

IP EVALUATION, VALUATION & PRICE Q & A (5/5)

The Q&A herein are excerpts from "Technology Commercialization Manual. Strategy, Tactics, and Economics for Business Success." (www.tlearningcenter.com). Notation after the heading reflects the (# of excerpts/total Q&A).

The Q&A are for information only. Seek legal or accounting advice for specific situations.

1. What information gathering services are most often used?

The results of an informal poll are as follows:

NERAC - 12

DIALOG - 4

University library services - 2

Other – 5 (included in the 'other' category were government sites, big \$\$\$ services, and 1 or 2 people plugging their own services)

2. How long it takes to bring a non-prescription drug such as a painkiller to the market? How should one assess the market potential/valuation of the IP other than use of AUTM's Valuate worksheets.

- a. Traditional DCF analysis, per se, is not the greatest way to value a license. OTOH, it's a very helpful mechanism to value only the future cash flows to compare licenses where the timing and size of those flows differs. A recent example...

An individual attempted to license (License #1) a couple of issued patents to an existing, publicly-traded company. The faculty inventor then decides he wants to do a startup. OK. So we take the original license, cash flows, royalty, etc. and mutate them into a license (License #2) we feel is more appropriate for an early stage start-up with little cash. Plug the flows and timings from Licenses #1 and #2 into Excel and compare via NPV. This is a very helpful way to get two completely different licenses to objectively look the same.

The discount rate for early stage projects can be as high as 80%, meaning that anything beyond 3 years out is more or less a crapshoot. The best way to value projects is through real options, but that's pretty hairy for most of us because you cannot get the discount rate right. The internal rates required for research, development, or final commercialization will be different. You can, however, look for comparables in terms of like companies. If your licensee is publicly traded you can get the betas (and therefore back into a semi-valid DCF analysis) through available sources like Yahoo!

However, that all the valuation in the world is worthless if you don't have a licensee with which to share all your nifty valuation calculations. In the end, the value of a technology is only what the market will pay for it. The rest of the analyses are for you to convince yourself that the market should listen to you...

If the compound has to go through clinical trials, then the compound will generally take the length of the patent term until it reaches the over-the-counter market. While patent rights are in effect it would be unlikely to make it a non-prescription compound.

- b. You may be looking at this in a somewhat ineffective way. Valuate, as well as other methods that use discounted cash flow analysis (DCF) are not appropriate tools for most early stage University developed technologies, other than to establish an upper bound on valuation. The reasons are two fold:
1. Valuate assumes, and most other DCF users assume also, that the discount rate should be adjusted for "risk" of the project. This is both theoreticly and

practically flawed. I will not restate what the financial literature has discussed at length, but will point out that "risk" as used in DCF refers to a specific type of financial risk, akin to beta in stock market models. It has nothing to do with project risk, which should be addressed outside DCF calculations.

2. If you have an early stage project (for instance, a new diagnostic marker or a drug lead with in vitro data only), it is very difficult to predict the course of development, the ultimate product market, patient group, cost of goods etc. The models are only as good as the data that go into them, so if you really have no good idea regarding relevant inputs, you will then have little confidence in the outputs from the models.

It is for reasons like these that the licensing of early stage technologies is an art as much as a science. Late stage stuff is easy. You know the remaining hurdles, you know the payoff, so what you negotiate is the split of financial rewards (well, it's not quite that easy ..) With early stage, you frequently do not even know where the development will end up. You don't know the scope of patent claims that will ultimately be allowed. You don't know the financing/reimbursement environment 5 years out.

- c. Consider relying less on valuation, and more on finding prospective licensees. You can do a 5-minute back of the envelope calculation that will tell you whether you should put any time in at all (assume the best case for everything, what is the value then?)

3. How should one establish intellectual property value?

- a. There is a lot of uncertainty for those inventions not yet on the market, and some consultants make a living out of evaluating technology.

For technology not yet on the market (if it's on the market then you have your royalties as an estimate), a simple, easy method is just to tally up the patenting (and maybe copyright costs - although they are much smaller) costs of your IP portfolio. This method doesn't tell you the value of your intellectual property (IP), just what you spent to protect it.

You also might want to estimate the replacement cost (i.e. the R&D funding) to create the invention. Most researchers know the cost of their project, although not all of the R&D may be related to the invention. If you have a lot of inventions, this approach may be impractical.

The valuation of intellectual property assets--even the recognition that they ARE assets, is a hot area. An excellent starting point is the book that came out in the U.S. this January called "Intellectual Capital: The New Wealth of Organizations" by Thomas Stewart, a reporter for Fortune Magazine who has been watching the field grow for several years. It was published in the states by Doubleday/Currency, which claims on the title page to have a branch in Sydney (and Auckland). The appendix compares and contrasts a dozen methods proposed by economists and accountants and even a licensing specialist or two (Wes Anson, in particular). Although the focus is on recognizing IC in companies, much of the thinking and extensive references are very relevant to universities.

- b. The valuation must be based on the following:
 1. *Cost to date of the IP.*
 2. *Estimate of net profit potential over IP's first three (3) years on the market.* If the IP relates to a product in the pharmaceutical sector, the timing might be five to seven (5 to 7) years.

Market penetration models can be constructed for every new product. If the product will be satisfying a clearly untapped, large market (virtually no competition), it follows that revenues and growth will be significant. However, if the market is

highly fragmented, entrance and growth patterns will be different but could be predicted. Yet, if the major portion of the market is dominated by a handful of players, then market penetration patterns are going to be very different (rather discouraging.) Experts make a fairly good living doing this type of work.

3. *Barriers to entry*, i.e. the relative strength of the IP in the given market. The stronger and tighter the IP, the higher the profit and other benefits. The life cycle of a brand new computer related product is about one to two years, max today. Several years ago, products had a significantly longer life cycle.

These are some of the factors. Unfortunately, there is no "cook book" recipe for this issue. Solutions exist but require specialized expertise. In short the important issues that need to be considered (not in order of importance) are:

- evolution stage of IP,
- similar market products and outcome of commercialization,
- NPV based on future estimated earnings (if quantifiable),
- The reason for the valuation,
- The investment to date in the IP,
- tax credits that may be available,
- commerciality of the IP, and
- the type of entity that owns the IP.

With reasonable probability you can get fairly close. Frankly, IP is not valued until it has a clearly identifiable income potential and only then. Prior to this point the outcome of any valuation is questionable.

4. When you are transferring your intellectual property (let's say a discovery of a potential drug) how do you go about valuing it for the purposes of taking back equity in a start-up. Also assume that your institution is the 100% owner and that the original inventor is not going to be part of the equity in the start-up.

Consider it as a discounted Net Present Value of what a reasonable licensing fee would be. For example, if a reasonable license fee in the future would be \$1,000,000 per year and that it can be discounted at 5%, then the value to this point is \$20,000,000. Discount this number by the probability that it will actually be a commercial success. For example, figure this hypothetical at a 1% chance of success and therefore the right number would be \$200,000 for the start-up equity.

Valuation of early stage intellectual property is an iffy proposition. The error margins for assumptions are wide and the results of valuation can vary widely. If your employer is considered a founder in the company, a better approach would be to negotiate for an equal share of founders stock in exchange for your equity with a license at reduced royalties and payments since, if the technology is successfully developed, your equity will increase in value.

A common theme in the propaganda promoting S.507 is that the act of inventing is valueless. Large companies seem to feel that contribution of producing an invention has value. This is a common rationalization used to denigrate the inventor's contribution. Historically the market has assigned a value to the inventive process which is usually from 1% to 10% of the factory wholesale.

5. How do I assess what technologies I have?

There are a number of ways to assess the technologies, but one of the key aspects is to determine what kind of *real* improvement the technology provides over existing technologies and how close the technology is to being commercially viable; i.e. what quantifiable benefit does it provide for cost, time savings, complexity, etc. and how entrenched is the existing technology in the market. In a capital intensive field, the last point can be incredibly important. Normally it is prudent to complete two technical and business feasibility studies for every promising Intellectual Property (IP).

The first study is exploratory yet complete enough to establish if the subject IP warrants further investigation and allocation of resources. If the IP passes the first test, then determine what requirements the IP needs to satisfy and by when in order to take another, more thorough look at its technical and business merit. Upon successful completion of these two hurdles, the subject IP is considered worthy of its own business plan for development, manufacture and/or commercialization.

A majority of IP would never pass this phase if they were to be evaluated correctly, thereby wasting valuable, scarce resources that could have been better applied to the truly worthy IP. Develop your own proprietary templates to minimize such pitfalls and significantly increase the likelihood of correct IP evaluation.