BUILDING VALUE

A Business Valuation Newsletter for Business Owners and the Professionals Who Advise Them

Recognizing and Analyzing Promising Intellectual Property

Whether in a large corporation, university, or high-tech startup, the ability to recognize and extract value from new ideas in the life sciences is becoming increasingly important. Although each of these organizational structures may be different, there are general principles of discovery, protection, and development that apply to all of them. The value of an early-stage, intellectual asset is largely determined by its strategic potential, susceptibility to being leveraged with follow-on developments, and confidence in the asset's ability to create a competitive advantage for the next-in-line customer.

Confidence in the quality of the asset's protection is important in decreasing this customer's perceived risk, while leverage and strategic potential are used congruently to maximize customer's desire to invest. To maximize the value of an early-stage idea, it must be analyzed from several perspectives, developed in a value-added fashion, and often strategically transferred at the right time.

Although the art of early stage idea analysis may appear to be complex and somewhat ambiguous, the process can be dissected into relatively discrete steps that allow a layperson to approach the analysis objectively and logically, regardless of the topic or industry. New ideas always begin with an inventive step. Each inventive step has something that distinguishes it from known ideas, and, while it is difficult to predict when these steps will occur, companies must take advantage of them when they do. Every field - from science to engineering to business - has its manifestation of the inventive step, and each industry utilizes its versions of the inventive steps differently.

Some industries may develop new financial projection strategies (e.g., real option analysis) to build a competitive edge, while other industries such as electronics manufacturing may use new computer chip designs to provide consumers with superior performance. There are very few industries, however, that depend on intellectual discovery development, protection, and commercialization more than life sciences. The life sciences develop products that operate in very complex systems, usually resulting in high research and development expenditures and low barriers to competitors imitating the ultimate products. Without proper protection from competition, life sciences companies generally cannot fund the pursuit of future intellectual discoveries.

CRITICAL ISSUES

Our discussion focuses on the initial decision-making paradigms that surround a new idea at the time of creation. Unfortunately, historical sales data and manufacturing costs may not be available to help determine the future value of early-stage ideas. Instead, early stage ideas are often valued using a variety of comparative tests and hypotheses. In order to save developmental

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time and money, critical issues associated with each idea must be identified early in the developmental process. Four types of critical issues related to early-stage idea analysis are feasibility, marketability, methods of protection, and development/commercialization. This article discusses feasibility and marketability.

FEASIBILITY

Feasibility is largely determined by the operational limitations of a company. Before determining the best method(s) of extracting value from a life sciences idea it is necessary to address the limitations of the company's business model. Public universities, for example, are typically unable to protect ideas through trade secrets because universities are not in a trade or business and their mission is usually to disseminate information. On the other hand, for-profit companies that rely heavily on organization-specific techniques may prefer to protect processes, like cooking times, temperatures, and formulations only through trade secrets.

A thorough understanding of a company's business model and its limitations is necessary before a discovery can be analyzed for value. How a company can extract value from an idea - and how much value it can extract - will largely depend on how protection and transfer of intangible assets are accomplished within the model. Some variables to consider include budgetary limitations, organizational structure, legal limitations, contractual obligations, and company priorities. Each should be examined objectively in detail prior to analyzing a specific discovery. By knowing internal limitations, decision makers will be better equipped to screen for marketing, protection, and commercialization strategies that best fit the business model.

MARKETABILITY

Marketability is largely determined by the external environment. In the life sciences, asking the following series of questions can be very useful in assessing the preliminary marketability of an idea. First, is this technology a solution to a problem, or a solution in search of a problem? This question can be reframed in different forms, for example "where is the pain?" or "will the dog eat the dog food?" These types of questions ultimately address potential demand for products and should be asked with the assumption of technological feasibility. This assumption should be challenged later on at an appropriate time, but starting with a technological best-case scenario is useful in determining efficacy of potential applications of products. If products fail this first test of what important problem is actually solved by an idea, then technological feasibility becomes moot.

Second, what motivates the next-in-line customer of the resulting product? Demand for potential products can be estimated many ways from database searches to questionnaires, but the most critical initial demand question relates to the immediate customer. This is particularly true when attempting to license a technology. Even if a company develops the idea for its own industry, the idea will have to pass many internal roadblocks on the road to full development. This is not to downplay the importance of the end-market data because this ultimately drives development, but rather to recognize explicitly that there must be a viable path to the end consumer.

Third, what value does the idea provides to each customer in line all the way to the end consumer? This can be stated in phrases like "people need…" or "people want…", and "because of this discovery people will do…" For example, doctors and patients want to know how a cancer diagnostic tool will discriminate among types of cancers when medical treatments vary by type. The value of a cancer diagnostic specific to a certain type of cancer is therefore directly associated with the additional knowledge provided by a particular diagnostic. If the treatments are identical regardless of the specific type of cancer, then a diagnostic provides no additional information content with respect to those types.

Fourth, how much will the end customer pay to solve the problem? By working backwards up the value chain from the end payer to initiator, knowing this dollar value will help to determine the profits that can be made at each segment of the value chain. Segment profitability is particularly important in the healthcare and life sciences industry where Medicare and insurance companies have large buying power and standards of treatment are often subjective and debatable. In this environment, somewhat superior products that are significantly more expensive than the competitive industry standards - for example, serum cancer diagnostics compared to mammograms for breast cancer detection – may have difficulty penetrating markets despite slightly better performance.

Fifth, what are the supply side hurdles? Answering this question involves consideration of such issues as technical hurdles, investment limitations, physical distribution limitations, and paradigm changes of our idea. Some of these issues (e.g., investment and technical development limitations) are more affected by project feasibility whereas others are more affected by external markets. This question may, too, best be answered using value chain analysis and working backwards from the end consumer back up the distribution and manufacturing chains, up the regulatory process, to the current lab bench where a discovery was made. This process helps track what

steps are needed for a product to reach full commercial potential, identify the amount of work necessary to complete each step, and set minimum benchmarks of success and cost for each level.

Sixth, how well do the demand and supply sides match up? In answering this question it is important to review issues such as hurdles in the supply chain, next-customer and end-consumer motivations, and technical hurdles for making this particular technology work. Any serious disconnects between the demand and supply sides must be resolved before proceeding further to determining how best to protect and develop a new discovery as intellectual property.

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General Benchmarks Help Determine Cost of Capital

I had a discussion with a valuation professional the other day that I swear I've had one hundred times before. It went something like this: "How can you determine the value of a small, closely held business by looking at a bunch of much larger publicly traded companies? The public companies are so much larger than the private company that it just makes *no* sense."

Of course, the same valuation professional has no qualms about using the data from Ibbotson, Duff & Phelps, or some other resource to derive an equity risk premium, even though the publications derive their data from the very same general source that was so easily discarded earlier.

We'll save the discussion of this inconsistency for a future article. Instead, we will attempt to answer a similar question, namely: Is it relevant to use cost of capital data from the public market to value small, privately held companies? The short answer is not just *yes*, but *heck, yes*!

We business valuation professionals seem to forget that the historical roots of business valuation theory stem from real estate appraisal theory, which has always been about reference points. Simply put, if we know what a three bedroom house on the next block sold for last week, it seems reasonable that by using the "comp" as a reference point, we can determine the value of a two bedroom house on this street.

Perhaps it's an oversimplification, but when we value a small business, aren't we just comparing it to a "bigger house"? Such a comparison results in the following differences (among others) between "small houses" and "big houses" listed to the right.

By recognizing the existence of these key differences and others we can adjust for them in the valuation. Obviously, most of these differences make the small business investment a riskier proposition than a similar investment in a big company.

It is important then to remember a few additional reference points, namely, what we call in our shop the "investment spectrum." The spectrum lists equity returns for investments at different risk levels.

By initially comparing our small company to the different "houses", we can generally conclude that an appropriate return on our "house" would fall between small cap publicly traded stocks and venture capital investments. While there may be small companies that should fall outside of this range, they would be rare. Although analysis is required to determine where our company falls in the spectrum we can at least be confident that it falls within a reasonable range.

It may seem somewhat heretical to suggest that we should determine a range of equity returns for our small company prior to performing an in-depth risk analysis. However, experience tells us that the vast majority of the small companies that we value do, in fact, fall within the range we suggest.

Whether we use Ibbotson, Duff & Phelps, or some other data source for our discount rate build up, it provides us with a meaningful starting reference point. By using the data, we are able to "maximize objectivity" through the use of empirical information. However, we still maintain the ability to use our judgment, whether through a summation method, total beta method (promoted by Butler Pinkerton), or some other method, to determine the subjective company specific risk premium.

In conclusion, it makes complete sense to use the same data sources to value small businesses that we use for large businesses. We must simply remember the reference points within the investment spectrum and determine where our "house" falls in the spectrum.

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Larger Businesses

- Revenues generally over $50 million
- Some outside owners
- Typically C corporation
- Non-owner management
- Entity and operations entirely separate
- Company expected to survive current owner(s)
- Company operates as a business institution
- Often more than one location

Smaller Businesses

- Revenues generally under $5 million
- Inside owners
- Typically S corporation, proprietorship partnership
- Owner-family member management
- Entity and operations inseparable from the owner(s)
- Company may not survive current owner(s)
- Company operates more as an association of individuals/ practitioners
- Generally, one location

FEATURED CASE

CITATION

Estate of Axel O. Adler, Deceased, Anna Axina Adlerbert, Administrator, Petitioner, v. Commissioner of Internal Revenue, Respondent
T.C. Memo 2011-28, January 31, 2011

OVERVIEW

Although the decedent executed grant deeds transferring undivided interests in his property to his children, the Tax Court determined the transfers were testamentary in nature, and, therefore, the value of his 1,100 acre property in Carmel, California, was includable in his estate under IRC § 2036(a)(1).

THE FACTS

Axel O. Adler (the "Decedent" or "Mr. Adler") owned property ("Rancho Aguila" property) consisting of approximately 1,100 acres in Carmel, California. On December 8, 1965, Mr. Adler executed a grant deed that transferred undivided one-fifth interests in the Rancho Aguila property to each of his children as tenants in common. He received no consideration for the transfer.

However, the deed expressly indicated that Mr. Adler was to retain "the full use, control, income and possession of [Rancho Aguila] and every part thereof for and during" his natural life. The Decedent continued to live in the Rancho Aguila property, while none of the children did. Mr. Adler paid no rent to the children and was free to alter, improve, or maintain the property as he saw fit without consulting his children.

In 1991, one of the Decedent's daughters transferred her interest back to her father, although neither Mr. Adler nor his daughter executed the quitclaim deed.

After Mr. Adler died on June 20, 2004, the daughter executed a grant deed to her father's estate to complete the 1991 transfer. Ultimately, the estate asserted this transfer indicated the Decedent only owned a one-fifth tenant-in-common interest at his death, not the entire property.

CONCLUSION

Based on the facts as presented, the Tax Court determined the 1965 transfers were testamentary (i.e., transfers made in a will, which would only come into effect *after* death). In particular, the Tax Court noted that Mr. Adler controlled, retained enjoyment of, and maintained the Rancho Aguila property. Because the transfers were testamentary and because Mr. Adler retained possession or enjoyment, the Tax Court determined that the full, undiscounted value of the Rancho Aguila property was includable in Mr. Adler's estate under IRC § 2036(a)(1). Therefore, the May 2005 transfer to his estate (which would have resulted in the estate owning an undivided one-fifth interest and the interest likely would have been valued with fractional interest discounts) was irrelevant.

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TAX COURT CASE TAKEAWAY

Grant deeds which expressly state that the transferor reserves "the full use, control, income and possession of [the Property] and every part thereof for and during" the transferor's natural life may fail IRC § 2036(a)(1).