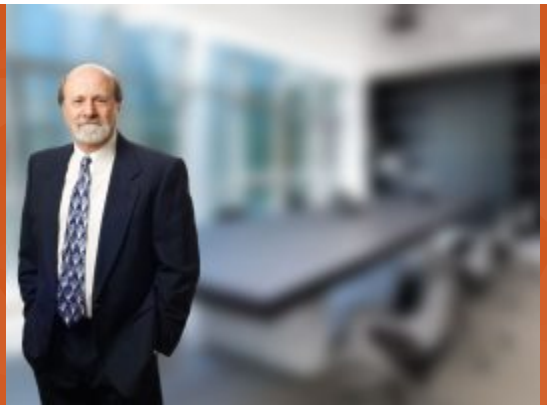
Setting Values and Royalty Rates for Medical and Life Sciences Businesses



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Abstract

Founders and funders of medical and life sciences companies must often determine the value of particular technologies and establish appropriate royalty rates to charge for their use. This article will describe the three basic methods used to determine the value of intangible assets; summarize the 25% rule and the 5% rule for setting royalty rates; and identify the key business factors that must be considered in any final determination of an appropriate royalty.

Introduction

Among the most frequently asked questions by founders of medical and life science companies are: How do we determine the value of our intellectual property, such as for purposes of potential sales and lending transactions? Also, how do we determine appropriate royalty rates for our technologies?

Comprehensive answers to these questions are beyond the scope of this paper (though often within the expertise of licensing professionals). However, this paper will state some basic valuation and royalty-setting principles that, though general in nature, are quite useful when valuing or licensing technology.

Valuing IP: Three Methods

There are three primary methods used by licensing professionals to assess the value of intangible assets. These are the Cost Method, Market Method and Income Method.[1] With all of these methods, good data are critical in determining the appropriate benchmarks.

Cost Method (or "Look Back" approach). One important factor in determining value is the cost incurred in developing or purchasing the relevant technology or intellectual property. (A related alternative is the "replacement cost" approach, where the focus is not so much on the historical development cost, but the current cost to provide an equivalent substitute.) If you paid $4 million to purchase or develop a novel technology for your business, you would be disinclined to sell it, or grant an exclusive comprehensive license to it, for less.

However, to say you'd be disinclined does not imply you'd be wrong to do so — indeed, selling for below development cost is often the only reasonable tack. Consider the above scenario, where it cost $4 million to develop a technology. Suppose that, as a result of changing markets or new information, you determine that the present value of the total revenues/return expected from

this technology is under $2 million. Further, suppose that a company needing your technology to round out its product line offers you $3 million. You should not refuse this offer simply because it is less than your cost of development.

While the cost of development should not (necessarily) set a floor on the seller's sales price, it often sets a ceiling on the buyer's purchase price. In other words, rarely will buyers pay more for technology/IP than it would cost to develop IP of equal desirability and usefulness (though buyers might pay a premium for quick market entry).

Of course, as seller you may use the cost of development to argue for a particular price. However, as the above makes clear, if the purchaser balks you probably should not walk away from the deal merely because the amount offered is below your development cost. Clearly, more important is the amount of revenue the technology can be expected to produce. This leads to the second valuation method.

Income Method (or "Look Ahead" approach). A second critical factor in determining value is estimating the revenues the technology is likely to produce, and savings it is likely to generate, and comparing this to the anticipated cost to generate the same revenues or savings from other sources. Illustrated simply: if investing $4 million in Treasury notes will safely generate total annual returns (principal and interest) of $300,000 over 20 years, it would normally be foolish to spend $4 million to develop a technology that will generate only $200,000 in total annual returns (revenues, savings, increased corporate value, etc.) over the same period.[2]

Actually, reference to bonds, bills or bank rates would be unusual. Rather, when relying on this method to determine a reasonable purchase price, one more often compares the discounted cash flow expected from using the appraised technology to the discounted cash flow expected from the next best alternative.

Market Method (or "Look Around" approach). A final method for determining value is to learn the price at which comparable technologies or businesses were sold recently. Again, if a competitor with inferior technology recently sold for $2,500,000, would you accept an offer to sell your business for any less? Critical to this approach, of course, will be (i) determining what transactions are comparable — appraisers look to such factors as industry, efficiency, and protectability — and (ii) obtaining current, reliable data. Of course, what you are seeking are examples of non-compulsory transactions between unrelated parties.

There are other methods used to value developing or established technologies, often using sophisticated economic models. However, each is generally a variation of one of the above three approaches.

Setting Royalty Rates: The 25% Rule

Several decades ago it was suggested that, as an empirical matter, a large percentage of royalty negotiations arrived at a royalty rate that equaled approximately one-quarter to one-third of the licensee's anticipated pre-tax profits derived from the technology.[3] Of course, most royalties are calculated against net revenues rather than licensee profits, so this rule must be used to yield a rate that will be applied against revenues.

Thus, in industries (such as software) where profit margins have historically been high, royalty rates are comparatively high. For example, if the parties anticipate that the licensee will have profit margins of 80%, the royalty paid to the licensor should be in the range of 20-30% of net revenues (before taxes). In contrast, in fields where profit margins are low (such as the food industry), royalties will be low: For example, if a licensee expects to generate additional profits of 4% by deploying some invention (say, a novel food preservation technology), the royalty should be within the range of 1-1.5% of net revenues earned from deploying that technology.[4]

This historically descriptive rule need not always carry prescriptive weight. Indeed, a recent

article argues that "These rules or standards do not take into account specific circumstances that will determine the actual value of the patent at issue. No consideration is given to the number or value of economic alternatives or the incremental value of using the patented technology over other viable alternatives."[5] This is indeed correct; and as discussed below, there are many factors that should be taken into account in the final determination of value/rate, so none of this should be viewed as non-negotiable gospel. In addition, a recent Federal Circuit case, *Uniloc v. Microsoft*, held that the rule is "fundamentally flawed" and could no longer be relied on in determining a reasonable royalty in patent infringement cases.

Still, in most cases reference to the 25% rule will help the parties understand where, historically, rates for the particular technology or invention (or, for that matter, copyrights or trademarks) have typically ranged, which should keep the parties from making unreasonable proposals (unless they have good cause to believe that theirs is an exceptional situation). In other words, most licensing professionals will use the rule to establish a range from which the negotiated royalty rate is likely to emerge … and which probably can be considered reasonable if it does.

Setting Royalty Rates: The 5% Rule

In terms of determining royalties, it so happens that in many industries — from medical devices to electronics and food — negotiations frequently yield a royalty of 5-6% of net sales. For example, a recent study concluded that the "median royalty rate across all industries was 4.5 percent."[6] (This ranged from a low of 2.8% in the Food industries to a high of 8% in Media and Entertainment.)[7] Therefore, when in doubt one can often assume that a royalty in this range will be reasonable.[8]

Setting Royalty Rates: Business Factors

As indicated above, none of these valuation or rate-setting rules are inflexible, and their application usually requires that numerous factors be taken into account. Among the factors most savvy negotiators and appraisers consider are the following.

- *Importance*. Is the technology a breakthrough or core product, or is it merely an ancillary product or minor improvement?
- *Uniqueness*. Is the associated intellectual property (patents, copyrights, etc.) strong enough to keep this solution special?
- *Stage of development*. Can the invention be used immediately or will it require substantial R&D or regulatory clearance to be commercialized?
- *Risk*. How certain is it that the solution will work as expected?
- *Profit margins*. Can this invention command high margins, or does the industry or infrastructure (e.g., support needs) keep the margins thin?

For example, a 2001 survey by Medius Associates Limited, a U.K. consulting firm, determined that "industry average" royalties for pharmaceuticals in the pre-clinical stage ranged from 0-5%, while royalties in Phase I were 5-10% and royalties for "Launched products" were 20+ %.[9] The web site of Novelint, a technology brokerage firm, proposed that pharmaceuticals with pre-clinical testing may be worth 2-3%, pharmaceuticals with clinical trials 3-4%, FDA-approved drugs 5-7%, and drugs with market share 8-10%.[10]

The point is not that studies and samples disagree on the exact numbers — though indeed they do — but that all studies make clear that approved and proven products command higher royalties than untested and unapproved products.

Setting Royalty Rates: Legal Factors

Also important in determining the royalty are the associated contract terms. For example, one must consider the following factors.

- *Exclusivity*. Are the rights granted sole and exclusive, so only the licensee can exercise them; or are they
shared potentially with the licensor or others? Obviously, the former has greater value and should com-
mand a higher payment.
- *Advances*. Will the licensor require payment (at least partially) in advance, or are payments entirely de-
pendent on passage of time and/or licensee earnings?
- *Transferability*. Can the licensee reassign and/or sublicense the invention?
- *Market scope*. In how many fields can the invention be exploited? That is, can it be used for any and all purposes, or in several broad fields, or only for a limited application? For example, if the licensor owned the patent on the compound for aspirin, could the licensee use it however it wished (thus, for pain relief, as an aid to circulation, and for all other purposes); or only for pain control (human or animal); or only as an analgesic recommended for humans aged 12 and over? (Do not ignore possible off-label uses when considering this factor.)
- *Territorial scope*. Is the license worldwide, or is it geographically limited (and if so, how narrowly)?
- *Duration*. How long will the rights last? Under what circumstances can the licensor terminate the grant?

Conclusions

Though experts will often deploy both higher mathematics and substantial market research to establish values and set royalties, the above guidelines should give every business person useful insights into the underlying logic and background considerations that ultimately produce a value for intangible – and often unique and intellectual — assets.

If you would like to discuss setting values and royalty rate issues, please feel free to contact **Howard G. Zaharoff**.

Footnotes.

1. For a comprehensive discussion, see Robert F. Reilly and Robert P. Schweihs, *Valuing Intangible Assets* (McGraw-Hill 1999).
2. There are many aspects of return on investment – generated revenues, anticipated savings, overall increases in company value (real or perceived) – that should be considered. For a detailed discussion of the income method, in the context of valuing a biopharmaceutical collaboration, see Charles T. Hardy, *Quantitative Deal Valuation and Optimization in the Biotechnology and Pharmaceutical Industries: Introduction and Modern Tools of Quantitative Deal Structuring and Decision Analysis*, J. BIOLAW & BUS., Vol. 7, No 1, 2004.
3. See Robert Goldscheider, John Jarosz and Carla Mulhern, *Use of the 25 Per Cent Rule in Valuing IP*, 37 LES NOUVELLES 123 (December 2002). Goldscheider was apparently one of the first licensing experts to write about the rule, which he notes had been in use, in some form, since at least 1938, id at 124.
4. See Peter J. Cronk, *From Labs to Riches*, THE LEGAL INTELLIGENCER (March 24, 1997):

"By way of example, in industries where competition is strong and profit margins are low, such as the automobile and semiconductor industry, a rate of 0.5 to 3 percent is common. In the computer field, a typical royalty rate is in the range of 3 to 5 percent. In industries where profit margins are known to be relatively high, such as in the medical device and pharmaceutical field, royalty rates have consistently been in the range of about 8 to about 18 percent."

5. Mark Berkman, *Valuing Intellectual Property Assets for Licensing Transactions*, 22 THE LICENSING JOURNAL 16 (April 2002).
6. Goldscheider et al., at 132.
7. See also *University Technology Transfer: Questions and Answers*, The Council on Governmental Relations, November 30, 1993, Question 5: "Royalty rates range from less than one percent (for some process technologies) to perhaps eight percent (for a patented compound with a significant market). The majority of royalty rates are in the 3% to 6% range, based on net sales."
8. "Often" is not always. Based on a database of patent infringement decisions maintained by KPMG, the authors of a recent article wrote: "Overall…approximately 60% had reasonable royalty rates in the range of 5% to 19.9%. The remaining 40% of the cases were split evenly between … rates less than 5% and … rates greater than or equal to 20%" Jennifer L. Knabb and Michael J. Jeffords, Trends in Patent Infringement Damages, 21 IPL NEWSLETTER 22 (Spring 2003) at 27. Clearly one should not assume too hastily that a 5% or 6% royalty is reasonable in a particular case; see the discussion in the text that follows this note on the many factors that should be taken into account.
9. *Royalty Rates: Current Issues and Trends*, http://www.medius-associates.com/Resources/Royalty%20Article.pdf.
10. Harold A. Meyer III, http://novelint.com/royaltyrates.html. These findings are also quoted in "CPT page on Royalties on patents for health care inventions," http://www.cptech.org/ip/health/royalties, which contains references and links to several other studies.