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A Spectrum of Tools to Support Litigation Risk Assessment: Promise and Limitations

Heather Heavin and Michaela Keet*

A common theme for legal futurists is the call for legal professionals to take leadership in the world's rapidly changing and complex economy.¹ This challenge is often framed on a large scale, around the invention of a renewed legal infrastructure and a broadly imagined scope for legal services. The idea that lawyers should pay attention to shifting challenges and opportunities is relevant on a smaller, practical scale in the context of litigation and settlement – where numerous tools are available to support systematic risk assessment. The systematic assessment of litigation risk is increasingly expected by commercial clients, and yet not all lawyers are comfortable with this role and methods for accomplishing it.

When it comes to conceptions of risk, the practice of law is out of step with the rest of the regulatory and commercial world and its prioritization of “risk management”. Risk allocation as a defining characteristic of social relationships in contemporary society has been long noted.² Its role in commerce, and in the physical and health sciences is obvious, and risk assessment tools have had a place in the criminal setting for some time.³ We might view the civil justice

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¹ See e.g. Richard Susskind, *The End of Lawyers?: Rethinking the Nature of Legal Services*, revised ed. (Oxford: Oxford University Press, 2010); Richard Susskind, *Tomorrow's Lawyers: An Introduction to Your Future* (Oxford: Oxford University Press, 2013); Gillian K. Hadfield, *Rules for a Flat World: Why Humans Invented Law and How to Reinvent It for a Complex Global Economy* (Oxford: Oxford University Press, 2017).

² See Ulrich Beck, *Risk Society: Towards a New Modernity*, translated by Mark Ritter (London: Sage, 1992); Jakob Arnoldi, *Risk: An Introduction* (Cambridge, UK: Polity, 2009).

³ Sentencing of offenders is completed often only after risk assessments have been calculated, using tools that evaluate the chance that an offender will reoffend, and under what circumstances. A common tool used in Provincial Court in Saskatchewan is the LSI (Level of Service Inventory). For discussion of the range of tools used for these purposes, see “Risk Assessment: Approaches and Applications”, *InsidePrison* (April 2006), online: < <http://www.insideprison.com/risk-assessment.asp> >; and Glen Luther & Mansfield Mela, “The Top Ten Issues in Law and Psychiatry” (2006) 69:2 Sask L Rev 401 at 412-18. Police services are also increasingly gathering data and analyzing it to better predict

context, however, as less advanced when it comes to the collection of data and the use of risk assessment methodologies.⁴

Risk in the litigation context is not always easy to assess; it is often said that the prediction of litigation outcomes is more art than science. It is often hard to predict the outcome of one singular event with any accuracy, and litigation requires an assessment of a series of dependent and independent events. In the face of such complexity, many lawyers rely on vague language to describe the chances of winning or defeating a claim (such as “a good chance” or “unlikely”) rather than providing percentages or scales of predictions.⁵ These predictions lack precision and commercial clients, in particular, often expect more.⁶ In an age of increased focus on informed decision-making by clients, early resolutions, and accessible justice, solid litigation assessments are vital — and are vital even earlier in the process.⁷

A methodical risk assessment does not require that a lawyer engage with technology at all. Indeed, its basic steps are ones that, as some practitioners like

outcomes and improve policing techniques. In January 2016, the University of Saskatchewan, the Government of Saskatchewan and the Saskatoon Police Service launched its own Predictive Analytics Lab (PAL). The data gathered will be used for research purposes to help the police service to better predict criminal behavior and trends. See University of Saskatchewan, “Predictive Analytics” (15 January 2016), online: <<https://words.usask.ca/news/2016/01/15/predictive-analytics/>> .

⁴ Cf Dru Stevenson & Nicholas J. Wagoner, “Bargaining in the Shadow of Big Data” (2015) 67:4 Fla L Rev 1337 at 1341 [Stevenson & Wagoner].

⁵ This paper grew out of a larger project on risk analysis. Observations about lawyer behavior and client expectations which are found in this paper are drawn from that larger project, a component of which was a study of professionals, including senior in-house counsel, commercial litigators, and others with experience in risk analysis. See Heather Heavin & Michaela Keet, “The Path of Lawyers: Enhancing Predictive Ability through Risk Assessment Methods” (Paper delivered at the CIAJ 2016 Annual Conference, Ottawa, 5-7 October 2016); Heavin & Keet, “The Path of Lawyers: Enhancing Predictive Ability through Risk Assessment Methods” at 16-17, online: <<https://ciaj-icaj.ca/wp-content/uploads/2016/11/930.pdf>> [Heavin & Keet]. For ease of reference, participants in the interviews are identified as (“Lawyers 1 - 8”), (“Corporate Counsel 1 - 3”), (“Risk Assessment Consultant 1 - 4”), (“Actuary”), and (“Mediator”). Additional lawyers who participated in workshops but not interviews are identified as Workshop Participants 9-16.

⁶ The participants in our interviews attested to clients’ interest in careful risk assessment, *ibid*, at 31.

⁷ We argue elsewhere that effective risk assessment is a professional and ethical obligation for lawyers, see Heavin & Keet, *ibid*, at 11-13. Our conclusions align with Alice Wooley’s contention that lawyers giving advice “need to engage in a reasoned explanation of their position, noting its weaknesses and any countervailing arguments” and “the advice ought to facilitate the client’s goals and—especially—the client’s ability to make decision about how to proceed”. See Alice Wooley, “The Lawyer as Advisor and the Practice of the Rule of Law” (2014) 47:2 UBC L Rev 743 at 773. See Canadian Bar Association, *Reaching Equal Justice Report: An Invitation to Envision and Act* (Ottawa: CBA, 2013) at 60-61 [*Reaching Equal Justice*]; making explicit the connection between access to justice and “informed and capable citizens and disputants and litigants”.

to say, “can be done on the back of a napkin”.⁸ We have elsewhere presented what those basic steps ought to include.⁹ In summary form, they include:

- Step 1: Understand and calculate risks on liability;
- Step 2: Project damages;
- Step 3: Compound or multiply liability risks and damage projections;
- Step 4: Assess and factor in the process costs or impacts, in light of client interests.

We argue that lawyers should understand the basic process of risk assessment, *before* engaging technological tools, in order to protect against the risk of “losing the forest for the trees.”¹⁰ Having said that, the technology in this area is continuing to develop, and can focus and support risk assessments in important ways.¹¹

Although legal decision support systems dealing with risk have been available for a few decades, they have not been widely used or made publicly available¹² until more recently. Various tools are currently available and marketed to lawyers.¹³ Some of those tools and how they might contribute to risk assessment approaches are described below. It should be noted that no catalogue of these options exists, and it took a surprising amount of research to uncover even these. In this sense, the accessibility of the tools — as well as the development of better ones — remains an issue.

⁸ See John Lande, *Lawyering with Planned Early Negotiation: How You Can Get Good Results for Clients and Make Money* (Chicago: ABA, 2011) (“[s]ome people would be more comfortable with sketches on a yellow pad” at 27) [Lande].

⁹ See Heavin & Keet, *supra* note 5 at 51.

¹⁰ It is possible to get lost in the particulars of a risk analysis using the tools described below and generate a prediction that seems “out of whack.” This makes it important to develop a plausible theory of the case to complement a formal analysis: major discrepancies between the results of the risk analysis and a more intuitive approach should prompt reexamination of the assumptions on which both are based. See Heavin & Keet, *ibid.*, at 40-42.

¹¹ Arno Lodder and John Zeleznikow suggest that the continued evolution of software support tools ought to focus on accessibility to clients and litigants, and eventually reduce reliance on lawyers and mediators. See Arno R. Lodder & John Zeleznikow, *Enhanced Dispute Resolution Through the Use of Information Technology* (Cambridge: Cambridge University Press, 2010) at 13 [Lodder & Zeleznikow].

¹² See John Zeleznikow, “Risk, Negotiation and Argumentation—A Decision Support System Based Approach” (2002) 1:1 L Probability & Risk 37 [Zeleznikow]. Research shows that one-third of the largest 500 American law firms have been using decision-aiding software for the last three decades, see Linda M.V. Lisk, “Decision-Aiding Software and Alternative Dispute Resolution” in Stuart S. Nagel & Miriam K. Mills, eds., *Systematic Analysis in Dispute Resolution* (New York: Quorum Books, 1991) 177 at 197 [Lisk].

¹³ Tools have been available (but not commonly used) since the 1980s. See Zeleznikow, *supra* note 12 at 40 (discussing expert systems built by the Rand Corporation to assist in the settlement of product liability cases).

We have organized the following discussion into categories of tools, including checklists, decision analysis tools, game theory tools, tools which focus on data-mining (with or without probability analysis), and finally, internal organizational (criteria-based) models. The proprietary nature of some of these services makes it difficult to do more than describe some of the approaches. The information itself, however, is valuable, and we offer it with the hope that it will encourage lawyers to explore methods that will match the needs and expectations of their clients. After describing the range of tools available, we note some practical limitations and end with a conclusion that the lawyer's risk assessment "toolbox" — although constantly growing — is perhaps surprisingly full.

I. THE NATURE AND AIMS OF TOOLS AVAILABLE IN A RAPIDLY CHANGING LANDSCAPE

1) Checklists as Tools for Practice

At its base, a solid risk assessment can start with the tool that introduced each of us to the practice of law: the old-fashioned checklist.¹⁴ Although many regulatory bodies and tribunals have their checklists, we draw the reader's attention to the Law Society of British Columbia's "Litigation Checklist" as a good example. Thorough and comprehensive, this checklist covers processes to be followed by legal counsel from the point of initial client contact to the completion of an action after a trial.¹⁵ The checklist can be a starting point for the rigorous review central to the risk assessment process.

The Law Society of British Columbia's checklist includes the ability to specify who is undertaking the steps (the lawyer or legal assistant), the date the task is assigned and the date it is due. Importantly, the checklist reminds counsel to obtain important information, undertake assessments and provide advice at various stages in the litigation process. In addition to providing substantive information about various types of actions, limitations periods, or process considerations, the checklist recommends the timing for: (a) obtaining information and evidence from the client, third parties and other witnesses;¹⁶ (b) the provision of advice on the client's legal position;¹⁷ (c) providing information on costs of the proceeding and its time frame;¹⁸ (d) obtaining and

¹⁴ Westlaw also offers subscription access to checklists for litigation in Ontario, British Columbia, and Alberta (Westlaw, "Civil Litigation Commentary and Checklists", online: <http://www.westlawnextcanada.com/dynamicdata/attacheddocs/litigator/civil_litigation_commentary_and_checklists_f.pdf>). The Lexis Practice Advisor® Canada service includes checklists created by lawyers for a range of topics, including estate litigation, see e.g. "Lexis Practice Advisor® Canada", online: <<http://www.lexisnexis.ca/pdf/LPAC-GenericBrochure-0516.pdf>>.

¹⁵ Law Society of British Columbia, *Practice Checklists Manual: General Litigation Procedure* (LSBC, 1 July 2015), online: <<http://www.lawsociety.bc.ca/docs/practice/checklists/E-2.pdf>> [*Practice Checklists Manual*].

¹⁶ *Ibid.*, ss. 1.4, 1.5, 2.2, 2.10, 2.13, 2.18, 2.19, 2.21, 6.1, 6.4, 6.5, 6.9, 6.10, 6.11, 6.12 (initial contact, initial interview and case preparation).

providing information on the availability of bars to the action¹⁹ or defenses available;²⁰ (e) advising on risks;²¹ and (f) considering settlement and alternative dispute resolution options.²² It should be noted that *all* of these considerations and assessments are required at early stages in the lawyer-client relationship, commencing with the initial contact, first meeting/interview and prior to the commencement of any proceedings. This is a critical point, as too often lawyers defer any analysis of risk until after they obtain all the information possible, such as after discoveries.

After commencement of proceedings the assessments continue to be updated regularly as new information is disclosed and obtained. There are also specific recommendations in the checklist pertaining to negotiation and settlement.²³ The lawyer is to: (a) “Consider all relevant factors on liability and quantum”;²⁴ (b) “Address costs and scale of costs, if appropriate”;²⁵ (c) “Evaluate the case (law, facts, evidence, parties, witnesses, contributory negligence, injuries, etc.)”;²⁶ (d) “Form an opinion on liability and contributory negligence and arrive at the minimum settlement you consider acceptable.”²⁷

Checklists generally have several objectives in mind: they are very helpful in assisting lawyers on how to run a file, with reference to the various professional responsibilities to which the lawyer must adhere. The more comprehensive the checklist, the greater the ability to identify factors and elements that might be missed, thus ensuring that certain complexities of the action are not forgotten and also breaking down this complexity into smaller events or factors, which should then enable predictive judgment to operate more effectively. However, checklists lack the methodologies or processes that could be applied by the lawyer to estimate the probability of the case being successful. That said, if this checklist were followed, legal counsel would have gathered information early and often, information which could be fed into a risk assessment methodology to provide early and on-going risk evaluations as the case proceeds through various stages of the litigation process.

¹⁷ *Ibid*, ss. 2.14, 3.3, 4.1, 4.2, 6.1, 6.3 (initial interview, follow-up from initial interview, commencement of proceedings — plaintiff and case preparation).

¹⁸ *Ibid*, ss. 2.3, 2.5 (initial interview).

¹⁹ *Ibid*, ss. 1.9, 2.13, 2.15, 2.16, 3.1, 3.2, 5.9, 5.10, 5.11 (initial contact, initial interview, follow-up from initial interview, and commencement of proceedings — defendant).

²⁰ *Ibid*, ss. 2.14, 4.1, 4.2 (commencement of proceedings and initial interview).

²¹ *Ibid*, s. 2.3 (initial interview).

²² *Ibid*, ss. 2.3, 2.9 (initial interview).

²³ *Ibid*, s. 8.

²⁴ *Ibid*, s. 8.2.

²⁵ *Ibid*.

²⁶ *Ibid*, s. 8.3.

²⁷ *Ibid*, s. 8.4.

2) Decision Analysis Methodology and the Use of Decision Trees

The checklist can only go so far, however. It identifies factors at issue and introduces diligence to the assessment of law and evidence, but does not break down the problem, weigh those factors and allow precision to enter the projection of likely outcome. For this, the precise relationships of those factors to each other must be considered, and probabilities of success and financial values need to be assigned for each uncertainty. At this point, the lawyer needs to start thinking of the 'economical profile' of the file. Decision analysis is a method that will help at this stage of the analysis. Although it has been discussed for years, and resources can easily be found,²⁸ it is still a method not commonly applied by litigators.

The principle of decision analysis is relatively straightforward. It breaks down the complexity of the legal analysis into its various factors and then allows for the application of predictive judgment to the individual elements or factors, ultimately leading to the aggregation of their probability. Howard Raiffa explains:

The spirit of decision analysis is divide and conquer: Decompose a complex problem into simpler problems, get one's thinking straight in these simpler problems, paste these analyses together with a logical glue, and come out with a program for action for the complex problem.²⁹

Since as early as the 1980s, decision analysis was identified by various legal academics and practitioners as providing a more thoughtful and deliberate framework for identifying and quantifying litigation risk.³⁰ Given the application of decision analysis methodology in the fields of engineering and managerial economics, it is not surprising to find its cross-over into the realm of analyzing the uncertainty in legal disputes.³¹ Decision analysis is commonly visualized in the form of "decision trees." Uncertainties are entered as nodes, with each

²⁸ A Google search of "decision analysis" and "mediation" or "litigation" will produce a range of references. In this paper, we have focused on key resources and our overall analysis of their benefits.

²⁹ Howard Raiffa, *Decision Analysis: Introductory Lectures on Choices under Uncertainty* (Reading, MA: Addison-Wesley, 1968) at 271 [Raiffa].

³⁰ See Eric D. Green, "Corporate Alternative Dispute Resolution" (1986) 1:2 Ohio St J Disp Resol 203 at 229-33; Marc B. Victor, "The Proper Use of Decision Analysis to Assist Litigation Strategy" (1985) 40:2 Bus Lawyer 617 [Victor, "The Proper Use of Decision Analysis"]; Samuel E. Bodily, "When Should You Go to Court?" (1981) 59:3 Harvard Business Rev 103; Ronald David Greenberg, "The Lawyer's Use of Quantitative Analysis in Settlement Negotiations" (1983) 38:4 Bus Lawyer 1557; Stuart S. Nagel, "Applying Decision Science to the Practice of Law" (1984) 30:3 Practical Lawyer 13. It should be noted that decision analysis has been used extensively by business and engineering professionals. Also, an early user and developer of risk assessment tools in the United States describes how early decision analysis tools in the legal setting were developed through discussions with engineers and physicists. See Heavin & Keet, *supra* note 5 (Interview with Risk Assessment Consultant #1).

branch of the tree laying out the way the uncertainty may be resolved.³² The elements of uncertainty in the tree include typical litigation questions: Is there a jurisdictional bar that will be dispositive of the entire action? How credible is the evidence relied upon by the Plaintiff to prove that a particular event has occurred? Is the defence witness credible?

Decision analysis methodology forces counsel to consider smaller and smaller questions or factors, and to think through each aspect of the case. Marc Victor advocates, for example, the use of a three-stage risk analysis process to be applied in the litigation context:³³ (1) identify all the uncertainties in a legal case that may impact on either the finding of liability or on an award of damages;³⁴ (2) determine all the reasons for a favourable and unfavourable finding for each;³⁵ and (3) make a prediction for each identified uncertainty.³⁶ Victor argues that “this technique imposes a discipline on counsel, forcing them to think as carefully and systematically as possible about the evidence and legal issues that are important to their case. It also provides counsel with the means to integrate their assessments of the numerous uncertainties in a logical, unambiguous fashion. Thus, counsel can be more confident of their litigation strategy or settlement decisions.”³⁷

The third step — assigning numeric probabilities to outcomes — is essential to decision analysis’s final output (predicted results).³⁸ The nodes on the tree will

³¹ Howard Raiffa, “Decision Analysis: A Personal Account of How It Got Started and Evolved” (2002) 50:1 *Operations Research* 179 at 181 [Raiffa, “Personal Account”].

³² Marc B. Victor, “Interpreting a Decision Tree Analysis of a Lawsuit” (1988, revised 2001), online: <<http://www.litigationrisk.com/Reading%20a%20Tree.pdf>> .

³³ Marc B. Victor, “Litigation Risk Analysis™ and ADR” in John H Wilkinson, ed., *Donovan Leisure Newton & Irvine ADR Practice Book* (New York: Wiley Law, 1990) at 3, online: <[http://www.litigationrisk.com/Litigation%20Risk%20Analysis\(tm\)%20and%20ADR.pdf](http://www.litigationrisk.com/Litigation%20Risk%20Analysis(tm)%20and%20ADR.pdf)> [Victor, “Litigation Risk Analysis”].

³⁴ *Ibid.* In some of his later work, Victor refined the uncertainty identification stages through using “dependency diagrams” that both identify uncertainty and map the impact such an uncertainty may have on either a finding of liability or on damages. See Craig Glidden, Laura M. Robertson & Marc B. Victor, “Evaluating Legal Risks and Costs with Decision Tree Analysis” in Robert L. Haig, ed., *Successful Partnering Between Inside and Outside Counsel* (West Group & ACCA, 2000) at 12-13, online: <[http://www.litigationrisk.com/ACC%20Chapter%2012%20\(2016%20version\).pdf](http://www.litigationrisk.com/ACC%20Chapter%2012%20(2016%20version).pdf)> [Glidden, Robertson, & Victor].

³⁵ Victor, “Litigation Risk Analysis”, *supra* note 33 at 3.

³⁶ In later writing, Victor has identified his three stages as (1) the creation of dependency diagrams to identify uncertainties and the factors that influence the uncertainties, (2) the creation of decision trees to map each uncertainty, and (3) then the application of quantification (see generally Glidden, Robertson & Victor, *infra* note 112).

³⁷ Victor, “The Proper Use of Decision Analysis”, *supra* note 30 at 617.

³⁸ Resources are also available that focus on a broader step-by-step analysis of the factors influencing a case (even without the focus on mathematical predictions) See e.g. International Institute for Conflict Prevention & Resolution, “Corporate Early Case Assessment Toolkit”, (New York: IICPR, 2009) reprinted in Lande, *supra* note 8 at 165.

each be assigned a numeric probability. Having estimates of their probability applied, the decision tree enables the calculation of the cumulative probability for each possible outcome. This is important, as it ensures that each important aspect of the case has been considered, with a probability assessment made for each individually, rather than possibly being overlooked or ignored due to biases operating in our thinking.

At this juncture, three observations will be made that caution against the application of a numeric probability estimate. First, Victor warns against over-reliance on the computational side of this methodology:

In a *good* decision analysis of a lawsuit, only a small fraction of the effort (perhaps ten percent) is spent in performing the necessary calculations, and only a part of the benefit of conducting the analysis is derived from the quantitative results. Most lawyers who are familiar with how to perform a good decision analysis will attest to the fact that a significant benefit of this methodology is in forcing — and assisting — an attorney to understand his or her case better, at a level of detail sufficient to produce valuable insights for planning pretrial discovery and selecting trial strategy.³⁹

Hoffer concurs with Victor, positing that the benefits of the decision analysis methodology include facilitating the ability of lawyers to structure the issues in the case, determine settlement value, and allocate resources before trial.⁴⁰ Several authors describe this methodology as an effective means to communicate the dispute to the client as well as between co-counsel.⁴¹ Similarly, in mediation practice, the utility of decision analysis has been noted to help the parties to work through a negotiation impasse by enabling both parties to participate in the

In deal-making transactions, as opposed to disputes inside existing legal relationships, risk analysis is different. There, “the alternatives to a settlement are as broad as the parties’ varied interests and outlooks on the future”; see The Honourable George W. Adams, *Mediating Justice: Legal Dispute Negotiation* (Toronto: CCH Canadian, 2003) at 119.

³⁹ Victor, “The Proper Use of Decision Analysis,” *supra* note 30 at 618. Raiffa himself acknowledged that “I completely missed the boat when I published *Decision Analysis* (Raiffa, *supra* note 29). I was so enamored of the power and elegance of the more mathematical aspects of this emerging field that I ignored the nonmathematical underpinnings: how to identify a problem or opportunity to be analyzed, how to specify the objectives of concern, how to generate the alternatives to be analyzed. All this was given short shrift. All that nonmathematical starting stuff was ignored”, Raiffa, “Personal Account”, *supra* note 31 at 184.

⁴⁰ David P. Hoffer, “Decision Analysis as a Mediator’s Tool” (1996) 1 Harv Negot L Rev 113 at 114 [Hoffer].

⁴¹ Hoffer, *ibid.*, at 123-128; Marjorie Corman Aaron, “The Value of Decision Analysis in Mediation Practice” (1995) 11:2 Negotiation J 123 at 126-27 [Aaron]; John Wade, “Systematic Risk Analysis for Negotiators and Litigators: How to Help Clients to Make Better Decisions” (2002) 13:2 Bond L Rev Article 12 at 2, online: < <http://epublications.bond.edu.au/cgi/viewcontent.cgi?article=1216&context=blr> > .

building of an analysis. It enables the creation of a shared structure for analyzing the dispute which is neutral and logical.⁴² If the decision analysis is computer-generated, it also provides a take-away that enables counsel and their clients to reflect on the case outside of the negotiation session.

Several risk analysis consulting services and software businesses rely on decision analysis methodology as their primary platform.⁴³ Some very simple devices are available online. For example, software is available to help with the simple task of drawing a decision tree diagram, such as the one we have used for the illustration we are about to introduce,⁴⁴ and even a very simple litigation decision tree.⁴⁵

Since the power of decisions trees is often said to be visual, we have included a diagram that illustrates its basic structure. It was constructed with diagrammatic software, not with the analytical software which will be described below. Decision trees can focus on liability issues, or damage assessments. The following illustrates what a decision tree focusing on damages might look like.

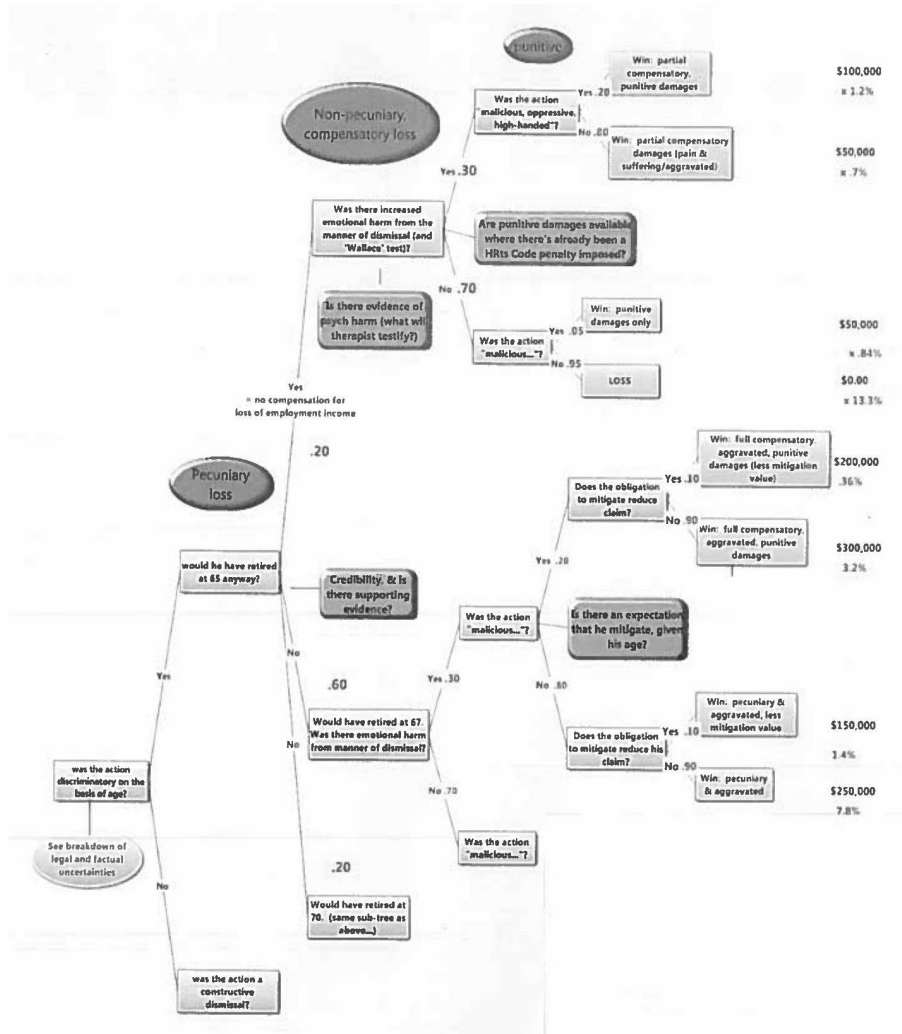
⁴² Aaron, *supra* note 41 at 124, 127-128.

⁴³ We have described the two primary software-based decision analysis tools below: TreeAge Pro[®], and the Dual View Case Assessment[®]. Others building on variations of these exist and we do not claim to have investigated all that are available. For example, an Augmented Option Analysis is claimed to improve on the software decision tree by aggregating probabilities through Excel. See e.g. Paul Prestia & Harrie Samaras, “Beyond Decision Trees: Determining Aggregate Probabilities of Time, Cost, and Outcomes”, *Alternatives to the High Cost of Litigation* 28:4 (4 April 2010) 1, online: <https://www.cpradr.org/resource-center/toolkits/early-case-assessment-guidelines/_res/id=Attachments/index=1/Alternatives%20ECA%20Decision%20Trees%20Articles.pdf>. Other software services which focus on decision trees include Precision Tree (see Palisade, “PrecisionTree”, online: <<http://www.palisade.com/precisiontree/>>), Expert Choice (see “Our Solutions”, online: <<http://expertchoice.com/products-services/>>) and DPL (see Syncopation Software, “Products”, online: <<https://www.syncopation.com/products-main>>).

⁴⁴ See SmartDraw, “Solutions”, online: <<https://www.smartdraw.com/solutions/>>. Also note that some projects are encouraging lawyers to experiment with the use of “data visualisation” tools to assist with client communication. See Legal Design Lab “Our Projects”, online: <<http://www.legaltechdesign.com/our-projects/>>. The website offers a wide range of examples of graphing and diagrammatic tools as vehicles for “legal communication” and part of a useful toolbox. See “Visualize Data Options from Better Evaluation”, online: <<http://www.legaltechdesign.com/LegalDesignToolbox/2015/09/11/visualise-data-options-from-better-evaluation/>>. Dependency diagrams are also commonly illustrated or supported with generic online tools, and may help in the early stages of risk assessment. See Glidden, Robertson & Victor, *supra* note 34.

⁴⁵ See e.g. Klein Dispute Resolution Services, “Create a Decision Tree”, online: <<http://decisiontree.kleinmediation.com/tree/generator>>. Note that this tool reduces the liability assessment to one overall prediction, and the damage assessment to a range with three possible outcomes. The result which is produced, therefore, is very basic, but does allow the user to see a simple risk analysis composition.

Decision Tree on Damages



a) TreeAge ProTM⁴⁶

TreeAge ProTM is an example of decision-analysis software that is commercially available to legal counsel. The product is self-help software, offering the ability for individuals to model a case, analyze the model, and calculate the expected value of the case through identifying all the possible outcomes. The software enables the building of a visual model, or “tree”, to help

⁴⁶ TreeAge Software Inc., “TreeAge ProTM”, online: < www.treeage.com > .

map or visualize the nodes of uncertainty, and all predicted outcomes arising from each node of uncertainty. The software has built-in algorithms that allow the calculation of the expected outcomes when any prediction is changed, allowing for an appreciation of the effect each factor may have on the overall outcome of the dispute. TreeAge Pro[®] is described as computing “expected values of Markov models, and deterministic sensitivity, threshold and probabilistic sensitivity analysis via second order Monte Carlo simulation.”⁴⁷ As mentioned, this is software that can be utilized by the individual user and is not marketed strictly to legal professionals, but also to other sectors and services such as healthcare, strategic planning, and oil and gas industries.⁴⁸ However, useful instruction is available on how litigators can employ the software to fit the legal context.⁴⁹

b) Litigation Risk Analysis[®], Inc.⁵⁰ (U.S.)

Marc Victor offers consulting services to legal professionals and clients using decision tree analysis. As an early contributor to the application of decision-analysis to legal problems, he was one of the first in the United States to offer presentations, scholarly publications, training and consulting services on the use of decision analysis.

c) Win Before Trial⁵¹ and The Mediator’s Assistant⁵² (U.S.)

Michael Palmer, a mediator and lawyer, has also developed a case valuation methodology including proprietary Excel-based software, the Dual View Case Assessment[®], to calculate the net present expected value of a case from the perspective of both sides of a file.⁵³ Palmer uses decision analysis as the basis for

⁴⁷ Benjamin P. Geisler, “Automating First- and Second-order Monte Carlo Simulations for Markov Models in TreeAge Pro” in Shaul Mordechai, ed., *Application of Monte Carlo Method in Science and Engineering* (Intech, 2009) 917 at 919, online: <<http://www.intechopen.com/books/applications-of-monte-carlo-method-in-science-and-engineering>> .

⁴⁸ TreeAge Software Inc., “Products”, online: <<https://www.treeage.com/products/>> ; TreeAge Software Inc., “Industries”, online: <<https://www.treeage.com/industries/>> .

⁴⁹ Marc B. Victor, *Getting Started With TreeAge Pro for Litigators* (Litigation Risk Analysis, 2005). This guide is available for purchase from Marc Victor’s website. See Litigation Risk Analysis Inc., “Getting Started with TreeAge Pro . . . For Litigators”, online: <<http://www.litigationrisk.com/m-sw-full-lra-man.htm>> . Marjorie Corman Aaron teaches a course in decision analysis using TreeAge at the University of Cincinnati College of Law. See Marjorie Corman Aaron, *Syllabus and In-Class Agendas: Advanced Decision Analysis* (University of Cincinnati College of Law, Spring 2016), online: <<https://www.law.uc.edu/sites/default/files/01%202016%20Decis-anal-adv-syll-aaron.pdf>> [Marjorie Corman Aaron].

⁵⁰ “The Developer of Litigation Risk Analysis[®]”, online: <<http://www.litigationrisk.com/m-ov-mbv%20bio.htm>> .

⁵¹ Win Before Trial, online: <<http://www.winbeforetrial.com/>> .

⁵² Win Before Trial, “The Mediator’s Assistant”, online: <<http://www.winbeforetrial.com/the-mediators-assistant.html>> .

his proprietary software, but also encourages counsel to consider and value risks such as reputational risk, or value costs such as emotional strain or psychological time in having to pursue litigation. Palmer's methodology breaks down the analysis of net present expected value into four elements: (1) liability; (2) dispositive contingencies;⁵⁴ (3) damages; and (4) costs (itemized expenses and professional fees).⁵⁵ Unlike traditional decision analysis, Palmer introduces a range of probability calculations into his liability assessment as well as a weighted average into his damages assessments.⁵⁶

In his approach to liability assessment, Palmer breaks down each cause of action into its elements and then proposes that legal counsel provide a low, medium and high estimate of the probability of proving that element.⁵⁷ He then averages those estimates to arrive at a single probability assessment for each element. The probability of proving each cause of action then, is the product of proving each individual element, calculated by multiplying the estimate of each element together to arrive at an overall probability estimate for proving the cause of action.⁵⁸

⁵³ Michael Palmer, "Using the Case Value Analyzer[®] to Estimate the Financial Value of a Lawsuit" (2013) 6:1 NY Dispute Resolution Lawyer 38, online: <http://www.winbeforetrial.com/uploads/9/6/7/6/9676143/using_the_case_value_analyzer_to_analyze_the_financial_value_of_a_lawsuit_video_link.pdf>. See also Michael Palmer, "Which is Better? The Deal or the Ordeal?: An Examination of Some Challenges of Case Valuation" (2010) 36:3 Vt Bar J 1 [Palmer, "The Deal or the Ordeal?"]. Also see the Win Before Trial website and its updated descriptions of the Case Assessment System (*supra* note 52).

⁵⁴ In the authors' opinion, the frequency of dispositive contingencies in Canadian litigation is significantly lower than in the United States. As a result, if applied in Canada, while important, it may be treated as a liability question rather than as its own step of analysis. However, as noted, this is a perception of frequency only and may merit further empirical study to confirm. One lawyer we interviewed identified this as a difference between the Canadian and U.S. legal systems, where it was surmised that a higher reliance on juries in civil matters may result in more judge-only pre-trial motions to dismiss, a practice not as heavily utilized in Canadian civil cases. See Heavin & Keet, *supra* note 5 at (Lawyer #10) (Workshop Participant, Lawyer #10).

⁵⁵ As a result of Michael Palmer sharing proprietary methodologies with the authors, and spending numerous in-person and online meetings with us, we have been able to better understand his approach and methodology than some other proprietary services that are offered.

⁵⁶ Palmer breaks down each cause of action into its elements and then proposes that legal counsel provide low, medium or high estimates for the probability of proving each action. This introduces a somewhat different treatment of liability than that envisioned in the typical decision tree.

⁵⁷ For example, in estimating the probability of proving the Defendant owed a duty of care to the Plaintiff, Palmer would have three estimate of proving duty of care, (low 90%, medium 92%, high 97%) and take the average (93%) to arrive at his estimate. You will note that the range of probabilities applied appears to be ascertaining how certain legal counsel is in her prediction.

⁵⁸ This is the product rule: "to figure out the chance of several probabilities all going a

In his damages estimate Palmer employs a weighted average estimate, itemizes each head of damage, applying low, medium and high probability predictions to determine a possible range of damages, and then calculates a weighted average estimate of damages based on these individual assessments.⁵⁹ This damages estimate allows for a greater range by which to consider a damages prediction beyond a single decision tree analysis. Palmer's Dual View Case Assessment[™] tool also employs cost shifting between the Plaintiffs and Defendants, which may or may not be appropriate in the Canadian context.⁶⁰

3) Model-Based Analytics

Some technology-based services integrate game theory⁶¹ into their analysis, making the analysis less of an analysis of expected value and more about using game theoretic models, which capture the bilateral and strategic interaction between the parties and their contingent claims.

a) SettlementAnalytics[™] (U.S.)

SettlementAnalytics[™] incorporates a feature that provides research and advice focusing on litigation valuation, settlement optimization and legal claims risk management.⁶² The principal of the business, Robert Parnell, offers

particular way, you multiply them by one another and find your answer in the product". For example, the chances of getting heads when flipping a coin is 50%. The chances of getting heads from two coin flips is the product of the probability of getting heads on the first and second coin flip, or 50% x 50% or 25%. The product rule works only if the events in question are independent. See Ward Farnsworth, *The Legal Analyst: A Toolkit for Thinking about the Law* (Chicago: University of Chicago Press, 2007) at 273 and 278.

⁵⁹ For example, to calculate an estimated probability of proving pain and suffering, Palmer's methodology would require applying a low estimate of value and probability of proof (\$50,000 @ 25%), a medium estimate (\$80,000 @ 40%) and a high probability (\$100,000 @ 35%). The weighted average estimate of pain and suffering would then be calculated at \$79,500. In this example, it is critical that the sum of the probability estimates is 100%.

⁶⁰ Cost-shifting may be more automatic in some U.S. jurisdictions than in Canada, as the rules that apply to both the value of costs to be awarded and cost-shifting will vary. See Manitoba Law Reform Commission, *Costs Awards in Civil Litigation*, Report No 111 (Winnipeg: Queen's Printer, 2005), online: < http://www.manitobalawreform.ca/pubs/pdf/archives/111-full_report.pdf. > .

⁶¹ Game theory is a method used in business and mathematical economics to predict and model how competing players will interact with one another. The assumption of game theory is that the players will act rationally to maximize their own utility, with the results of the game representing the utility of the group. While game theory has been used to describe and model past behavior, it has also been applied as prescriptive for predicting future outcomes. See Roger B. Myerson, *Game Theory: Analysis of Conflict* (Cambridge, MA: Harvard University Press, 1991) at 1 [Myerson]; Roger A. McCain, *Game Theory: A Nontechnical Introduction to the Analysis of Strategy*, 3rd ed. (Hackensack, NJ: World Scientific, 2014); Simon Parsons, Piotr Gmytrasiewicz & Michael Wooldridge, eds., *Game Theory and Decision Theory in Agent-based Systems* (Boston: Kluwer Academic, 2002).

consulting, training services, file management software as well as use of its proprietary “OptiSettle,” software platform, which incorporates information economics, Monte Carlo⁶³ simulation, financial analysis and quantitative data into one package. The application of game theory and Monte Carlo simulation is used to model a range of possible outcomes in legal disputes involving multi-variable uncertainty.⁶⁴ By including a range of uncertainties, SettlementAnalytics[®] proposes that OptiSettle is able to model the likely best and worst case scenario outcomes in a negotiation or settlement offer, as well as compare these options to the likely trial outcome amounts.⁶⁵

As Robert Parnell explains, SettlementAnalytics’s proprietary model “calculates the expected value of (or ‘wealth’ derived from) a legal claim as the probability-weighted combination of net present value cash flows from both trial and settlement.”⁶⁶ Parnell distinguishes his approach from what he calls “conventional claim valuation methods” which he says “equate claim value with trial value.”⁶⁷ Instead, his approach considers “the impact of different degrees of trial uncertainty on the expected wealth (expected value of the legal claim) versus settlement offer relationship across the range of potential rational settlement offers.”⁶⁸ He is critical of applying decision tree analysis to complex litigation problems as, in his assessment, it can fail to capture the costs associated with uncertainty in the damages award by providing only a single assessment based on average expectations (average expected liability and average expected damages award). Parnell proposes that his model, using a game theory approach, will better capture the nuances of trial risk on its expected value.⁶⁹

4) Data-Mining With or Without Probability Analysis

It has often been said that a risk analysis is only as good as the information that goes into it: “garbage in, garbage out.”⁷⁰ Another way to put this, from an actuarial point of view, is that the better the quality of information used to support a probability assessment, the more secure the prediction.⁷¹ Aside from

⁶² SettlementAnalytics[®], “Intro: The Game Theory of Litigation”, online: <<https://settlementanalytics.com/about/introduction>> .

⁶³ Monte Carlo methods rely on repeated random sampling to generate a probability distribution of potential outcomes.

⁶⁴ Myerson, *supra* note 61.

⁶⁵ SettlementAnalytics[®], “OptiSettle Functionality”, online: <<https://settlementanalytics.com/resources/opti-settle-applications/>> .

⁶⁶ Robert Parnell, “Pricing Trial Risk: The Tangible Cost of Uncertainty in Commercial Litigation” (25 March 2015), online: <<https://settlementanalytics.com/resources/dynamic-illustrator/price-trial-risk/>> .

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*

⁶⁹ *Ibid.* It is difficult to properly consider this criticism without a better understanding of the nature of the proprietary model being used in his ‘OptiSettle’ platform.

⁷⁰ See Palmer, “The Deal or the Ordeal?”, *supra* note 53 at 3.

the reporting of judgments, the civil justice system has not had a tradition of transparent data collection and accessible data bases.⁷² Some software and consulting services have begun to move into the information gap. These do not utilize decision analysis or game theory methodologies, but rely on ‘big data’ from legal databases to provide statistical information to legal professionals about past court decisions or settlement offers. Sometimes those tools include probability assessments, drawing on the data, and sometimes they do not.⁷³

a) Case Evaluator on Westlaw (U.S.) and LexisNexis Verdict and Settlement Analyzer (U.S.)

Case Evaluator is a litigation management tool created by Thomson Reuters Westlaw for use in the United States.⁷⁴ The tool makes use of legal databases in the United States to generate reports which can be used to evaluate potential cases, analyze verdict trends, develop negotiation and settlement strategies and obtain information about medical and expert testimony in similar cases. Inputs available to the Case Evaluator report builder include case type, date range, jurisdiction, injury type, industry and company involved, and a range of damages. Upon entering these inputs, the tool generates a report summarizing similar cases under three major headings: verdict and settlement trends, summaries and court documents, and medical and expert materials. The verdict and settlement trends section lists jury verdict data in the chosen date range sorted by county or federal district. This data includes trends in Plaintiff verdicts, Defendant verdicts, and settlements, as well as median, average, and maximum settlement amounts. Also included is a list of the cases resulting in the

⁷¹ Heavin & Keet, *supra* note 5 at “Actuary”. Others argue that access to ‘big data’ may not be sufficient to improve predictions, if the samples of the data, particularly due to their small size, make them subject to sampling errors such that one cannot distinguish between trends and random performance. See: Robert Parnell, “When Big Data isn’t Enough: Limitations In Legal Data Analytics” (September 2016), at 3, online: <<https://settlementanalytics.com/wp-content/uploads/2016/09/When-Big-Legal-Data-Isnt-Big-Enough-Limitations-in-Legal-Data-Analytics.pdf>> .

⁷² The importance of diffusing information and the limited availability of data is emphasised in *Reaching Equal Justice*, *supra* note 7, at 60 and 142, respectively.

⁷³ A perceptive account of the emergence and implications of “big data” in the law, especially in connection with litigation and negotiation is given by Stevenson & Wagoner, *supra* note 4. See also Daniel Martin Katz, “Quantitative Legal Prediction — Or — How I Learned to Stop Worrying and Start Preparing for the Data-Driven Future of the Legal Services Industry” (2013) 62:4 Emory LJ 909 at 936-942 [Katz] (dealing with data-driven tools for predicting litigation outcomes). See also John O. McGinnis & Russell G. Pearce, “The Great Disruption: How Machine Intelligence Will Transform the Role of Lawyers in the Delivery of Legal Services” (2014) 82:6 Fordham L Rev 3041 at 3052-53 [McGinnis & Pearce] (forecasting the impact on the practice of law of machine intelligence during the next decade).

⁷⁴ Thomson Reuters Westlaw, “Case Evaluator on Westlaw”, online: <<http://legalsolutions.thomsonreuters.com/law-products/westlaw-legal-research/litigator/case-evaluator>> .

top twenty largest awards within the chosen parameters. The summaries and court documents section gives excerpts of relevant documents from WestlawNext collections including jury verdict and settlement summaries, trial court memoranda, appellate court documents, and appellate decisions. The medical and expert materials section provides tables of relevant medical reference material including sections from the Attorneys Medical Advisor database, medical illustrations, names and types of experts who have testified on the matter in the past, and excerpts from expert testimony.⁷⁵ This service, however, is only available for U.S. cases. It also has the benefit of having publically available settlement data information from which to draw settlement and verdict ranges; similar data is not available in Canada. As a model, if replicated in Canada, it may be useful in reducing the transactions costs associated with trying to obtain data on case-type, damages and settlement ranges, or frequency of certain applications being granted.

WestlawNext offers a Litigation Quantum service that is available in Canada.⁷⁶ It features data about litigation quantum in eight areas: breach of contract, child support, defamation, dependents' relief, environmental offences sentencing, personal injury, spousal support, and wrongful dismissal.⁷⁷ The underlying data are drawn from trial and appeal decisions, the Canadian Abridgement, and other digests. The Litigation Quantum tool can generate graphical representations of awards, which are disaggregated by type (e.g. general damages, aggravated damages, punitive damages) and some statistical analysis.⁷⁸ Like the Case Evaluator, Litigation Quantum is intended to assist counsel in valuing claims, but its functionality is narrower. It does not include settlement data, or access to the other materials available through the Case Evaluator, and its search seems to be less granular than the Case Evaluator's.

LexisNexis's Verdict & Settlement Analyzer⁷⁹ appears to be comparable to Westlaw's Case Evaluator. Like the Case Evaluator, it analyzes settlement and verdict data (over 1.1 million verdicts and settlements, according to the product information) to identify trends, and assist in risk assessment, case valuation, and litigation planning.⁸⁰ It generates graphical reports that are customized by adjusting a range of variables, including jurisdiction, practice area, award amount, and date ranges.⁸¹ The Verdict & Settlement Analyzer is available only in the United States.

⁷⁵ Thomson Reuters Westlaw, "Sample Report", online: <<http://static.legalsolutions-thomsonreuters.com/static/pdf/CaseEvaluatorSampleReport.pdf>> .

⁷⁶ WestlawNext Canada, "Quantums", online: <<http://www.westlawnextcanada.com/quantums>> .

⁷⁷ *Ibid.*

⁷⁸ *Ibid.*

⁷⁹ LexisNexis, "LexisNexis Verdict & Settlement Analyzer", online: <<http://www.lexisnexis.com/en-us/products/verdict-and-settlement-analyzer.page>> .

⁸⁰ LexisNexis, "LexisNexis Verdict & Settlement Analyzer Brochure", online: <<http://www.lexisnexis.com/pdf/Verdict-Settlement-Analyzer-brochure.pdf>> .

b) *Lex Machina*⁸², *Litigation Analytics (U.S)* and *Premotion*⁸³

Three of the most ambitious entrants into the legal data analytics market are Lex Machina (LexisNexis), Bloomberg Law[®]'s Litigation Analytics, and Premonition[™], AI. Marketing itself as “Moneyball for lawyers,”⁸⁴ Lex Machina was initiated by the Law School and department of Computer Science at Stanford,⁸⁵ and is now a subsidiary of LexisNexis. Its suite of applications is available to both commercial clients and outside counsel. What appears to set it apart from offerings like the Case Evaluator and Verdict & Settlement Analyzer is the breadth of the data Lex Machina draws from proprietary and public sources (“millions of pages of litigation information”⁸⁶), and the granularity of analysis it can generate. Its tools are built around an engine that cleans and structures data from PACER, EDIS, and the USPTO.⁸⁷

Bloomberg Law[®] has also recently entered the field of big data litigation analysis with Bloomberg Law[®] Litigation Analytics.⁸⁸ Similar to Lex Machina,

⁸¹ *Ibid.*

⁸² Lex Machina, online: < <https://lexmachina.com/> > .

⁸³ Bloomberg Law, “Litigation Analytics: Developing a Data-Driven Litigation Strategy” (1 November 2016) online: < <http://about.bna.com/litigation-analytics/> > . Legal Insider, “Litigation Analytics: Bloomberg enters stage left” (19 October 2016) online: < <https://www.legaltechnology.com/latest-news/litigation-analytics-bloomberg-enters-stage-left/> > .

⁸⁴ Lex Machina, “Moneyball for Lawyers: How Legal Analytics[®] are Transforming the Practice of Law”, online: < <https://lexmachina.com/wp-content/uploads/2015/03/Moneyball.pdf> > .

⁸⁵ Lex Machina, “About Us”, online: < <https://lexmachina.com/about/> > . See e.g. Stevenson & Wagoner, *supra* note 4 at 1364-65; McGinnis & Pearce, *supra* note 73 at 3053; Mark K. Osbeck, “Using Data Analytics Tools to Supplement Traditional Research and Analysis in Forecasting Case Outcomes” (2015) 20 Leg Writing 33 at 36 [Osbeck]; Katz, *supra* note 73 at 939-940. Lex Machina was voted the “Best Big Data Legal Analytics Solution” by readers of the *Recorder*, a US legal industry publication, in 2014, 2015, and 2016, and “Best New Product of the Year” by the American Association of Law Libraries in 2015. See Lex Machina, “Lex Machina Wins Best Big Data Legal Analytics Solution 2016” (7 September 2016), online: < <https://lexmachina.com/media/press/lex-machina-wins-best-big-data-legal-analytics-solution-2016/> > .

⁸⁶ Lex Machina “What We Do”, online: < <https://lexmachina.com/what-we-do/> > ; “Legal Analytics Shop Talk with Lex Machina” (2016) 20:3 AALL Spectrum 40 at 40; Jason Koebler, “Rise of the Robolawyers: How legal representation could come to resemble TurboTax”, *The Atlantic* (April 2017) 26 at 26.

⁸⁷ Lex Machina, “How It Works”, online: < <https://lexmachina.com/how-it-works/> > . PACER is a database of court documents and records from US federal courts, USTPO is the US Patent and Trademark Office, and EDIS is the “repository for all documents filed in relation to an investigation conducted by the United States International Trade Commission”, see United States International Trade Commission, “Home”, online: < <https://edis.usitc.gov/edis3-external/app> > .

⁸⁸ Bloomberg Law, “Bloomberg Law Litigation Analytics”, online: < <https://www.bna.com/bloomberg-law-litigation-m57982078880/> > .

Litigation Analytics boasts access to significant data, relying on Bloomberg company information⁸⁹ and legal data from Bloomberg Law's docket and case law collection⁹⁰, including data from "more than 3.5 million companies, 7000 law firms and all active federal district court judges."⁹¹ At its inception, Lex Machina focused on intellectual property litigation (copyright, patent and trademark litigation).⁹² Its applications now also cover antitrust, securities and commercial litigation.⁹³ Bloomberg Law's data set however, appear to include more practice areas.⁹⁴

Premonition[®], AI Analytics markets itself as having "The World's Largest Collection of Court Data", including the United States (Federal and Circuit Courts). However, its data set also boasts UK High Courts, the Virgin Islands, Ireland, Australia and the Netherlands.⁹⁵ It has also recently announced the launch of Premonition India, in partnership with LQ Global Services.⁹⁶

Both Bloomberg Law's Litigation Analytics and LexisNexis Lex Machina, can be used to access and evaluate the success rate of particular kinds of motions before particular judges; to quantitatively analyze which type and style of motion is likely to succeed before a judge; to review records of attorneys and firms with a view to predicting their behavior in litigation; to identify litigation patterns exhibited by parties to a dispute; to forecast damages; or to predict trial times.⁹⁷ While Premonition, AI Analytics also provides analysis on the success rates of attorneys and litigation behavior on a court, judge and opposing counsel basis, it

⁸⁹ "Bloomberg's Company & Market Information", online: < <https://www.bna.com/whybloomberglaw/> >

⁹⁰ "Primary Content & Expert BNA Analysis", online: < <https://www.bna.com/why-bloomberglaw/> >

⁹¹ Bloomberg Law, "Insight Center", online: < <https://www.bna.com/bloomberg-law-litigation-m57982078880/> >

⁹² Robert J. Ambrogi, "Four Big Ideas in Technology", *Law Practice Magazine* 42:4 (July/August 2016) 22 at 22.

⁹³ Jennifer Dixon, "Review of Legal Analytics Platform" (23 September 2016), *Litigation-World*, online: < <https://lexmachina.com/wp-content/uploads/2016/10/2016-09-23-Lex-Machina.pdf> > .

⁹⁴ For a complete listing of Bloomberg Law Practice Areas, see "Practice Areas", online: < <https://www.bna.com/bloomberglaw/> >

⁹⁵ Premonition, "Court Data", online: < <https://premonition.ai/court-data-2/> > .

⁹⁶ "Legal Analytics Firm Brings 'Very, Very Unfair Advantage in Litigation' to Indian Courts", *International Business Times* (25 May 2017), online: < <https://premonition.ai/back-newsroom-legal-analytics-firm-brings-unfair-advantage-litigation-indian-courts/> > .

⁹⁷ Lex Machina, "Legal Analytics Platform", online: < <https://lexmachina.com/legal-analytics/> > . This list does not capture the full range of functionality of Lex Machina's apps, which is described in great detail at the company's website. Paige E. Kohn, "How Artificial Intelligence is Revolutionizing the Legal Practice" (2016) 43:1 ABA Litigation 12 at 13; Andrew Kasabian, "Litigating in the 21st Century: Amending Challenges For Cause in Light of Big Data" (2016) 43:1 Pepp L Rev 173 at 206.

also markets other litigation analysis data, including expert witness past case results (similar to WestLaw Case Evaluator), in addition to ranking Arbitrators based on past decisions and prior practice track record.⁹⁸

c) *Loom Analytics (Canada)*⁹⁹

Loom Analytics is also a commercially available service — akin in some ways to Lex Machina and Legal Analytics — that offers to provide analysis based on Canadian case-law data.¹⁰⁰ Relying on the information publically available through the Canadian Legal Information Institution (CanLII),¹⁰¹ it offers to provide statistical information about the outcomes of motions and trials, narrowing the results for jurisdiction, level of court and judge. This service, however, is continuing to develop, with data currently available only for 2010-2017 Alberta, British Columbia and Ontario superior courts, and Ontario Court of Appeal.¹⁰² There is also no data publically available in Canada on either successful or rejected settlement offers, which, in light of dwindling civil trials in Canada, could be a significant impediment to the usefulness of the data as it relates to damages claims.¹⁰³ However, as a first entry into this type of service provision in Canada, it appears to be an attempt to fill a much needed gap in data availability and analysis.¹⁰⁴

⁹⁸ Premonition, “Legal: Litigate Intelligently”, online: <<https://premonition.ai/law/#1473189571824-3d711aff-1fa9>> .

⁹⁹ Loom Analytics, online: <<http://www.loomanalytics.com/>> .

¹⁰⁰ *Ibid.* See also Mona Datt, “Legal Analytics for Risk Assessment and Informed Decision-Making” (Paper prepared for the OBA TECHxpo 2016: Evolution and Disruption, Toronto, 9 November 2016), online: <<https://static1.squarespace.com/static/57f82b012994cab2a8e22bad/t/5840782a2994ca259370e564/1480620076019/Legal+analytics+for+risk+assessment+and+decision+making.pdf>> .

¹⁰¹ CanLII, online: <<http://www.canlii.org/>> .

¹⁰² Loom Analytics, “About Us”, online: <<http://www.loomanalytics.com/faq-data/>> .

¹⁰³ See generally Trevor C.W. Farrow, *Civil Justice, Privatization, and Democracy* (Toronto: University of Toronto Press, 2014) [Farrow]. See especially Farrow, *ibid.*, ch. 4.

¹⁰⁴ Loom Analytics was the winner of the “People’s Choice Award” at the Canadian Bar Association’s inaugural legal startup pitch competition in 2016. See Victor Li, “Tech startups shine in competition at the Canadian Bar Association annual meeting”, *ABA Journal* (17 August 2016), online: <http://www.abajournal.com/mobile/article/contract_review_software_wins_pitch_competition_at_the_canadian_bar_associa> . A series of reports published by Loom illustrate both its promise and present limitations — principally small data sets. See Mona Datt & L.J. Kadey, “Summary Judgment: The Achilles’ Heel of the Self-Represented Litigant” (1 March 2016), *illoominate*, online: <<http://blog.loomanalytics.com/summary-judgment-the-achilles-heel-of-the-self-rep-litigant/>> ; Mona Datt & L.J. Kadey, “Do civil trials afford better outcomes for survivors of sexual assault?” (4 April 2016), *illoominate*, online: <<http://blog.loomanalytics.com/do-civil-trials-afford-better-outcomes-for-survivors-of-sexual-assault/>> ; Mona Datt & L.J. Kadey, “Is winning a medical malpractice case against a doctor at trial a long shot?”, *illoominate*, online: <<http://blog.loomanalytics.com/winning-a-medical-malpractice-case-against-a-doctor-at-trial-is-a-long-shot/>> ; Mona Datt & L.J. Kadey, “Summary Judgments Two Years After Hryniak: Has Anything Changed?” (4

d) *Picture It Settled*®¹⁰⁵

Some programs and services focus primarily on data and projections derived from settlement data. *Picture It Settled*® is a predictive negotiation planning technology created by Don Philbin, a Texas attorney-mediator,¹⁰⁶ and the Southwest Research Institute®¹⁰⁷. The software is designed to help the user plan a negotiation strategy that will induce cooperative behavior.¹⁰⁸ It provides three tools for users: probabilistic evaluation of cases using predictions of high, medium, low and zero outcomes weighted by probability and anticipated costs; and two tools that use data from about 20,000 negotiations to assist negotiators in designing strategy by anticipating the behavior of other parties and forecasting settlement amounts.¹⁰⁹

Picture It Settled® also encourages anonymous donations of settlement data through its Data Contributor program.¹¹⁰ The decision to offer this technology through free apps for most mobile devices (albeit with limited functionality) has assisted in increasing the quantity of anonymous case settlement information.¹¹¹

e) *Internal Risk Analysis Models*

An intriguing development, although relatively undocumented, is the experience of some organizations in designing their own internal risk assessment models and/or relying on internally collected data. Organizations which may benefit and have the resources to do this are the “repeat litigation players,” such as insurance companies or litigation-funding businesses. In the context of insurance, the impetus for the development of an internal data base may come not from the legal department, but from the business area responsible for overall costs and outcomes. The pressure towards business accountability would create a logical incentive for the adoption of an internal information management tool, although it is often resisted even by internal lawyers.¹¹² Passing reference is found to some internal systems such as this in the

March 2016), *illoominate*, online: <<http://blog.loomanalytics.com/summary-judgments-two-years-after-hryniak-has-anything-changed/>>. Loom Analytics has also announced on 21 March 2017 service relationships with both Bennett Jones and Gowlings WLG. See Loom Analytics, online: <<http://www.loomanalytics.com/announcements/>>.

¹⁰⁵ *Picture It Settled*, online: <<http://www.pictureitsettled.com/>>.

¹⁰⁶ *Picture It Settled*, “About Don Philbin”, online: <<http://www.pictureitsettled.com/about-don-philbin/>>.

¹⁰⁷ Southwest Research Institute (SwRI), online: <<http://www.swri.org/>>.

¹⁰⁸ “Speeding Up Settlement with a Predictive App”, *Corporate Counsel* (3 February 2014), online: <<http://www.corpcounsel.com/id=1202640996797?sreturn=20140101074928>>.

¹⁰⁹ *Picture It Settled*® Data, “Products”, online: <<http://www.pictureitsettled.com/>>.

¹¹⁰ *Picture It Settled*® Data, “Data Contributor”, online: <<http://www.pictureitsettled.com/data-contributor/>>.

¹¹¹ *Ibid.*

literature.¹¹³ This makes sense: those same pressures are the ones that are vital to the identification of litigation reserves. Those same organizations will be aware of the empirical studies documenting rates and values of decision-making errors in the settlement and litigation of files,¹¹⁴ and will be interested in strategies to reduce such “errors.”

Where the organization faces a certain type of repeat litigation (for example, personal injury or long-term disability claims), their internal risk assessment models might focus on typical vulnerabilities and common legal and evidentiary issues. In the example provided to us, the model identified five or six factors, sensitivities which — over a large block of cases — could statistically be shown to determine the outcome of this particular kind of case.¹¹⁵ In this way, the internally-developed model can be custom-made, avoiding the exhaustive cataloguing that might be required using generic tools.

This is perhaps why Zeleznikow refers to these types of systems as “rule-based systems”, with the decision analysis software above better described as “open-textured” systems: “Open-textured predicates contain questions which. . . require some legal knowledge on the part of the user in order to answer.”¹¹⁶ In contrast, factors in a rule-based system are limited and have been elicited from an expert review of what determinants have been in the past, in order to produce a hierarchy of factors. In this way, internal organizational risk assessment tools that are criteria-based follow the approach used by risk assessment tools in the criminal justice context, where volumes of data allow actuarial assessment of those factors which can be shown to determine outcomes. Thus, insurance companies may have caught “the next wave” of litigation decision-making, and some suggest that there is much for lawyers to learn from this shift to “algorithmic” practice models.¹¹⁷ Pavillet, a personal injury lawyer, points out that “few entities rationalize risk as mathematically as insurers, or have as much data to do so.”¹¹⁸ Rapidly expanding access to data means that insurers can more easily craft instructions to lawyers based on analysis of fact-patterns, resulting in a “fundamental shift” in the lawyer-client relationship.¹¹⁹ Practitioners such as Pavillet suggest that lawyers should follow the lead of

¹¹² Heavin & Keat, *supra* note 5, interview with Risk Analysis Consultant #4.

¹¹³ For example, Zeleznikow refers to examples such as WIRE IQ and LDS — early internal assessment systems to assist with the settlement of personal injury or product liability claims (*supra* note 12 at 40-42).

¹¹⁴ For references see Heavin & Keat, *supra* note 5 at 4-6.

¹¹⁵ Heavin & Keat, *ibid*, interview with Risk Analysis Consultant #4.

¹¹⁶ Zeleznikow, *supra* note 12 at 43.

¹¹⁷ Geoffroy Pavillet, “Algorithmic Lawyering”, *Lawyers Weekly* 33:13 (26 July 2013) 14 at 14-15 [Pavillet].

¹¹⁸ *Ibid*, at 14.

¹¹⁹ *Ibid*, at 15.

their sophisticated organizational clients, and explore ways that coded decision-making could decrease reliance on expert and seemingly subjective legal advice.

5) Other Tools to Improve the Integrity of Decision-Making

Resources exist to help lawyers become more mindful about how they make decisions¹²⁰ and better recognize common decision-making traps and patterns.¹²¹ Some resources focus directly on lawyers as decision-makers, with guided advice on how to recognize cognitive barriers such as the biases which appear in various kinds of legal defenses,¹²² as well as techniques for bias-screening.¹²³

For example, DecisionSet® is a decision services company that provides services aimed at improving decision-making and problem-solving skills in legal practice.¹²⁴ DecisionSet's principal analyst is Randall Kiser, one of the few researchers in the United States who has undertaken empirical research into decision-making error by Plaintiffs and Defendants.¹²⁵ The services he offers rely on the use of the empirical data that was generated in his two studies and the variables he identified in those studies that resulted in a decision-making error. DecisionSet® offers four services to legal counsel to help in their risk assessment: the first is a decision-making styles survey and report that identifies decision-making propensities correlated with poor outcomes; the second is a general decision-making training course that informs legal professionals of decision-making heuristics, biases and illusions and methods to reduce their impact; the third is structured interviews of decision-makers to understand how they make decisions and provide corrective measures; and the fourth is an analysis of datasets to identify predictor variables and build predictive models of adverse outcomes.¹²⁶

¹²⁰ Peter H. Huang, "How Improving Decision-Making and Mindfulness Can Improve Legal Ethics and Professionalism" (2015) 21 *JL Business & Ethics* 35. There are also a number of decision support software tools which are based on deliberate negotiation models, taking the user through checklists or ranges of questions and choices. See Lodder & Zeleznikow, *supra* note 11 at 88.

¹²¹ See Heavin & Keet, *supra* note 5 at 8-11. Many resources are available. See e.g. John S Hammond, Ralph L Keeney & Howard Raiffa, *Smart Choices: A Practical Guide to Making Better Decisions* (New York: Broadway Books, 2002); J. Edward Russo & Paul J.H. Schoemaker, *Decision Traps: the Ten Barriers to Brilliant Decision-Making and How to Overcome Them* (New York: Fireside, 1989).

¹²² Randall L. Kiser, *Beyond Right and Wrong: The Power of Effective Decision Making for Attorneys and Clients* (Berlin: Springer, 2010) ch. 8 at 283 [Kiser].

¹²³ *Ibid.*, ch. 9 at 309.

¹²⁴ DecisionSet, "About Us", online: <<http://www.decisionset.com/about-us.html>> .

¹²⁵ See Randall L. Kiser, Martin A. Asher & Blakeley B. McShane, "Let's Not Make a Deal: An Empirical Study of Decision Making in Unsuccessful Settlement Negotiations" (2008) 5:3 *J Empirical Leg Stud* 551. And see Kiser, *supra* note 122.

¹²⁶ Personal communication from Randall L. Kiser to the authors (13 September 2016).

II. PROMISE AND LIMITATIONS OF TOOLS TO SUPPORT RISK ASSESSMENT

In reviewing the methodologies, software and services currently available to legal professionals to conduct risk assessments, some observations can be made. With the exception of the statistical information provided by data-mining previous decisions, all analysis methodologies invite the legal professional to engage with mathematical calculations that are often beyond their comfort zone¹²⁷ and are not systematically taught in law school curriculums.¹²⁸ This will most likely change as client demands and marketing by service providers will continue to target legal professionals, and yet the methodology itself presents some initial limitations to the classically-trained lawyer.

Second, information gaps continue to operate as a limitation. There is a lack of data available on settlement offers and agreed settlements, particularly in the Canadian context.¹²⁹ In light of diminishing civil trials, this raises serious concerns about what information or experience lawyers will be basing their risk assessment predictions on.¹³⁰ Without comprehensive, open and organized sources of information, engagement with data has inherent challenges.

Finally, the comparative benefits of analytical tools — which generally hold much potential — are not easy to assess. There appears to be some debate, for example, on whether a methodology applying a form of game theory (combined with a Monte Carlo simulation) adds anything to the prediction of litigation risk.¹³¹

Some particular limitations and questions we have encountered include the transaction costs and manageability of risk assessment with sophisticated tools, and the discoverability of risk assessment generally, which we discuss separately below.

¹²⁷ “Lawyers are perhaps too busy with law to take a step back and imagine how else it could be done, and some may be intimidated or simply unimpressed by the law becoming a harder science”. See Pavillet, *supra* note 117 at 15.

¹²⁸ It appears that legal analytics courses are starting to surface. See e.g. “Legal Analytics Course”, online: <<http://www.legalanalyticscourse.com/>>; and see Marjorie Corman Aaron, *supra* note 49.

¹²⁹ This problem may be less acute for repeat litigation players developing internal models. They will have access to data about the settlements they enter into, and these datasets may be large enough to have predictive value. *Cf* Osbeck, *supra* note 85 at 5 (pointing out that although settlement data is generally publically available, it does tend to be *privately* available). Professors Jean-Francois Roberge at Université de Sherbrooke and Pierre Noreau at Université de Montréal plan to conduct a study on decision errors in litigation and settlement negotiation, which may go some way toward filling the gap in Canadian data (personal communication from Jean-Francois Roberge to the authors (11 October 2016)).

¹³⁰ But see Stevenson & Wagoner, *supra* note 4 at 1373 (suggesting insights from big data can do the same work as the instincts fostered by experience).

¹³¹ Compare Stevenson & Wagoner, *ibid*, at 1380-87 (discussing the limitations of prediction based on big data). See also Katz, *supra* note 73 at 958-63.

1) Transaction Cost and Manageability

While both proprietary and open access legal databases do exist in Canada, the transaction costs of mining that data for individual clients are currently significant.¹³² Services such as those provided by Loom Analytics may be moving in that direction, but it is too soon to know how, or if, that gap will be filled. Particular transaction costs are actually triggered by some of the tools noted above, such as those built on decision-making models. The most common refrain we have heard along those lines is, for example, that “most files can’t bear the cost of a full TreeAge assessment.”¹³³ Lawyers and their firms may have to weigh the benefits and costs of the educational investment: training in computer programs such as TreeAge, and the tutelage needed to guide their early use. Some files may justify the hiring of an outside risk assessment consultant, who may not have the content knowledge on the file, but does bring “a special set of questioning skills to the evaluation.”¹³⁴ Concerns around cost and the initial investment of time have increased demand for simpler tools and methodologies.

Compounding the problem of transaction costs for sophisticated risk assessments is the fact that lawyers are generally unfamiliar with these tools. For example, in our study focused on commercial lawyers and their practices in this area, only one lawyer we interviewed uses TreeAge regularly. His starting assumption creates incentive for him: “I believe that you’re going to be clouded by cognitive biases. The input frailties based on the ‘back of the napkin’ or ‘back of your head’ assessment means that you’re *going to* miss things which are potentially significant.”¹³⁵ Because of that, “I use TreeAge on pretty much everything, whether it’s for my own benefit, or at the specific request of the client. I do it on any significant case, particularly where it’s a little more complicated.”¹³⁶ Beyond this, lawyers that we interviewed described TreeAge as “daunting.”¹³⁷ “Very few lawyers use it. . . I think their eyes glaze over when you talk about it.”¹³⁸ Many concluded there was a need for a simpler tool.

That is not to say that lawyers are unfamiliar with decision trees. While decision tree software was seen as unwieldy, some are using the “old-school”

¹³² Moreover, though some Canadian courts have begun to make some of their records available online (see e.g. Supreme Court of Canada, “Access to Court Materials”, online: < <http://www.scc-csc.ca/news-nouv/media/document-eng.aspx> >) there is no national, centralized equivalent to PACER — which brings together records, including dockets, and documents from all US federal courts — for companies like Loom to draw on. See Stevenson & Wagoner, *supra* note 4 at 1357-58 (discussing PACER and its role in the advent of “big data” in the law).

¹³³ Heavin & Keet, *supra* note 5, interview with Lawyers #1 and #7.

¹³⁴ *Ibid*, interview with Risk Assessment Consultant #2.

¹³⁵ *Ibid*, interview with Lawyer #4.

¹³⁶ *Ibid*.

¹³⁷ *Ibid*, interview with Lawyer #7.

¹³⁸ *Ibid*, interview with Corporate Counsel #3. Interviews with Lawyers #1, 2 and 7 confirmed the same thing.

method.¹³⁹ That might mean sketching out a decision tree, “like a flowchart.”¹⁴⁰

In a normal case which is complicated, and where the client can bear the cost, I’m going to have that flowchart written down on a piece of paper for myself. I’ll do a chronology of the documents, where things were found, what happened, all of that. Most important, I make what I call a “factor’s list.” Once you have a decision tree based on the angle you’re going to take, the factors list helps me decide what I need to prove and how I’m going to prove it. If it’s a breach of contract claim, I write down all of the elements that have to be proven. How do I prove it, what documents help me prove it, what witnesses might help me prove it. I will assign probabilities, and then I will go through the same process but flip it on its head, pretending that I’m the other side, figuring out how to attack the case. If you take a look at both sides, then you can produce a decision tree and some guiding principles.¹⁴¹

Some lawyers resist the idea that software can help: “To me, there’s no magic as to whether it’s software, or whether I’m doing it manually. The important thing is that I’m doing it, and that’s it in a format where it provides the information that I can use for the client.”¹⁴² Assigning the risk assessment exercise to someone else, inviting a junior to input into the process, may be uncomfortable to the “lone wolf” litigator. “I’m a dictator. I never assign a chronology, or a factors list, to a junior in whom I don’t have complete trust. If I don’t have complete trust in someone, or the case otherwise requires it, I will always do it myself.”¹⁴³ His concern about computer software is that “I wouldn’t be the one doing the input.” This lawyer explains that the pain of doing the risk assessment is how he learns the case, which pays off at every stage in the litigation.¹⁴⁴

The Dual View Case Assessment[®] approach was indeed developed in the search for a simpler model, supported with a more accessible software program (Excel). Lawyers are keenly interested in access to a simpler set of tools:

If there is a tool out there which is simpler to use ...that would facilitate broader adoption of it amongst lawyers. In general, that’s a goal, even if you can’t come up with a simplified approach that is going to be usable for very complex cases.¹⁴⁵

Excel was identified as a software base with potential.¹⁴⁶ Although even the “new generation” of lawyers does not necessarily have an intimate understanding of the program,¹⁴⁷ there is a possibility of importing information more simply

¹³⁹ *Ibid*, interview with Lawyer #2.

¹⁴⁰ *Ibid*.

¹⁴¹ *Ibid*, interview with Lawyer #2.

¹⁴² *Ibid*.

¹⁴³ *Ibid*.

¹⁴⁴ *Ibid*.

¹⁴⁵ *Ibid*, interview with Lawyer #4.

into such a spreadsheet. “Everybody has it, and it’s easy to build on top of it.”¹⁴⁸ There may be an advantage, however, to combining a visual mapping exercise with an Excel-based process of consolidation. Visual diagrams — even a “simple kind of illustration”¹⁴⁹ — are powerful,¹⁵⁰ and may lend more capacity “to see the interconnectedness and relationships among various issues”¹⁵¹:

When I look at a decision tree, or build in TreeAge, as complicated as that process can be, it’s all there in one picture. I can look at it, and when someone talks about this part of the tree, I can intuitively see and appreciate where that fits into the overall picture and analysis.¹⁵²

Whether using TreeAge Pro[®] or an alternative, at this point, the lawyer still has to “build” the list of legal elements and uncertainties. It may be possible to develop “pre-formulated worksheets that could be specific to certain kinds of issues and circumstances that would simplify the process,”¹⁵³ but at the moment these do not exist. Every case presents a mix of “risks” arising from the legal elements and the nature of the evidence available to support the claim and defence. It may be possible to group areas of risk into themes or types of risk, but the precise factors will need to be generated case-by-case. This reality is holding up the development of universally useful models — or at least technical and computer-assisted models. A decision tree, and to some degree, Palmer’s case valuation methodology, are currently relying on the user to develop her own list of factors. There are advantages to leaving it to the lawyer to develop the “theory of the case,” although it requires more time. Some effort will likely be made in the coming years to develop transferable lists of factors, and increase the utility of computer tools, but this tension will always remain.

It is, in the end, an important reminder that “the amount of background work that’s necessary to produce the numbers that go into damage assessments is very extensive, and very case specific,”¹⁵⁴ and that is perhaps unavoidable.

2) Discoverability

Practical questions have been raised about the discoverability of any risk assessment documents. A risk assessment in Canada is likely to be protected

¹⁴⁶ *Ibid*, interview with Actuary; *ibid*, Lawyer #4.

¹⁴⁷ “Can they manipulate a workbook and write programs and formulas and do integration, and produce pivot tables? I do stuff in Excel, and junior lawyers come to me and say, ‘I don’t understand what you’ve done’” (*ibid*, Lawyer #4).

¹⁴⁸ *Ibid*.

¹⁴⁹ *Ibid*, interview with Corporate Counsel #3.

¹⁵⁰ *Ibid*, interview with Risk Assessment Consultant #1.

¹⁵¹ *Ibid*, interview with Lawyer #4.

¹⁵² *Ibid*.

¹⁵³ *Ibid*.

¹⁵⁴ *Ibid*, interview with Corporate Counsel #3.

under rules of privilege, but not necessarily protected in the United States.¹⁵⁵ In the Canadian setting, if a risk assessment is part of the communications between lawyer and client, an argument may be made that it is protected as “legal advice communications.”¹⁵⁶ However, a risk assessment is completed, and used, in many different ways, and a more reliable source of protection may come from “litigation privilege” instead.¹⁵⁷ Not restricted to communication between lawyer and client, it might include the product of more varied interactions, if the litigation was ongoing or reasonably contemplated at the time, and the dominant purpose of the communication was in respect of the litigation.¹⁵⁸

What if a full risk assessment is prepared, but only conveyed in summary format to the client? It appears the document should be protected regardless of how and if it is communicated:

. . . while the focus of solicitor-client privilege is to protect communications (specifically, the provision of legal advice), litigation privilege protects documents (defined broadly). There need be no communication at all for litigation privilege to attach to a document. The prototypical example — a lawyer’s brief — may never be seen by the client or anyone else but the lawyer who prepared it. It is nonetheless covered. The privilege also extends to documents prepared or communicated between the lawyer and third-parties. One consequence of this is that confidentiality is not a requirement for litigation privilege.¹⁵⁹

Even in the Canadian context, however, there may be unanswered questions about the future security of such documents. The limitation of litigation privilege

¹⁵⁵ Workshop Participant, Lawyer #12. Some vulnerabilities around the discoverability of risk assessment tools in the U.S. context are explored in Robert B. Calihan, John R. Dent & Marc B. Victor, “The Role of Risk Analysis in Dispute and Litigation Management” (Paper delivered at the ABA 27th Annual Forum on Franchising, 6-8 October 2004) [unpublished] at 42, 47-48.

¹⁵⁶ In another dimension of this question, it has been suggested that lawyers who use risk assessment software tools are obligated to inform their clients of this — whether or not they are using it as a basis for communicating their assessment of litigation risk. See Lisk, *supra* note 12 at 195.

¹⁵⁷ Justice Fish distinguished litigation privilege from attorney-client privilege in *Blank v. Canada (Department of Justice)*, 2006 SCC 39, 2006 CarswellNat 2704, 2006 CarswellNat 2705 (S.C.C.) at paras. 27-28 [*Blank*]. The Canadian Bar Association provides a simple explanation of the difference between the two types of privilege. See CBA, “FAQ — Privilege and Confidentiality for Lawyers in Private Practice”, online: <[http://www.cba.org/Publications-Resources/Practice-Tools/Ethics-and-Professional-Responsibility-\(1\)/Solicitor-Client-Privilege/FAQs](http://www.cba.org/Publications-Resources/Practice-Tools/Ethics-and-Professional-Responsibility-(1)/Solicitor-Client-Privilege/FAQs)> .

¹⁵⁸ *Blank*, *supra* note 157 at para. 60. Gloria Geddes cautions that more than a “vague or general apprehension of litigation” would be required, in Gloria Geddes, “The Fragile Privilege: Establishing and Safeguarding Solicitor-Client Privilege” (1999) 47:4 Canadian Tax Journal 799 at 822.

¹⁵⁹ Mark Prescott & Peter Waldkirch, “Litigation Privilege: Scope, Rationale and Critique” at 6, online: <http://www.cba.org/cba/cle/PDF/Mark_Prescott_paper.pdf> [Prescott & Waldkirch].

as a ground of protection is that it ends with the litigation. Inside “unrelated” proceedings, a risk assessment document could theoretically be discovered (subject, arguably, to its relevance).¹⁶⁰

CONCLUSION

Shifting visions of the lawyer’s responsibilities have brought a different level of accountability to the role of lawyers in litigation. Lawyers are obligated to explore settlement with clients, under Codes of Conduct¹⁶¹ and even some legislative regimes,¹⁶² and informed decision-making by the client is a central presumption of the settlement process.¹⁶³ Rising concerns about the accessibility and efficiency of justice also puts pressure on lawyers to provide clear legal information and advice, early in any process. A risk assessment framework brings rigour and clarity to the assessment of rights and obligations. It aids in client communication, and in the development of litigation and negotiation strategy.

In the modern litigation environment — and especially the commercial litigation environment — risk assessment will surely be seen as a central role for lawyers, and a toolbox of tools and methods will assist. Despite the discomfort that risk assessment software tools create for many lawyers, they are important and are quickly evolving to fit today’s needs. We expect that software developers and innovative thinkers will continue to experiment with accessible models, to fit the average-size legal file in addition to large-scale litigation. Resistance expressed by lawyers so far, we believe, is tied to lack of education around the basic principles, and discomfort with the fusion of mathematical thinking and case analysis — a gap which can be addressed through education. Through the increasing range of software and web-based tools, and the promotion of a simple framework for risk assessment, lawyers will better be able to meet expectations around their roles in modern practice.

¹⁶⁰ *Blank*, *supra* note 157 at para. 36. See also Prescott & Waldkirch, *ibid*, at 6-9.

¹⁶¹ See e.g. Federation of Law Societies of Canada, *Federation Model Code of Professional Conduct*, Ottawa: FLSC, 2016, r. 3.2-4.

¹⁶² Since 2012, *The Family Property Act* in Saskatchewan has imposed an obligation on lawyers acting in applications under the Act to “discuss . . . the advisability of using alternative methods to resolve the matters that are the subject of the application” and “inform the spouse of the collaborative law services and mediation services known to him or her that might be able to assist the spouses in resolving those matters”, see *The Family Property Act*, S.S. 1997, c. F-6.3, ss. 41.1(1)(a)-(b), as amended by *The Miscellaneous Statutes (Collaborative Law) Amendment Act, 2012*, S.S. 2012, c. 24, s. 4. Beginning in 2016 the Quebec *Code of Civil Procedure* has required parties to “consider private prevention and resolution processes before referring their dispute to the courts”, see art. 1 CCP.

¹⁶³ Michaela Keet & Brent Cotter, “Settlement Conferences and Judicial Role: The Scaffolding for Expanded Thinking About Judicial Ethics” (2013) 91:2 Can Bar Rev 363.