

Open Book

A recurring feature
by John T. Ramsay, Q.C.

A review of current publications relating to the field of Intellectual Property licensing, transfer and tools therein.



“Valuation and Pricing of Technology-Based Intellectual Property” (“Valuation”) by Richard Razgaitis

2003 John Wiley & Sons. Inc.
ISBN 0-471-25049-X

“Dealmaking Using Real Options and Monte Carlo Analysis” (“Dealmaking”) by Richard Razgaitis

2003 John Wiley & Sons. Inc.,
ISBN 0-471-25048-1

“Valuation” is Razgaitis’ second edition of his Valuation book but it is substantially revised. “Dealmaking” is a new standalone book that develops Real Options and Monte Carlo analysis beyond the more fundamental coverage in “Valuation.” It is designed for the more serious student of the topics.

“Valuation” is well worth acquiring even if you have the previous edition. In it Razgaitis reviews six primary evaluation methods:

- (a) industry standards;
- (b) rating/ranking method;
- (c) rules of thumb;
- (d) discounted cash flow;
- (e) Monte Carlo and Real Options; and
- (f) auctions.

It is Razgaitis’ premise that not one of these methods is the best and could prudently be used alone. This goes along with his premise that there is not an absolute number (or even a perfect number) in evaluation; rather a valuation produces a range of figures. The “very nature of the task being addressed does not admit to the kind of certainty that a purely analytical perspective would expect.” In Dealmaking he cautions against “hyperrationality:” an “analytical approach in which only factors that can be expressed numerically and processed mathematically are considered because nonmathematical matters are deemed unimportant or irrelevant” (page 24).

But valuation is more than guess work. The six valuation methods provide “tools and approaches that are worth applying because they provide practical guidance and rescue one from guess work” (page 41). When the tools are used with “skill, experience and judgment,” they overcome the problems encountered with “unique technologies and specific profiles of sellers and buyers” (page 42).

Pricing is to be distinguished from valuation. At page 9 he writes:

“Pricing” is about using the valuation findings to reach an agreement. Pricing is the internal and external communication of perceived value. Pricing is also the concrete answer to valuation, the specification in monetary or equivalent terms of what is offered for sale. Valuation, as we shall see, tends to produce a range of numbers, either as a result of different methods used or as an expression of uncertainty in value; pricing is the proposed number. Yet another way of expressing the difference is this: Valuation is an opinion; pricing is an offer which is designed to lead to a negotiation and, ultimately, an agreement and commitment.

Razgaitis recommends that all six approaches be used “so as to compare the results. When different methods lead to similar ranges, it increases one’s confidence in the utility of the result. When the methods do not lead to similar results, then it is time to re-examine the assumptions and retry the methods” (page 48). Instances that are irreconcilable should cause you to question whether you have used the tools correctly or consistently.

On page 319 he writes:

One of the virtues of having six methods is the opportunity for comparing results by multiple approaches. Each of the methods reviewed has its strengths and weaknesses. By using more than one approach, one frequently gains insight into a valuation that does not occur by the use of one method. Even though these multiple methods are likely to lead to multiple answers, they are also likely to lead to a deeper understanding of the key factors driving the value and how the process can be refined to develop a wiser answer.

Razgaitis encourages a “search for coherence.” At pages 319 and 320 he writes:

As discussed back in Chapter 4, just taking the average of multiple views can be misleading. So does one choose one method as “supreme?” My answer to such questions is that the answer lies in a search for coherence. For any given valuation

situation, there are varying degrees of information available and circumstances by which the license or transaction is to be done. Although it is generally a good idea to look at a valuation from the perspective of multiple methods, one generally gains an understanding when performing such valuation that the available data, or deal-making environment, just creates greater confidence in the values obtained by such preferred method. So, for instance, we might value an opportunity by a combination of Industry Standards, Rules of Thumb, and Discounted Cash Flow, perhaps with each one using some aspect of Rating/Ranking, and result in three different value models. But in performing this calculation, we come to believe that the availability of very relevant comparable agreements causes us to have a higher confidence in the Industry Standards Method. In such case, we could be well served to consider what was it that caused our valuation by Rules of Thumb and Discounted Cash Flow to deviate from what we believe is a most reasonable estimate.

This kind of thinking and subsequent method analysis of methods used is what is meant by a search for coherence. There is no one method that is the gold standard of valuation for any and all circumstances. Coherence is a process of seeking to apply practical wisdom to the array of results produced by each individual method used.

Feeling a little overwhelmed that we have six methods to apply? Are you concerned that the evaluation process will cost more than the technology is worth? No, suggests Razgaitis, as with any effort, you use a cost/benefit approach. Razgaitis writes at page 321:

An appropriate question to ask is: How much of my resources are justifiably spent on analysis? Or, put another way, what is an appropriate cap on transaction costs, of which valuation analysis and other preparedness activities are the initial component?

When you read a book by Razgaitis (and imagine the luxury of two!) you get to know the person Razgaitis as well as the topic. Each book has a healthy component of Raz-isms. He is well read, philosophical and ever intellectually curious on topics not related to Valuation (but that somehow seem to have a direct co-relation to evaluation). We get him drawing from Arthur Miller's play "The Price." A little bit of Shakespeare, a lit bit of risk assessment advice out of the Old Testament book Ecclesiastes, an invitation to enjoy a foreign film nominated for an academy award, the information that the 25% rule goes back as far as 1938 (even though people like me always believed it was popularised by Bob Goldsheider), and indeed way before that perhaps even to Egypt CA 1800 BC as recorded in the Old Testament. We even get hub-caps flying off his mother's '54 Chevrolet! (Dealmaking page 278) Lest you think that Razgaitis does not use more current examples, see endnote 10 on page 100:

It is probably a powerful indication of unique value when the public associates a person or product by an unusual, single name such as J-Lo, Elvis, Madonna, Bono, Cher, Sting, or Prince (or, now more accurately, by an unpronounceable name of the artist formerly known as Prince). On the other hand the

unique name Liberace does not seem to have much traction these days, and "Raz" has not done much for me.

For those of us at LES, "Raz" may be the more recognisable name!

As the Dreadful Drafter, I particularly appreciated his description of the role of lawyers at page 16 of "Dealmaking."

Ultimately, the words and sentences of most agreements will receive the thought and reflect the fears of lawyers. Their skills are exceedingly useful in creating language that is understandable, which is surprisingly difficult to do (as someone once said, "English resists meaning.") They also often bring a "what if" questioning as to an seemingly endless stream of possible adverse turns of events. (In human psychology this focus on the possibility of adverse events is known as "awfulization"; if someone personally close to you has this trait, and you remain cheerful and unswayed in your optimism, you may be a candidate for sainthood.)

For an example of Razgaitis' passion, go to page 123 of Dealmaking:

For those seeking wisdom, the power contained in Monte Carlo modeling is incredible. It enables you to gain the best thinking of the best thinkers and develop a coherent understanding of not only what you think something should be worth but the basis of such belief and a tool that can create changes in your belief on the emergence of better data and assumptions. For you pure in heart, may your wisdom flow like the course of a crystal river through your fingers into the appropriate Monte Carlo cells and may it lead to confidence in what you can know and humility for what you cannot, and may you earn the respect of your colleagues on both sides of the negotiating table by your leadership in fact based reasoning and valuation.

In the end, each book is fun to read. Let's walk through the chapters of "Valuation" and I will pull in from "Dealmaking" where appropriate.

Chapter One: "What is Technology Licensing?"

Razgaitis makes it clear that the technology he talks about in the Valuation book is likely pre-commercial. The lack of a commercial track record makes other evaluation approaches less workable. "Your track record is all in front of you" (page 6). At page 2 he writes:

With such technology transaction species, there is often no product or business history because what is being licensed is newly developed and has not yet reached the stage of a product. Although the tools and methods discussed in this book can be of use in business and product transactions, the main objective here is in support of technology licensing.

Razgaitis reminds us of the importance of IP protection:

So the absence of protection can and normally does preclude value. However, the converse is not true: it is possible to have very strong patent and trade secret protection and still not have much or any value because, for example, of the absence of a market for the product made by the underlying technology. Thus, IP protection is a necessary but not a sufficient condition for value to exist.

Razgaitis sets out and develops for us the six situations for technology licensing:

- (1) enforcement licensing;
- (2) public licensing;
- (3) opportunistic (as distinct from opportunity licensing);
- (4) divestiture licensing;
- (5) partnering licensing; and
- (6) start-up licensing.

Chapter Two: The TR R A DE™ Substance

Since “licensing is really about trade” (page 11) Razgaitis has used the acronym TR R A DE™ throughout this book and expands on each of the components of that acronym.

Razgaitis emphasizes the importance of determining what it is that is being offered for licensing (page 13) what is in the “BOX?” The BOX could consist of:

- (a) the technology;
- (b) the IP rights;
- (c) proprietary technical information;
- (d) people;
- (e) hardware;
- (f) facilities;
- (g) software;
- (h) customers;
- (i) suppliers;
- (j) external licenses;
- (k) patent prosecution and maintenance;
- (l) infringement enforcement ;
- (m) infringement defence;
- (n) R & D/ consulting services;
- (o) regulatory support services; and
- (p) general representations and warranties, (page 16).

Now that you know what is in the BOX, what are the components of the WHEELBARROW (page 12)? Razgaitis cautions against excessive focus on royalty rates—they are just one component of the potential components in the Wheelbarrow:

One frequent measure of value of a license is the royalty rate, as in “this deal is for a 5 percent license.” Actually, a royalty rate by itself is an incomplete description of value. The seller is rightfully concerned about the size of the check that it expects to receive, not the royalty rate used in calculating the amount owed under the license, regardless of the rate, and regardless of whether it is usage-based, time-based, or event-based. To effectively capture the concern of the seller (the buyer), the slang term Wheelbarrow has been utilized in reference to the buyer hauling cash to the seller in a wheelbarrow. Accordingly, while a royalty rate is a common negotiation point, both parties are ultimately concerned with the size of the Wheelbarrow. Here, the Wheelbarrow is used to reflect all of the various forms of value provided by the seller to the buyer. The seller provides a Box of technology, rights, and other deal elements, whereas the buyer provides, in the form of one or many Wheelbarrows, value payments to the seller.

Compensation can be affected by the method of payment—lump sum payments, milestone payments etc. See pages 18-22 and again in a much more detailed fashion in chapter 11. Consider reading them together.

The grant clause and payment clause are not the only indicia of the trade and resulting price. Representations and warranties and covenants to enforce patents also influence the size of the BOX (pages 24-25).

In the end, a significant component of evaluation is risk assessment. Watch for bad risk assessments of optimists (or conversely pessimists). And especially the mega-optimists/pessimist—both are unrealistic. The mega-optimist is:

“defined as that person who believes he could douse hell with one bucket—while the pessimist fears that the optimist could be right.”

(endnote 9 on page 38).

In “Dealmaking” we find him coining the phrases “pessi-missive” and “opti-missive” Great Raz-isms!

Razgaitis develops in detail the five main categories of risks:

- (a) R&D risk;
- (b) manufacturability risks;
- (c) marketing risks;
- (d) competitive risks; and
- (e) legal risks, (page 30-32).

Chapter Three: Overview

Here he reinforces his theme that no one method is reliable; there is no one best method. You might want to read this chapter and then immediately go to chapter 12 which picks up and develops the topic more. A well structured argument—pleasant to see from a non-lawyer.

Chapter Four: Method One

We all want a simple easy to understand and use benchmark. Unfortunately it rarely exists. “Technology almost by definition is unique and at most has few pre-existing examples,” (page 57). At page 57, he writes:

Therefore, one should not expect this chapter to present a notebook of numbers that can be used in every technology valuation. No such all-inclusive notebook exists here or elsewhere. Yet, there is important value in obtaining and understanding market-based data on technology transactions. In almost all technology licensing situations there exists some discoverable previous transactions which can provide useful insight into value based on what such previous buyers and sellers agreed to. In almost all cases some significant interpretive work will be needed to apply the data to the present circumstance. This will be the focus of the next chapter and Method two, the Rating/Ranking Method.

Razgaitis examines at page 65 of this chapter the eight categories of industry standard data and information.

His summary of survey data limitations for aiding evaluation at pages 72-73 is excellent and it is typical of the many checklists in this text.

Chapter Five: Method Two – Rating/ Ranking

Razgaitis draws an analogy between rating/ranking used in project management for new product development to rating/ranking in valuation. At page 111 he writes:

Finally, rating/ranking is conceptually related to a current best practice for new product development, namely the “stage gate process.” As in stage gate product development there is an undergirding belief that systematic analysis, especially by expert panels using prescribed tools and methods, leads to wisdom (better choosing). Specifically, in rating/ranking valuation, and stage gate product development, we have:

- *Our Key assumptions/belief are overtly articulated.*
- *Biases are brought out into the light and tested.*
- *Systematic process using established tools enables the use of structured panels, even with changing membership.*
- *A track record/history is created that can be very useful in future exercises.*
- *One is prepared for next step decision making (in the context of valuation the next steps are normally pricing and negotiation readiness).*

He sets out the five elements that comprise the Rating / Ranking Method:

The five elements that comprise the Rating/Ranking Method are as follows:

1. *Scoring criteria*
2. *Scoring system*
3. *Scoring scale*
4. *Weighting factors*
5. *Decision table*

He then develops each of these elements in this chapter. It is perhaps illustrative of the practical tools that Razgaitis provides. He gives reasons “why the rating/ranking method is used and valued at pages 116-117:

1. *It causes one to prepare for negotiation by thinking through the relevant factors that make up licensing value.*
2. *It facilitates discussions with other valuation experts as it focuses on the key components of value and what is known (and not known) and good (and not good) about the subject technology.*
3. *It can be useful in explaining to non-expert stakeholders how the valuation was reached.*
4. *With experience, the method increases in value. As one sees more and more outcomes and develops more experience with rating and ranking, the structure of the method enables one to make more insightful comparisons. The method becomes a tool for creating a storehouse of one’s own licensing experience.*
5. *It is easy to use and can, with a good benchmark(s) and appropriate criteria, yield useful results.*
6. *For all its subjectivity, it is a tool in the toolkit of the licensing professional and no tool should be ignored (and, in this regard, it complements the more quantitative methods considered in Chapters 7 and 8).*
7. *It can lead to strategies for increasing the value of the technology by identifying important missing components of*

a potential deal, or reducing the risk (uncertainty) by further research or inquiry to improve a low score on a particular criterion.

8. *During or after negotiations, an already-completed Rating/Ranking valuation can be useful in assessing the need for a re-valuation, or a “Plan B.”*

Rating / Ranking works best when it is systematized and applied by a panel of “regulars” who develop a history of making such judgments. It is greatly aided by feedback from actual values received (favourable and not). Over time, an organization can develop a very powerful set of enabling tools for expert panels to apply.

Those of us who for years looked to Tom Arnold’s 100 point checklist will welcome it as Appendix 5A—even though a bit dated, it is still valuable.

Chapter Six: Method Three – Rules of Thumb

Here we get a good development of the likes of the 25% rule. Read the chapter quickly, digest Razgaitis’ pros and cons at the end of the chapter and then go back and read the chapter more intensely. It is good stuff!

Chapter Seven: Discounted Cash Flow

This chapter gives a progressive development of the discounted cash flow method. In the end, value all comes down to cash flow. It is not revenue less expenses that is important; just as in the Calgary energy industry, cash flow is king. This chapter is essential reading for the discussion of the Monte Carlo and Black-Scholes discussions that come in the next chapter. This chapter is carried into the Dealmaking Book, where it also sets up the discussion for the more advanced methods of analysis.

Chapter Eight: Method Five – Advanced... Valuation Method, Monte Carlo & Real Options

This is the primer on Monte Carlo. The more serious student will skim this chapter to get the topic into context with the other five methods and then move on to read “Dealmaking.” I heard Razgaitis speak on this topic at the LES 2001 Spring meeting in Kananaskis and was impressed by the methodical way he builds the framework for those like me who are somewhat intimidated by this topic. This skill comes through in this chapter. Monte Carlo addresses a fundamental problem with DCF—the limitations of discounting all cash flow with a single discount rate. The more advanced methods discussed in Valuation and developed in much more detail in “Dealmaking” are designed to assist the user to develop the variables and then apply different discount rates to the variables, using various algorithms and likely using software. There is some discussion of the Black-Scholes Equation and it is here that he really drives home the point that it must be used in context with other valuation methods. He uses the acronym BSE and that means Mad Cow for those of us in Alberta where the ranching industry suffered a disastrous hit to the economy due to one isolated case of BSE—is there the risk that excessive use of Black-Scholes can lead to mad cows?

Chapter Nine: Auctions

In this chapter Razgaitis describes something that is

very common in the Calgary energy sector: auctions, which room is set up for due diligence under secrecy.

Auctions normally presume “an inherently strong bargaining position on the seller’s part and that the technology in question can be apprehended (comprehended?) relatively quickly by prospective buyers” (page 259). Also they can be used by trustees in bankruptcy.

Sellers must be careful: He writes at page 260:

If an auction fails, due to a lack of bids or only low ball bids, then the seller is at a bargaining disadvantage in seeking out subsequent buyers (assuming such buyers knew of the auction) because they would know that there was little or no interest by other buyers. Therefore, one of the seller’s big risks in auctioning is that it can fail, which then can make it difficult to sell at all. At the very least, the seller might have to propose terms even less attractive than would have otherwise occurred sans auction.

As to disclosure rooms, Razgaitis writes at page 260:

To some extent, sellers can help reduce the buyer’s investment requirements by creating extensive data packages and even disclosure “rooms” where prospective buyers can study comprehensively prepared background information. It is in the seller’s interest to make the due diligence burdens as low as possible in order to induce as many bidders as possible.

Sellers must watch out for those buyers who are just using the opportunity to collect competitive intelligence (p.263).

Chapter Ten: Equity Considerations

This is a good review of the issues to consider when looking to equity as an alternative or addition to run-

ning royalties. Although it was perhaps over used in the DOTcom era, many of the principles are still valid and Razgaitis develops them for us.

Chapter Eleven – Structure of the Licensing Payments

This is a valuable list of the different structures of licensing payments: down payments, progress payments, royalty kickers, wedding cakes, buy outs, and the like. This chapter should be required reading for anyone early in the licensing game.

Chapter Twelve – Pricing, Negotiation, Readiness and Conclusion

This reviews what went before, consider reading it early on.

The book finishes with a technology access key resource list and an alphabetical listing of useful resources.

“Valuation” is an excellent book, easy to read even when the topic is complex, useful at the fundamental level as well as at the advanced level. A significant expansion over the earlier one. Difficult topics made easy to read.

“Dealmaking” is for the serious reader of valuation principles. Like “Valuation,” it is full of Raz-isms that give relief to the intense discussions. Those who work in the area will want it on their shelf, will read it again and again and will appreciate the lucid explanations.

Both are great tools; both are examples of the finest writing style. No Dreadful Drafting here!

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