

Book Review/By John T. Ramsay, Q.C.

Valuation & Dealmaking Of Technology-Based Intellectual Property

By Richard Razgaitis, Published by John Wiley & Sons, Inc., Hoboken, New Jersey ISBN 978-0-470-19333-4

This is the third in Razgaitis’ series of books on Valuation. The first book was written in 1999, the second in the series (two volumes) was written in 2003 and this one, consolidating the topics of the two 2003 volumes, was written in 2009.

Think of it. After the 1999 book, we have the technology mania and burst where valuation was ignored. Obviously a writer needs to get the points through—valuation of technology, although in many ways unique, requires much the same disciplines as required for other industry sectors.

So what happens—after the 2003 books are written, other industry sectors, in particular the financial sector, prove that they have no idea of the basic valuation disciplines either. Sheer greed combined with wilful ignorance prevailed both times. So what does the best writer on technology valuation do? He re-writes his book to provide step-by-step disciplined approaches, detailing the fundamentals as well as the technology-unique approaches.

The book is not written for the litigator, it is written for the dealmaker where there is something more than “bare patents” but rather “a process of sellers and buyers discovering value and enhancing deal structures to their mutual benefit.” [page vii]. The quest is “for economic benefit through trade in the face of significant risk” [page vii].

The dealmakers are a team that includes lawyers, profit and loss managers, business developers, deal managers, financial analysts, inventors/content creators [page 546]. Each of us need to know the principles involved so we can discern the merit of valuations taken by others. Those of use who are not valuers need to know enough to be able to challenge the valuation premises done by the experts and not to be intimidated by impressive spreadsheets and graphs (or even “tornado diagrams and sensitivity charts”) [page 575].

You don’t read his book for “risk removal” but rather to “support risk-based opportunity discovery, valuation, pricing and Dealmaking” [page vii].

In his analysis, he uses three “Approaches”: Discovery of the opportunity, Valuation and Dealmak-

ing, producing the acronym “DVD” that he uses throughout the book. The valuation approach takes up one-half of the book.

For each of these three Approaches, Razgaitis provides Methods and Tools. His premise is that, although the Approaches/Methods/Tools process cannot “extinguish risk and uncertainty, it can frame an opportunity to enable reasonable judgments to be made” [page 27].

Razgaitis illustrates his Approaches, Methods and Tools with this chart:

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Approaches, Methods, and Tools (A-T-M)				
		A: Approaches	M: Methods	T: Tools
Licensing D-V-D	D	Discovery	NPV v. Risk	Rating/Ranking DCF
	V	Valuation TR R ^k A DE	1. Industry Standards 2. Rating/Ranking 3. Rules of Thumb 4. Discounted Cash Flow 5. Advanced Methods 6. Auctions	>Rating/Ranking >Rules of Thumb >Discounted Cash >Risk Assessment
	D	Dealmaking	Deal Structures Dealmaking-Process Plan B	Rating/Ranking DCF/NPV Monte Carlo Real Options

Particularly with early stage technologies, the valuable opportunity to be “Discovered” is often not clear. Razgaitis suggests the following analytical approach for defining what you have that is so special, using a spreadsheet that groups technologies for analysis:

By definition a technology, as opposed to science or some raw idea, is something that can *do something*, perhaps many things, but at least something. The key step here is to capture in just one or two clear meaning-packed sentences exactly

what this *something*... can do.

One check point question when a provisional TA (Technology Applied) definition has been developed is to ask, “How is this different from every other technology known to man?” It’s a good idea to capture each and every suggested answer to such question, until the proposals come to a stop or become repetitive. Next to each proposed answer, again for each row [in the spreadsheet], create another column headed by the infamous “So what?” question. The important task now is to drill down on each proposed answer to the “what’s different” question by determining why such difference matters, in as concrete terms as possible.

This is not easy to do, and normally cannot be done well in a single sitting, nor without participation by an opportunity team that, ideally, includes inventors, business managers, technology generalists familiar with competing technologies, patent attorneys, and people familiar with relevant markets.

After delineating the problem solved, then consider “what rights do we have to offer?”

Having strong IP protection, which may include multiple patents and trade secrets [makes it] more difficult for a potential buyer to envision an independent recreation and increase its risk in attempting to do so [page 56].

After delineating the problem solved by your technology:

From the discussed steps there should then be at least a provisional belief for each of the technology groups, the key technology distinctives of each group, how such technology distinctives distinguish what the seller has to offer compared to all known alternative technologies, the “So what?” significance to a customer of those differences, and clarity as to what rights the seller has that it can offer a buyer.

The next step with the TAPS (Technology Applied—Problem Solved) chart is to express the given findings in terms of “Problem Solved” (PS). A PS description is a plain English paragraph that, in theory, can be expressed in the proverbial “elevator pitch” (i.e., in 30 seconds or so, without presentation handouts). It expresses the answer to some unmet need, which need is either already widely known (say, ultra high capacity electrical battery storage) or could be readily recognized (say, “bomb proof” word processing software, something that would have speeded the writing of this text) [page 56].

Having reviewed Methods, you are ready for the second component of the “Discover” the opportunity Approach, namely Tools. You will use the Rating/Ranking process described in detail in the Valuation section of the book to get objectivity, but you may also choose to be more subjective in the initial stages. You may have to select which technologies or group of technologies to focus your further efforts on before you expend the funds to do a more thorough Rating/Ranking Approach.

The Tool is applied by scoring each of the above criteria, or the final “Problem Solved” result. The method of scoring can be as simple as a letter grade, A, B, or C, where an “A” is used to designate for opportunities that have been so “discovered” and will be pursued down the Licensing D-V-D process. A “C” would be used for those that will definitely not be so pursued. So the middle score of “B” would designate either (1) an opportunity that needs additional initial screening to either move it up to an “A” or down to a “C,” or (2) an opportunity that will be on hold and later be reconsidered after the “A” opportunities have run their course, or when/if additional resources are made available [page 57].

Another approach to rating/ranking that is more subjective but can be equally effective is simply to score the respective “elevator pitches.” A specific panel of people can be tasked with hearing each one, and quickly responding with their individual reactions and perhaps participating in a short debate. Some judge then takes the essence of the individual responses and provisionally tags the opportunity with one of the above A, B, C letters [page 58].

In this initial and preliminary rating/ranking process, you need then to apply “highly simplified forms” of net present value (the result of the Discounted Cash Flow process) and risk assessment [page 62]. Razgaitis writes:

The second factor that can improve this opportunity analysis is in assessment of risk. Again, as we will see in Chapter 7, risk can be expressly accounted for in the NPV (Net Present Value) calculation. For opportunity Discovery however, a simplified form of risk assessment can be useful. We can add another column to Exhibit 3.1 for overall risk assessment. Unlike what we will do in Chapter 7, this column would be to establish a preliminary category of risk for each row of opportunity, say using a 1 to 5 scale, where a “1” is very low risk and a “5” is very high. As

discussed above such assessment would be made by capturing in a few initial sentences the most important risks as best as they are known. Then a separate assessment is made of the “So what?” of such risk description to assign a 1 to 5 number. The result will be A, B, and C opportunities each paired with a risk number, so the letter gives an estimate of the upside and the risk number the downside. Clearly the A1s are the best, and the C5s the worst [page 62-63].

From this basis, his book moves on to discuss Valuation (the V of “DVD”) broken down into (i) Methods and (ii) Tools. Razgaitis discusses six valuation Methods with their accompanying Tools: (i) industry standards; (ii) rating/ranking; (iii) rules of thumb; (iv) discounted cash flow; (v) advanced methods; and (vi) auctions.

Don’t be fooled by the simplicity of Razgaitis’ “DVD” formula (Discovery of opportunities, Valuation and Dealmaking) or his A-M-T formula (Approaches, Methods and Tools) and the nice boxes he uses to display these formulas. The perfect number is not $A+B-C=\infty$. There is the hard work of gathering data, processing and analyzing it, applying one or more Methods of Valuation to them, and then, horror of horrors, using judgment. Because judgment, when combined with wisdom, is such a rarely used process, in order that we may remember it Razgaitis calls it Phronesis (FRO-knee-sis). A good classical scholar like Razgaitis recognizes that the Greeks got it right.

Let’s now look at how Razgaitis addresses the V (of his DVD formula, Valuation). He analyzes the six Valuation Methods and Tools you can use so you can apply Phronesis.

Method 1—Industry Standards (Chapter 4)

Razgaitis in his Chapter 12 provides an excellent summary of Method 1:

The Industry Standards Method requires the identification of an appropriate comparable agreement, or industry norm. This Method has strong and obvious appeal, partly because of its simplicity but also because we are inbred with the idea that there exists a true, market price if we can but discover it.

However, we recognize that with technology valuation and pricing:

- Most technology agreements are not published and, so, are not available for study. And when they are published, they may not comprehensively describe the deal Box [what you have to offer] and Wheelbarrow [what you will get back in return]. So, available agreements are likely to

be incomplete and biased.

- Patents and other IP rights are, by nature, unique. No two patents can be identical, nor is it likely that two trade secrets or copyrighted software are either exactly or substantially the same. Opportunity Boxes created by sellers, or sought by buyers, are highly specific so much so that the same underlying opportunity may not be offered in the same way to two different buyers. And different buyers, and sellers, can value and price unique to their own interests and perceptions, especially with regard to risk and uncertainty. So even a given opportunity may not be comparable to itself.

- Published averages, whether obtained by survey or some calculation of a selected published population of agreements, can be meaningless.

In many cases, no single agreement exists that closely matches the subject valuation. Therefore, a common practice is to create a comparable family of agreements from available individual ones upon which judgment—that key idea—can be exercised. Such judgment is the interpretation that interpolates and extrapolates from any relevant existing data to predict how the market would have valued the subject opportunity had it been given a chance to do so, incorporating all the *mutatis mutandis* (changes as need be changed) for a meaningful comparable valuation.

This Chapter is filled with examples, summaries and checklists to validate his analysis of the Industry Standards Method. For example, he provides an 11 point summary of the limitation of Survey Data for Aiding Valuation [pages 103—105].

Method 2: Rating/Ranking (Chapter 5)

Just to give you a flavour of his book, I will quote from the start of his discussion on Method 2—the Rating/Ranking method, and Tool:

In this chapter we will consider the second of six valuation Methods, that of Rating/Ranking. As a valuation Method, Rating/Ranking requires the pre-identification of a reference or comparable agreement or cluster of such agreements. For this reason this method is closely associated with Industry Standards, Method 1, covered in Chapter 4. One of the observations on the use of Method 1 is the difficulty in identifying exact or near-exact comparable agreements. There are other concerns about solely considering Method 1 approaches to valuation. One such concern that is always present with any method

is the risk of distortion, or even disablement, of judgment. As we have discussed, considering agreements which are deemed comparable is a compelling instinct for both technology sellers and buyers, though as we will discuss in Chapter 11, sellers and buyers may “see” very different populations as being comparable. Like any other quick-to-compel idea or “fact,” the result can be a misguidance that, upon a broader reflection, could have been avoided. Another area of concern is the difference between the past and now, let alone the past and the future. Another kind of compelling instinct is “pastcasting”: extrapolating the past as a kind of sovereign determinant of what will happen now and in the future. One expression of such pastcasting, some times referred to as “groupthink,” occurs when peers with similar backgrounds and experience are firmly, unanimously, and, as it too often turns out, wrongly convinced about confident predictions about even the then present conditions, let alone the future. Andy Grove, former CEO of Intel has said: “When everybody knows that something is so, it means that nobody knows nothing” [pages 139-140].

Method 3: Rules of Thumb (Chapter 6)

Razgaitis provides an excellent summary of this Method in his Chapter 12:

The Rule of Thumb Method is commonly employed for three valuation purposes. First, it can be used as a starting point for deriving a royalty rate, based upon an analysis of the benefit to the buyer. Second, it is a sanity check on a number created in some other way. For instance, the seller’s use of the Industry Standard Method coupled with Discounted Cash Flow can create a valuation that does not take into consideration what proportion of the expected financial benefit to the buyer is being allocated in royalties and equity. The Rule of Thumb Method can check the reasonableness of other methods. Finally, Rules of Thumb can be used as an early basis of agreement between a seller and buyer to frame subsequent detailed financial analysis. For instance, if the parties can agree at the earliest stage of due diligence and negotiation that they will apply the 25 Percent Rule with the value 25, then this process agreement can create confidence that a deal can ultimately be struck and a fair final number calculated. Conversely, if a prospective buyer discerns early in the process that the seller aspires to 50 percent or

75 percent of the profits, and such a high range is clearly incompatible with the nature of the opportunity, the buyer can focus on realigning the seller’s perspective or else cut off further investment in due diligence.

However, we recognize certain important limitations:

- The Rule of Thumb Method does not expressly account for required buy investment and risk. As we see with the DCF Method, the forecast net cash inflows and associated risk have an enormous effect on value.
- There needs to be an accounting for the relative contribution of the Technology Box to the buyer’s value. There can be significant additional technology and rights needed for value realization that cannot be simply ignored.

Yet the idea of some “rule” seems natural to us. In 2008, piracy has emerged as an expanded “industry.” One notable example was the capture and offer-for-ransom of a super tanker laden with \$100 million of oil. Although we do not have access to the pirates’ valuation methodology (it seems doubtful that they used Monte Carlo), their offer for safe return was—what would you have guessed?—\$25 million. Had they heard of the 25 Percent Rule, or did we all learn it from the same ancient practice?

For those LES members who love/hate the 25 percent rule, Razgaitis provides a 23-page analysis of the rule.

Method 4: Discounted Cash Flow, DCF (Chapter 7)

Again Razgaitis provides the summary for this Chapter in his concluding Chapter 12:

The DCF Method is based on creating pro forma models of estimated net cash inflows. Such models are the basis of establishing business plans required for seeking investment and subsequent management and reporting of results. The flexibility and power of spreadsheets can readily accommodate any appropriate level of complexity and completeness. The DCF Method and NPV calculation is considered the “gold standard” of business valuation.

However, there are certain limitations:

- Many key value drivers such as buyer investment, operating cost, and revenues and growth in such revenues, are difficult to estimate, and have limited comparables.

- Certain assumptions can have an enormous influence on value, and the uncertainty associated with such assumptions cannot be confidently made narrow.
- Every reasonably possible scenario may not have been conceived or considered, or if considered weighed properly in terms of its relative probability.
- Risk assessment (RAHR) is critical to determining value, but is difficult to assess. The future has a way of surprising us all.

The DCF Method (and its related equations) is highly useful as a Tool to support pricing structures involving multiple payment forms such as upfront and progress payments, royalties, as well as other forms of consideration.

Method 5: Advanced Methods: Monte Carlo, Real Options (Chapter 8)

Quoting Razgaitis from Chapter 12:

The Monte Carlo Method builds off of a DCF model but with a much richer portrayal of assumption uncertainties through probability distributions. This leads to a different perspective of the effect of risk, separating the cost of capital from the explicit uncertainty risk associated with the technology. Monte Carlo Tools such as tornado diagrams and sensitivity charts help prioritize further analysis of the most important assumptions. Monte Carlo provides a powerful visual tool of opportunity and risk, and makes more readily understandable related implications on value.

The use of Real Options has great appeal because of its ability to take measured risks with less risk capital while preserving the right to realize high value opportunities. But, unlike financial options that can be valued by well recognized financial methodologies such as Black Scholes and its modification, no simple correlate exists for Real Options.

Method 6: Auctions (Chapter 9)

Razgaitis writes in Chapter 12:

Finally, the Auction Method is a way of creating an incontrovertible comparable, or as in the metaphor used earlier, creating a VOR site (VOR is an important aviation navigational technology) at the perfect location, by having the market bid for the specific opportunity. With perfect information, and multiple bidders, this process should yield a fair value to both the buyer and the

seller. And when/as the Method works well, it establishes a value and price and buyer, all at the same time, for it can be viewed as combining the Approaches of Valuation and Dealmaking. Unlike the other valuation Methods, real time public auctions cannot practically be used without a Dealmaking event because the value, and price, is determined by a bidder's final price, when it exceeds a seller's reserve.

Real Time Public Auctions are well known for many kinds of assets, from equities to broken laser pointers to rare works of art, and have been applied to technology as well.

However, such auctions have limitations:

- The technology must be structured simply, and the opportunity sufficiently attractive to cause multiple buyers to make the investment and take a risk of participation.
- The method does not obviate the need for a seller valuation unless it takes the significant risk of not using a reserve price.
- There is no certainty that a market price has been established, or that the seller would have done much better had it followed a more conventional Dealmaking Approach.

Chapters 10 and 11 cover the third D of DVD—Dealmaking. This is a very significant resource and could be overlooked by those who focus on the Valuation aspect of the book. If you are in the early stage of your licensing career, go right now to chapter 10 and get one of the best primers on the compensation portion of a license I've seen. Razgaitis describes four cash structures:

“Cash *When*,” for unconditional payments on specified dates; “Cash *As*,” for expected payments conditional upon certain events; “Cash *If*,” for payments which are not necessarily expected by either side; and “Cash *Maybe*” for option structures [page 501].

Cash When pricing structures include: Paid Up/Lump Sum: Single Payment; Paid Up/Lump Sum: Multiple Payment; License Maintenance Payments; Minimum Royalties; Other Payment Obligations: Bills Due [page 502–506].

Cash As Pricing Structures include Pure Running Royalty; Royalty Base Issues: Embedded Licensed Technology; Royalty Base Issues: Something Other Than Revenues; Royalty Base Issues: Convoyed Sales; Royalty Stacking; Royalty Rate Adjustments: “Wedding Cakes”; Royalty Rate Adjustments: “Step Downs” and “Step Ups”; Royalty Rate Adjustments: Related Party

Sales; Royalty Rate Adjustments: Add-on Features; Royalty Rate Adjustments: Royalty-Free Sales; Royalty Rate Adjustments: Agreements to Negotiate Royalties; Royalty Down Payments; and Progress Payments [page 502–517].

Cash If Pricing Structures include Royalty Rate Adjustments: “Step Downs” and “Step Ups”; Royalty “Kickers”; Royalty Buyouts; and Termination Fees [pages 517–521].

Razgaitis then discusses other forms of consideration beyond simple cash including Supply Contracts, Purchase Contracts, R&D Consulting Commitments, Public Acknowledgement, etc. [page 522–525].

Chapter 11 is entitled “People, Process, and Lessons Learned.” This chapter is the integration of the Valuation process with the Dealmaking process. Too often these processes get separated.

Razgaitis provides details of the surveys that were performed by the Licensing Foundation of the LES (USA & Canada) while he was president of that Foundation. These surveys reviewed impediments to the transaction, reasons for breakdown, reasons for remorse and reasons for deal demise. For example, some of the major reasons for remorse were errors in calculating business milestones, technical milestones and field of use restrictions, as well as payment on deal structure. A common response was “the other side not putting their promised effort into the technology” [page 543].

Razgaitis describes the deal team which includes lawyers, profit and loss managers, business developers, deal managers, financial analysts, inventors/content creators and those impossible to classify. (Some might have thought that category one (lawyers) and category (those impossible to classify) might be the same.) On one hand, he compliments the lawyers by saying that “Their skills are exceedingly useful in creating language that is understandable, which is surprisingly difficult to do (as someone once said: “English resists meaning”)” [page 546]. They also “often bring a ‘what if’ questioning as to a seemingly endless stream of possible adverse turns of events... A process known as ‘awfulization’.”

It is important that the deal team have a balance between those Razgaitis describes as the “pessi-missive” and those who are “opto-missive.” Towards the end of this chapter he provides ten steps of strategic direct marketing of technology to prospects which is well worth reading. The chapter concludes with advice from technology dealmakers as a result of the 2006 Licensing Foundation survey:

Concluding Advice from Technology Dealmakers

The previously discussed Licensing Foundation Survey for 2006 asked fill-in-the-blank questions for the top three best and worst Dealmaking practices for three periods: before, during, and after the deal. Highlights of these responses follows:

1. *Before the Deal.* The predominant best practice observation can be summarized by “do your homework.” This was expressed by more than 100 phrases containing words like know, understand, research, due diligence, study, analyze, prepare, plan, identify, evaluate, develop, estimate, assess, define... Although the market was the most frequent word mentioned in this context probably followed by valuation, the span of things “do homework” on, was deep and wide: key decision makers, goals, walk-aways, other party’s needs, patent position, competitors, IP strengths, BATNA (Best Alternative to a Negotiated Agreement, a term of art introduced by Roger Fry and William Ury). It should also be noted that there was frequent response of people issues: build a project team, “courtesy wins in the long run, no matter how painful the interaction,” face to face meetings, being flexible/creative, and the like. Worst practices were in many ways the best practices turned upside down: no preparation and poor people skills... On people matters, words used were arrogance, bad faith, close-minded, bluff, shoot from the hip.

2. *During Negotiation.* Many of the responses captured the best practice idea of being wholly sentient, most often expressed by listening, but also including other forms of observation (body language). People issues were even more important here: Be courteous, ethical, flexible, polite, respectful, patient, positive, discuss/don’t argue, honesty, humor, open(ness). These practices relate to another common observation regarding the practice of flexibility, which may again point to the greater complexity of IP dealmaking than other kinds of business negotiations. The worst practices included many references to assume (reflecting here perhaps more a lack of listening rather than as above a lack of preparation). Other worst practices included dirty little tricks, bait and switch, arguing, bullying, changing people on the negotiating teams, changing terms, delay, ego, getting insulted (“it isn’t personal, stay positive”), nickel and diming.

3. *After the Deal*. The most common best practice centered on communicating... Among the terms and phrases used in this regard were various forms of follow up, maintain(ing), monitor(ing), manage(ing), staying connected. For the worst practices, characteristic words used were complacency, assume(ing), failure to (follow up, communicate, etc). On the people side, there were two particularly poignant pieces of advice of behaviors to avoid: continued antagonism, and its opposite, crying over spilled milk—human feelings all too easily experienced from dealmaking that had limited degrees of freedom for one of the parties.

In **Chapter 12**, Razgaitis brings the book to a conclusion with an excellent summary of his review of the six valuation methods (the V of the DVD) from which I have quoted extensively.

This book is a no-nonsense, not-for-dummies review of Valuation. It is a serious read. It is not a tool to be picked up prior to negotiations to be used readily as a checklist. To make it useful, you will have to read it. Some of it is an easy read—a chat with Raz, full of witticisms and eclectic references—including the endnotes (for example, EBIT, normally known as Earnings Before Interest and Taxes, and “not, as some have recently suggested, Earnings Before Irregularities and Tampering” end note 22, page 253). Some of it is harder to read and requires concentration and a desire to understand.

This book is to be read, savored and appreciated. If you want to get the perfect number ($A+B-C=\pi$) easily, it is not for you. If you want to get to the point you can use Phronesis (judgment and wisdom), it is for you. ■