Determining the Value of IP Assets

Real Options Provides Real Results

By: Ray Clark, CFA, ASA

DECEMBER 2013

"If this business were split up, I would give you the land and bricks and mortar, and I would take the brand, and I would fare better than you."

- **John Stuart, former CEO of Quaker Oats**

Historically, patents, trademarks, copyrights, and other forms of IP were considered as merely legal instruments to protect innovation, not as a separable asset to be monetized. However, as the information economy has developed, IP has emerged as a principal source of competitive advantage and has contributed significantly to the creation of shareholder wealth.

Monetization often starts by assessing the value of an IP asset and toward this end there are many techniques available. Among these, the Real Options Pricing methodology can enhance the IP valuation when key variables are identified and estimated with accuracy. And, when coupled with the income and other valuation approaches, options thinking can guide financial and strategic decision making.

An Emerging Asset Class

An analysis of the *Fortune 500* companies shows that in 1975, over 60% of a company's market value was represented by their *tangible* assets. Today, however, that percentage stands at just 25%! As a result, the need to understand the true value of IP as an emerging asset class has developed new meaning. Indeed, the need for accurate valuation of IP assets is manifest in a variety of situations, including evaluating a potential merger candidates, strengthening positions in technology transfer negotiations, assessing commercialization opportunities, financial reporting under GAAP and many others.

Traditional Methods of Valuation

Income Approach

Income approaches focus on the future cash flow derived from a particular piece of IP. As with all income valuations the need to accurately forecast future cash flow is of paramount importance. The following variables are needed when using an income approach:

- An income stream either from product sales or licensure of the patent
- An estimate of the duration of the patent's useful life
- An understanding of patent specific risk factors and incorporating those into the valuation
- A discount rate

Unlike most enterprise or fixed asset valuations, intellectual property assets have their own set of unique risk factors, including:

- *New Patent Issuance*: New patents can make existing technology obsolete or, more likely, allow for another competitor in the same space. This is where a patent landscape, for example, can yield significant benefits;

- *Patent Challenges/Declared Invalid*: An issued patent remains open to attack for invalidity, and it is a common defense for an alleged infringer to assert that the patent is invalid;
- *Patent Infringement Suits*: Licensees could be held liable and ultimately pay three times damages. Due diligence is key in this area and if performed correctly should reveal any potential problems of overlapping or concurrent claims. Despite due diligence, however, it is estimated that over 43% patent claims ultimately turn out to be not unique.[1]
- *Trade Secrets:* Some patents are virtually worthless without the necessary trade secrets;
- *Foreign Governments failure to comply with Patent Cooperation Treaties:* This is a major issue for software patents, many of which are pirated in foreign countries and sold into the world market.

Discounted Cash Flow (DCF) Method

The discounted cash flow approach attempts to determine the value of the IP by computing the present value of cash flows, attributable to that piece of IP, over the useful life of the asset. Unlike an enterprise DCF valuation, terminal values are rarely used, as the useful life of a patent is typically a finite period of time. Since 1995, patents expire 17 years after issuance or 20 years after filing. While this does not imply that patents cannot have value after 17 years, it usually implies some limit on the patent's value beyond this point. At expiration, competing identical technologies can enter the marketplace, and hence, valuations of patents will vary based on the degree of post expiration cash flows assumed. Aside from these nuances, analysts will use the methodology to forecast free cash flow and develop an appropriate discount rate to apply to the IP cash flow.

The benefits of the DCF method are its ability to compare values among different patents, likely availability of many of the required inputs from the firm's financial statements and market information. A drawback of DCF is that it does not capture the unique independent risks associated with patents. All risks are lumped together and are assumed to be appropriately adjusted for in the discount rate and the probability of success, rather than being broken out and dealt with individually (i.e., such as legal risk, technological risk, piracy, etc.) Further, often DCF fails to consider dependencies on properties held by others. In roughly 40 percent of cases, patents depend on other patents or property held in the public domain.

Relief from Royalty Method

The Relief from Royalty ("RFR") method is a DCF valuation technique that begins by forecasting the income that a company would be "deprived" of, if it did not own the intellectual property in question but was required to rent it (i.e., license it) from a third-party, instead. The royalty rate represents the rental charge, which would be paid to the licensor if this hypothetical arrangement were in place. The ability to determine an appropriate royalty rate depends upon the specific circumstances and requires the identification of suitable comparable transactions and prices involving third parties. As with other income approaches, an appropriate cost of capital or discount rate also need to be derived. The RFR method is intuitive in that the value of a property is defined as a rental charge other companies would pay to use it. One significant drawback of the RFR method is that the ability to generate "rent" is assumed, when in reality one may never materialize. The plain fact is that some patents may be of little value and thus are not capable of being licensed.

Real Options Method

The Real Options Method ("ROM") recognizes that a patent has intrinsic value based on its projected cash flows discounted at an appropriate opportunity cost of capital for the owner of the patent. Additionally, the ROM

[1] David E. Martin, "Insurable Patents? Global Metrics for Actuarial Patent Risk Management," Conference on Growth, Prosperity and Patents, Danish E.U. Presidency, Aalborg, Denmark, October 28, 2002.

incorporates the value associated with the uncertainty inherent in a business and the active decision making required for a patent-based business strategy to succeed. The ROM values these items using the Black-Scholes option-pricing model, and the inputs for the model include:

1. **Underlying Asset Value** The present value of the property's future cash flows over the life of the asset
2. **Exercise Price** The present value of the fixed costs that must be invested to commercialize the product or to maintain the patent's strength
3. **Time** The time until the patent expires *NOTE: Future benefits that continue past the time of patent expiration are not considered.*
4. **Volatility** The standard deviation of the growth rate of the patent's cash flows
5. **Risk-free rate** The risk-free U.S. Treasury rate over the remaining life of the patent
6. **Dividends** Reduction of the option's duration due to competitive action, unforeseen delays, or other risk factors

The primary advantage of the ROM is that it accounts for the value associated with the uncertainty of cash flows and the ability to manage the patent investment. Like the DCF, the ROM values the stream of cash flows but it also accounts for acquired knowledge. This method provides a more complete evaluation than the DCF or RFR methods, which only capture cash flows and static fixed costs.

The primary disadvantage of the ROM is that there is often an inexact mapping of the assumptions underlying option pricing theory and the real option application. For example, is the standard deviation of the growth rate of patent cash flows log-normally distributed? Further, as noted earlier, the option value of a patent can be reduced or eliminated by a third party filing and contesting the claim.

Summary

As intellectual property grows in its importance, managers must understand not only the methods of valuing these assets, but also the unique risk factors associated with intellectual assets. Each valuation technique outlined has its strengths and weaknesses, but as is true with enterprise valuation there is no right or wrong valuation approach. However, it is wise to use several of these methods when valuing a specific IP asset. This provides differing viewpoints on the underlying asset value and is a useful check for consistency in assumptions.

Valuation Expertise

As the information economy grows, IP will continue to be an increasing source of competitive advantage and shareholder wealth for many companies. In addition, the financial reporting, tax and regulatory environments continue to evolve. As a result of these factors, there has emerged a critical need for independent, robust opinions of value that will withstand scrutiny within a variety of contexts. VALCOR is uniquely qualified to help companies with their IP and intangible asset valuation needs by providing comprehensive solutions that are based on substantial experience and reputation for integrity and independence.

Ray Clark is the Senior Managing Director of VALCOR Advisors, LLC, an independent valuation services firm with offices in Orange County, CA, San Francisco and Phoenix, AZ. He can be contacted at (949) 644-8022 or by email at Rclark@valcoronline.com.