

Valuing Intellectual Property

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A useful compilation and discussion of approaches to valuing intellectual property

In the field of corporate acquisition, a great deal of attention is paid to the value of an acquired business. This value is embedded in the various components that comprise the business. Frequently, the value acquired is of an intangible nature.

Intangible assets may include good will, the benefits from contracts (such as employment contracts and agreements not to compete), and the use of acquired intellectual property. Intellectual property, which includes patents, copyrights, technical processes, trade names, trademarks, and other assets, adds value by providing the needed technology to operate the business, by helping to attract customers, or by providing other benefits.

In this article we will focus on the need to assess the value of such intellectual property and discuss ways of approaching the valuation process.

The value of intellectual property is derived from the economic benefit it provides to the business. This benefit is specific to the business and contingent upon how the intellectual property is used. For example, the use of the property may result in a less expensive production process and may generate cost savings not otherwise attainable. Or, the intellectual property may be a technological advancement within the industry and produce excess returns over competitors.

The value of intellectual property is not evaluated in the abstract. It must be assessed within the context of its use. In each instance the amount of the economic benefit from the intellectual property provides a reasonable estimate of its

value. This value and the method by which it is measured are important for a variety of reasons.

The most common reason for valuing any type of intellectual property is to determine the terms of a business transaction. Examples of these transactions include ownership transfer, purchase price allocation, intercompany pricing, best price analysis, and amortization.

Ownership transfer is the most frequent type of business transaction in which the value of intellectual property is an issue. Such a transfer may be effected through an outright sale or through licensing. If the transaction is a sale the intellectual property may be sold separately or as part of a group of assets. When sold separately the value of the intellectual property is measured by the amount paid.

The allocation of the purchase price becomes an issue when it is part of a group. Where a business combination is accounted for as a purchase of assets the assets may be written up to fair-market value. In this type of ownership transfer an allocation of the purchase price may be made to both tangible and intangible assets. An estimate of the value of such intellectual property assets is necessary to make the allocation.

A determination of value is also necessary if the ownership-transfer occurs through licensing. In this transaction the licensor/owner and the licensee/buyer negotiate the terms of the license based upon their respective assessments of the value of the asset to be transferred.

It is important to consider the contribution of intellectual property to the production process when establishing intercompany pricing policies. This contribution can be an important an input to the final product as the raw materials. And as such, a valuation of the intel-

lectual property and its contribution will permit the proper allocation of costs or cost savings.

• Infringement •

One way to quantify the damage done in infringement cases is through lost profit analysis. The courts have generally ruled that lost profits are entitled to measure a reasonable royalty in cases of unauthorized or wrongful use. A valuation is necessary to establish a reasonable royalty.

Another important reason to value intellectual property is tax planning. One tax strategy is to create a Delaware holding company ("DHC"), sell the company's intangible property to the DHC, and then lease the technology back to the affiliated entities. This specifically includes the cost of the technology in the cost of goods sold and shields the income from state taxes. Another tax consideration is that some intangible property is amortizable. The IRS will recognize an amortizable asset if the asset's life is determinable. Rev. Rul. 74-426 states:

"An intangible asset derives from experience when it is used as an aid in the production of income for a limited period, the length of which can be estimated with reasonable accuracy, such as through its use in the context of a depreciation allowance."

Some intellectual property meets all of the criteria established by this definition. Trademarks and trade names usually do not.

It is important when assessing the value of intellectual property to consider the definition of value. Generally, this definition should be specific and commonly understood.

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It should capture the economic benefit, according to the holder of the property. We suggest that fair-market value ("FMV") be used as the premise of value for intellectual property. FMV is defined as the price at which property changes hands between a willing buyer and a willing seller, when neither is under any compulsion to buy or sell and both have reasonable knowledge of relevant facts (Internal Rev. 20.2031-1(a); Rev. Rul. 59-60, 1959-1 CB 237). The best indication of the FMV is the amount of consideration paid in an arm's-length transaction for the same or similar intangible property under the same or similar circumstances. This definition is useful for trademarks and trade names but, since patents by definition are unique, it may be quite difficult to identify similar transactions.

Once the intellectual property to be valued is identified the appropriate valuation approach must be selected. The approach selected will depend on the specific characteristics of the transaction. Several different approaches to valuation are commonly used in practice. The three most common are the cost approach, the market approach, and the income approach. Each of these is described further below.

Cost Approach

The cost approach is the accumulation of all costs associated with the development or acquisition, and marketing of the intellectual property. These costs include research, experimentation and development costs, the costs of all models and drawings, as well as all related legal and application fees.

The cost approach as a valuation method, however, has several disadvantages. Cost does not necessarily equate to value. For example, if the intellectual property offers significant economic advantage in an active market, the use of the cost method might underestimate its value. But if development had been inefficient, lengthy, or the intellectual property had been through several iterations the use of the cost method might overstate its value.

Market Approach

The market approach is based

on the premise that transactions for similar assets in the market will have similar prices and that those prices indicate the underlying value of the assets. As noted above, a patent, for example, is a unique asset and consequently, comparable transactions may not be available.

Nonetheless, this approach can be useful to determine reasonable royalty rates for many types of intellectual property. For example, one can review existing licenses for a specific technology or other license agreements for similar technology in the industry, SIC filings, licensing publications that describe recent transactions, and individuals with licensing expertise as good sources of this information.

Income Approach

The income approach measures the discounted cash flows associated with ownership of the intellectual property. One common method to value these cash flows is the royalty savings approach. The royalty savings is the amount that a company that does not own the intellectual property would be willing to pay for its use. This amount could equal the cost of developing the technology internally, purchasing it from the outside, or licensing it. A royalty rate is used to measure the amount that would be paid for the use of the intellectual property. The value of the intellectual property is the present value of the royalty payments saved through ownership, i.e. the cost savings of ownership.

The following is an in-depth discussion of the royalty savings approach. This discussion is intended to acquaint the reader with the specific methodology as well as some of the general issues that are considered in valuing intellectual property. The specific procedures outlined for the royalty savings approach result in a value that can be verified independently. As such, the resulting value can serve as a reasonable basis for the negotiations between the parties. It should be noted that considerable business judgment is necessary in any valuation approach. This judgment must be based on the analyst's specific understanding of the intellectual property to be valued, the individ-

ual transaction, and the valuation process, and a general understanding of the business within which the transaction is occurring.

► Estimating Rate ►

The royalty savings approach begins by determining the base to which the royalty rate will be applied. This base can be anything that reasonably measures the utilization of the intellectual property. Commonly used bases include net sales, units of production, and savings afforded by the intellectual property and pre-royalty operating profits. Each of these possible bases has its own advantages and disadvantages.

The most commonly used royalty base is net sales. The advantages of using net sales include its easy measurement and verification, and the fact that it adjusts automatically for inflation. Its disadvantages include the difficulty in isolating the amount of net sales specifically relating to the intellectual property and the fact that it does not adjust for industry changes in profitability.

Another frequently used base is units of production. Units of production is also easy to compute and easily verifiable. However, it does not adjust for inflation or changes in industry profitability.

The cost savings afforded by the intellectual property may be used as the royalty base. Cost savings provide the most direct measure of the benefit and can easily be converted into a percentage of sales. Unfortunately, it is difficult to measure such savings and related estimates are inherently subjective and therefore difficult to verify.

Pre-royalty operating profits or cash flows can be used as the royalty base. Such amounts may be observed in the market place and adjust for changes in profitability. These amounts, however, are easily manipulated and introduce elements not germane to the intellectual property into the calculation.

The next step in the royalty savings approach is to determine whether or not the intellectual property has a measurable life and if so what that life is. Some types of intellectual property do not have

separate useful lives. It, however, a reasonable life exists then further analysis is necessary. If the intellectual property has a legal life, as in the case for patents and copyrights, and the legal life is expected to exceed the useful life, then the remaining legal life is the separate measurement date. If not, the useful or economic life must be determined.

Factors

Factors to be considered in estimating the intellectual property's useful life include the rate of technological change within the industry, the capital requirements for change, alternative technologies, competitive pressures, and economic changes. They may also include the life span of the product for which the technology is used and the likelihood of expansion of the product line.

The next step in the income approach is to establish an appropriate royalty rate based on the derivation of fair market value. The goal of this step is to determine the rate that equitably divides the cash flow attributable to the technology between a selling licensee, the licensor, and a willing buyer, the licensee. A preliminary royalty rate can be determined through a review of existing licenses for similar intellectual property. This rate is then adjusted after a comparison of the intellectual property to be valued to the intellectual property that is the subject of the existing licensing agreements. This review should focus on profitability, technological strength, and market potential as well as other more general concerns.

Analysis of the profitability of intellectual property includes a review of operating margins with and without the technology. The operating margin is the means of measuring over the cost of goods sold, selling and general expenses, and other operating expenses. It is an important indicator of profitability. The analysis also includes a review of the business risk assumed by the licensee and the capital investment required by the licensee.

The technological strength of the intellectual property is its relative

importance in the production process and its relative strength versus other existing technologies. The strength can be assessed by reviewing the characteristics of the property. Important questions to consider in this review include the following: Is the technology necessary to the primary process versus a secondary process? Is it the usual technology or a modification of an earlier technology? Are there alternatives available and if so, at what cost?

The market potential of the intellectual property is its potential as measured by its existing, commercial acceptance, the current total market size and market share of the technology or product, and an estimate of its future market potential.

Other more general factors that will influence the royalty rate include exclusivity, the time frame of the agreement and the relationship between the negotiating parties. An exclusive license will have a higher royalty rate than a nonexclusive license since the economic benefits will accrue to only one licensee. The time frame of the agreement is relevant for two reasons. First, the position of the intellectual property in the life cycle of the technology or product and the rate of related technological change will be a factor in estimating value. Second, the age of the intellectual property will be a factor in estimating value since technology can become outdated and in the case of patents and copyrights the protected life may expire. Finally, the relationship between the licensee and the licensor will influence the royalty rate.

This modified royalty rate is then

multiplied by the selected base over the estimated life to calculate the total royalty savings. This amount represents the benefit that would accrue to the licensee if a deductible business expense and for this reason the calculation should be made on an after-tax basis. The calculated amount is discounted to its present value using an appropriate discount rate. To determine this discount rate, the time value of money, the inherent business risk and the fact that these payments have been calculated on an after-tax basis should all be considered.

Finally, the present value of tax savings resulting from the amortization of the intellectual property over its remaining useful life, if applicable, should be calculated and added to the royalty savings calculated above.

Table 1 presents an example of a patent valuation using the royalty savings approach. The sales attributable to the patent is used as the royalty base and a royalty rate of four percent is assumed. The royalty savings are calculated and a tax rate of 48 percent is applied. The after-tax royalty savings are discounted using a discount rate of 10%, which generates the present value of the cash flows. The present value of the tax savings due to amortization is estimated and the total fair market value of the patent is calculated.

In summation, this article has re-emphasized the value of intellectual property as an important consideration in a variety of business transactions. This value exists because each property provides real economic benefits to the owners of the prop-

Patent Valuation Royalty Savings Approach (\$000's)

	for the years ending December 31,				
	1991	1992	1993	1994	1995
Sales Attributable to Patent	\$500.0	\$550.0	\$580.0	\$570.0	\$580.0
Royalty Rate	4.0%	4.0%	4.0%	4.0%	4.0%
Royalty Savings	20.0	22.0	23.2	22.8	23.2
Taxes at 48%	4.8	5.6	5.8	5.6	5.6
After-Tax Royalty Savings	15.2	16.4	17.4	17.2	17.6
Present Value Factor at 10% ¹	0.909	0.826	0.751	0.681	0.621
Present Value of Cash Flows	\$13.7	\$13.6	\$13.1	\$11.7	\$11.0
Total Present Value of Cash Flows					\$52.6
Present Value of Tax Savings Due to Amortization					9.5
Fair Market Value					\$62.1

¹ - Adapted from *Accounting*.

Table 1

erty. An understanding of the potential of value for each property and how that value can be realized significantly adds to the negotiating ability of a potential buyer or seller.

We have described the three most commonly used approaches to valuation: cost, market, and income. The valuation approach se-

lected and the factors given primary consideration require considerable business judgment and experience. We have used the royalty savings approach as an example of the income approach to highlight some of the considerations that arise when valuing intellectual property. This method demonstrates the procedur-

al and evaluable nature of valuation approaches. It is not, however, appropriate for every business transaction or type of intellectual property. The other approaches are each appropriate under different circumstances and can provide a reasonable and supportable initial basis for negotiation.