different in the financial section and the group management report.

In the case of the financial section, since 2005 the requirements of the International Financial Reporting Standards (IFRS) have applied for all listed corporations. When the act on the modernisation of accounting regulations (BilMoG) is passed into law in Germany, the rules for companies applying the commercial code will also probably come to resemble the IFRS approach. Three standards in particular are relevant for intangible assets: IFRS 3 (business combinations), IAS 36 (impairment of assets) and IAS 38 (on the definition of intangible assets).

The most important occasions for valuation of intangible assets arise when companies are purchased. Under IFRS 3 all the assets of the entity purchased must be valued at fair value as of the time of acquisition. Under IAS 38, this requirement also applies explicitly for intangible assets. Moreover, under IAS 36 the assets recorded in the balance sheet at fair value must at each balance sheet date undergo an impairment test, which is intended to judge the value on that date.

The discussion about the presentation of intangible assets in the group management report has a different point of departure. The intention in Germany is that the management report should become increasingly an instrument of value-oriented and forward-looking reporting. In its standard number 15 (DRS 15) the committee of the German Accounting Standards set out new requirements for the management report as from the year 2005.

The premise for these new recommendations on the management report is that any forecast of future results cannot be derived from financial data of a historic kind. For any forecasts to be plausible, they must be supported not only by market and monetary data but also by the features of the company that cannot or cannot yet be described in quantitative terms.

In the appendix to DRS 15 it is recommended that the descriptions of the individual business areas should also contain reports on the intangible assets of relevance. "This report," it goes on to say, "shall include an explanation of the disclosures with regard to the probable development of the group with its principal opportunities and risks." DRS 15 does not contain any elaboration of how the report is to be made – only the comment that the intangible assets should be presented in terms of their influence on the development of the group.

On the issue of how intangible assets should be valued, since July 2007 the "Principles on the valuation of intangible assets" (IDW S 5) of the Institut der Wirtschaftsprüfer in Deutschland e.V. has listed the relevant valuation methods and the principles for the judgement of the valuation occasion as well as on the documentation of the valuation report.

F Conclusion

Our society is unmistakeably undergoing the change from a production-based to a knowledge economy. Whereas only a hundred years ago products were made of readily perceptible, tangible components such as iron or wood, today the portion of knowledge integrated in the value of a product is often as high as 60 percent. Correspondingly, in recent years the economic significance of (patented) knowledge in companies has soared to new highs.

Although patents were originally aimed at providing legal protection for ideas, they have themselves become a commodity that is exchanged, traded or subject to legal dispute. A targeted and professional exploitation of technologies and patents can not only secure earnings, sideline competitors, and decide market developments and trends, it can also create asset values for a corporation. Moreover, the interest that has grown in recent years in capital markets in patents and technologies has given rise to new financial and development opportunities.

Hence the number of occasions on which patents and technologies need to be evaluated is bound to increase. The growing demand for a transparent valuation that can be compared with other valuations and understood by outside parties is being met by a tradition of valuation techniques stretching back several decades. Patents and technologies have long been subject to valuation for purposes of licensing, taxation and in particular for the information of top management. Our survey discovered that more than three quarters of companies also use non-monetary valuation techniques, and that a fifth of respondents make use of methods they have developed in-house.

The growing importance of patents and technologies for corporate success as well as for capital markets will increase the role of monetary valuation techniques in internal company use. The focus of such valuation techniques will be the future economic (monetary) benefit of patents and technologies, and many players are already concerned to obtain an appropriate set of valuation instruments.

The introduction of IFRS for listed companies in the EU (since 2005) and of the law on the modernisation of accounting rules planned for 2009 represent major moves towards standardisation of valuation methods. Under the draft of the BilMoG, § 248 (2) HGB will be repealed and in its place a requirement to capitalise internally generated intangible assets, including the development costs for internally generated patents.

Another move to standardisation is represented by the IDW standard “Valuation principles for intangible assets” which was approved by the Institut der Wirtschafts-prüfer in Deutschland e.V. (IDW) in 2007 and that specifies the business principles according to which intangible assets should be valued. As an open-ended standard, this covers initially the special considerations involved in the valuation of brands, but it is intended that it will later be supplemented with comments on other intangibles, including patents.

All of these endeavours are serving to create an increased awareness of patents and technologies. And the findings of our study, too, suggest that the companies would welcome a generally accepted valuation method. However, here it is important to recall that it is only intensive familiarisation with standardised monetary valuation methods that will lead to reliable results.

Contact persons

PricewaterhouseCoopers

Dr. Jutta Menninger
Partner
Elsenheimerstraße 33
80687 München
Tel.: +49 89 5790 6400
E-Mail: jutta.menninger@de.pwc.com

University of St. Gallen
Institute of Technology Management
Prof. Dr. Oliver Gassmann
Direktor
Dufourstrasse 40a
CH-9000 St. Gallen
Tel.: +41 71 224 72 21
E-Mail: oliver.gassmann@unisg.ch

PricewaterhouseCoopers

Dr. Ekaterina Lohwasser
Manager
Elsenheimerstraße 33
80687 München
Tel.: +49 89 5790 6400
E-Mail: ekaterina.lohwasser@de.pwc.com

University St. Gallen
Institute of Technology Management
Angela Beckenbauer
Research Associate
Dufourstrasse 40a
CH-9000 St. Gallen
Tel.: +41 71 224 72 24
E-Mail: angela.beckenbauer@unisg.ch

Shearman & Sterling LLP

Dr. Thomas König
Partner
Gervinusstraße 17
60322 Frankfurt am Main
Tel.: +49 69 9711 1000
E-Mail: tkoenig@shearman.com

BGW AG Management Advisory Group

Dr. Martin Bader
Managing Partner
Thurgauerstrasse 4
CH-9400 Rorschach
Tel.: +41 71 840 0831
E-Mail: martin.bader@bgw-sg.com

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