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# The Evolving Role of the Corporate Counsel: How Information Technology is Reinventing Legal Practice

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# Campbell Law Review

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## **The Evolving Role of the Corporate Counsel: How Information Technology is Reinventing Legal Practice**

### Speaker Biographies

MICHAEL RAPPA

*Executive Director, Institute for Advanced Analytics, North Carolina State University*

Dr. Michael Rappa is Executive Director of the Institute for Advanced Analytics and a faculty member in the Department of Computer Science at North Carolina State University. As head of the Institute, he leads the nation's first and preeminent Master of Science in Analytics as its founder and principal architect. Dr. Rappa was a professor at the Massachusetts Institute of Technology for nine years before joining N.C. State as Distinguished University Professor in 1998.

In addition to his duties as director, Dr. Rappa is co-principal investigator with Dr. Laurie Williams of the Science of Security Lablet, a large multidisciplinary research project sponsored by the U.S. National Security Agency. Dr. Rappa is also recognized as a leading scholar in the field of technology management, and has been ranked in the ninety-ninth percentile among more than 9,000 authors in terms of research productivity in top journals over the past fifty years. Dr. Rappa is perhaps best known as the creator of *Managing the Digital Enterprise*, an award-winning educational website devoted to the study of management in the digital world.

N.C. State has recognized Dr. Rappa on several occasions for his contributions to teaching and service. He has received the Outstanding Extension Service Award, the Award for Graduate Teaching Excellence and the Gertrude Cox Award for Innovative Excellence in Teaching and

Learning with Technology. He is also winner of the MERLOT Award for Exemplary Online Learning, a four-time recipient of the IBM Faculty Award, and twice a finalist for the Epton Prize.

Dr. Rappa began his academic career at the University of Minnesota, where he earned his doctorate in 1987.

THEODORE EISENBERG <sup>1</sup>

*Henry Allen Mark Professor of Law and Adjunct Professor of  
Statistical Science, Cornell University*

Theodore Eisenberg was a leading authority on the use of empirical analysis in legal scholarship. After his graduation from the University of Pennsylvania Law School, Eisenberg clerked on the U.S. Court of Appeals for the D.C. Circuit and for U.S. Supreme Court Chief Justice Earl Warren. After three years in private practice, Professor Eisenberg began teaching at the University of California, Los Angeles. He was a visiting professor at Harvard, Stanford, New York University, Tel Aviv University, University of Haifa, the program on Institutions, Economics and Law in Turin, Italy, and has held the Max Schmidheiny Foundation Guest Professorship at the University of St. Gallen. He used statistical methodology to shed light on diverse subjects such as punitive damages, contracting patterns, judicial performance, class action attorney fees, effectiveness of statin drugs, victim impact evidence, capital juries, social construction of law, and chances of success on appeal. He was the founder and an editor of the *Journal of Empirical Legal Studies* and a fellow of the American Academy of Arts and Sciences.

JOSEPH W. DOHERTY

*Director, Empirical Research Group, UCLA School of Law*

Joseph W. Doherty is the Director of the Empirical Research Group (ERG) at the UCLA School of Law, where he teaches empirical legal research and election law. He is an expert in quantitative research design and methods, and is a mentor, adviser, or collaborator on much of the empirical scholarship produced at UCLA Law. He is best known for his research on bankruptcy with Lynn LoPucki, but he has also co-authored studies on legal aid agencies, the living wage, campaign finance disclosure, negotiation strategy, employment discrimination, civil justice transparency and international criminal justice. Professor Doherty is the Co-Director of

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1. Professor Eisenberg passed away several months after the Symposium at the age of 66.

the UCLA-RAND Center for Law and Public Policy. He earned his Ph.D. in Political Science from UCLA in 2006.

CHRISTOPHER ZORN

*Liberal Arts Research Professor of Political Science and Sociology,  
Affiliate Professor of Law, Pennsylvania State University*

Christopher Zorn is the Liberal Arts Research Professor of Political Science, Professor of Sociology and Crime, Law, and Justice (by courtesy), and Affiliate Professor of Law at Pennsylvania State University. Prior to joining Penn State, he was Professor of Political Science at the University of South Carolina from 2005 to 2007, a Visiting Scientist and Program Director for the Law and Social Science Program at the National Science Foundation from 2003 to 2005, and was Winship Distinguished Research Professor of Political Science at Emory University, where he taught from 1996 to 2003. His academic research focuses on judicial politics and on statistics for the social and behavioral sciences. In addition, he is the Vice President of the Midwest Political Science Association and currently serves on the editorial board of the *American Political Science Review* and the executive boards of the American Judicature Society and the Empirical Legal Studies weblog. He is also a founder and managing partner of Lawyer Metrics, LLC, which provides analytic tools and industry intelligence for the legal services industry.

Professor Zorn earned a Ph.D. in political science from Ohio State University in 1997 and a bachelor's degree in political science and philosophy from Truman State University in 1991.

ELIZABETH H. JOHNSON

*Poyner Spruill, LLP*

Elizabeth Johnson is a partner in Poyner Spruill's Raleigh office where she heads the firm's Privacy and Information Security team. Her practice focuses on privacy, information security, and records management.

Elizabeth's comprehensive, practical approach to legal issues in privacy and information security is reflected by the diversity of her clients, which hail from a variety of industries, including health care, financial services, academia, insurance, retail, telecom, utility, technology, consumer goods and client services. Elizabeth has worked with organizations of various size and scope, ranging from Fortune 100 companies with international reach to local charities. She was recently named one of the *Triangle Business Journal's* 50 to Watch in Business.

Elizabeth graduated from Duke University Law School in 2003 and clerked for Chief Judge William L. Osteen on the U.S. District Court for the Middle District of North Carolina.

SILVIA HODGES SILVERSTEIN

*Vice President of Strategic Market Development, Sky Analytics;  
Lecturer in Law, Columbia Law School; Adjunct Professor, Fordham  
Law School*

Dr. Silvia Hodges Silverstein earned her Ph.D. at Nottingham Law School (UK) and holds a master's degree in business from Universität Bayreuth (Germany) and Warwick Business School (UK). She co-authored the Harvard Business School case study, "GlaxoSmithKline: Sourcing Complex Professional Services," with Professor Heidi Gardner of Harvard Business School. Earlier this semester, she taught the case in her classes at Columbia Law School and Fordham Law School. Dr. Hodges Silverstein has studied client purchasing decisions for a decade, and now focuses on legal procurement. She presented her two studies on the purchasing behavior of legal procurement professionals at Harvard Business School and the purchasing professionals' industry body Institute for Supply Management (ISM). Dr. Hodges Silverstein is also the author of "Buying Legal: Procurement Insights and Practice," and "Winning Legal Business from Medium-Sized Companies." She has been awarded the American Marketing Association's Liam Glynn Research Scholarship, a Ph.D. scholarship from the German Department of Education and Research, and is a fellow of the College of Law Practice Management.

LARRY BRIDGESMITH

*Chief Relationship Officer, ERM Legal Solutions; Of Counsel, Bone  
McAllester Norton PLLC; Adjunct Professor of Law, Vanderbilt  
University*

Larry Bridgesmith is the co-founder and Chief Relationship Officer of ERM Legal Solutions and of counsel to the law firm Bone McAllester Norton PLLC. He is a member of the International Academy of Mediators and co-chair of the American Bar Association Dispute Resolution in Healthcare Committee and the Section's International ADR Committee Task Force on Multi-disciplinary Solutions. He founded Lipscomb University's Institute for Conflict Management as its inaugural Executive Director.

OWEN BYRD

*Chief Evangelist and General Counsel, Lex Machina*

Owen Byrd is the Chief Evangelist and General Counsel of Lex Machina, which provides legal analytics that companies and law firms use to craft successful intellectual property business strategy, win cases and close deals. Legal analytics is a new type of online resource that provides users with a winning edge in the highly competitive business and practice of law.

Owen is an entrepreneur, lawyer and self-described data geek. He has founded and led software, legal, real estate, political and non-profit ventures by designing data systems and applying data analysis.

Owen is a member of the California Bar and earned a law degree from the University of Chicago Law School and a bachelor's degree from Colorado College.

JOHN BOSWELL

*Senior Vice President, Chief Legal Officer and Corporate Secretary,  
SAS Institute*

John Boswell is responsible for legal services and worldwide contract administration for SAS, overseeing more than forty attorneys and 220 staff members globally. He is responsible for the Government Affairs, Enterprise Negotiation and Risk departments at SAS. As a member of the SAS Executive Committee, John helps set policy for the company and takes the lead role in setting SAS' positions on privacy and intellectual property.

Before joining SAS, John was President of Vista Development Corp., a software consulting company. He also served as General Counsel and Secretary for Raima Corp., another software company. Prior to that, John was in private practice.

John holds a law degree and a bachelor's degree from the University of South Carolina at Columbia. He is consistently chosen as one of the best corporate attorneys in North Carolina by his peers in the North Carolina Bar Association. He is a frequent speaker in the areas of privacy and patent reform.

JOHN W. O'TUEL

*Assistant General Counsel, GlaxoSmithKline*

John O'Tuel is Assistant General Counsel at GlaxoSmithKline (GSK) and works in the Dispute Resolution & Prevention (DRP) group. Since

joining GSK in 2005, John has progressed through successive roles of increased responsibility within GSK's Legal Department. As Assistant General Counsel within DRP, John focuses on reducing risk for the Company and managing a variety of litigation, including antitrust matters, product liability cases, and a diverse collection of commercial litigation.

In addition to his case management duties, John is involved with litigation and IT processes with a focus on e-discovery. John chairs or participates in a variety of committees designed to reduce the GSK's risk and costs in the area of e-discovery. John speaks frequently at external engagements on a variety of topics, including efforts to amend the Federal (and State) Rules of Civil Procedure and International Data Privacy issues. John also works on privilege coordination issues, pro bono projects, and other Civil Justice reform efforts.

John earned a law degree from Wake Forest University in 1997 and a bachelor's degree from the University of North Carolina at Chapel Hill in 1992. After law school, John clerked for the Honorable Alexander Denson in the U.S. District Court for the Eastern District of North Carolina before joining the law firm Womble Carlyle Sandridge & Rice, LLP, in Raleigh, NC.

#### ROB TILLER

##### *Vice President and Assistant General Counsel, Red Hat*

Rob Tiller is Vice President and Assistant General Counsel for Red Hat, Inc., the world's leading provider of open source technology to enterprise customers, where he manages litigation and intellectual property matters relating to open source software. Before joining Red Hat, he was a partner with the law firm of Helms Mulliss & Wicker, PLLC, where he specialized in commercial and IP litigation.

Rob is a graduate of the University of Virginia School of Law, and a former clerk for Justice Antonin Scalia of the U.S. Supreme Court and Judge Stephen Williams of the U.S. Court of Appeals for the D.C. Circuit. Before law school he worked at The New Yorker magazine as a fact checker.

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## Michael Rappa

Dr. Michael Rappa: It is a pleasure to be here today. I do not have very much time. I only have 1.8 billion nanoseconds, so I have really got to get moving.

In case you are wondering what a nanosecond is, it is a light-foot. A light-foot is the amount of time it takes for light to travel one foot in a vacuum. And thirty minutes basically translates into 1.8 billion nanoseconds. It is not just meant to be a funny title; it is also meant to point out the fact that, depending on how you measure things, data can be either very big or very small. If you measure this in minutes, it is just thirty minutes.

Many things today we measure in ways that lead to massive amounts of data. What I would like to talk with you today about, very quickly, is how to think with analytics in a very broad and general way. In order to understand how analytics is playing a role, perhaps in fields like law and other fields as well, you really have to understand something about how data is changing the reality that we exist in today.

In my lifetime, which is the average lifetime of a person walking around the planet these days, data and how we store data has changed quite dramatically. In 1956, they shipped the first five-

megabit disk, hard disk, computer. Back then, that would set you back about \$3,200 a month on a lease from IBM, and that was not even the whole computer. The rest of the computer was still on the truck. That was just the hard disk part of the computer. Today, we know that because of technology, the amazing technology of solid-state electronics, the cost to store information has greatly decreased.

Prior to that hard disk, information was stored on paper or punch cards. The programs were stored on punch cards and that computer you saw being lifted into the plane over there might have represented about 64,000 punch cards of data storage—not a whole lot if you think about it—or printed out on paper. But since the 1950s and the advent of electronic-based data storage, our ability to store data in vast quantities at ever lower and lower cost is really what has driven most of our technological reality today. It is a key facet of it, and it is an interesting phenomenon in the sense that it is very deflationary. That is, what we used to measure, what used to cost millions of dollars in the 1950s now costs milli-cents or thousandths of a cent to store.

I guess if you go over to North Carolina State, pretty much any random student you pick up off of campus is probably walking around with one of these in her pocket. This is a simple two-gigabit USB flash drive, \$3.82 at Walmart. Picked that up right off the web last night. That is a phenomenal change in our technological reality.

I think what is interesting about technology, though, is how inflationary it is. Buying a house in 1960 probably had a certain cost, given the cost of living at the time, which is not really that different today. Buying a car today, if we built cars like we built electronic circuits, would probably cost \$3.99. It would be ridiculously cheap. But of course, it is not.

And just as a fun example, if you take a USB drive and add SpongeBob to it, it actually becomes three times more expensive. The message there is that if you are an intellectual property lawyer, you would do pretty well and make a lot of money in that. I think one of the funniest things I have seen is the fact that technology is this amazing driver that reduces the cost of everything, particularly the cost of storing and manipulating data, such that data is really everywhere around us today.

It is really important to understand how, when we talk about data, we really do not just mean numbers any more. It is hard to really put a finger on it. Probably eighty percent of the information we store is actually in text or images—photography, or even voice. There are a number of different things that, when you reduce down to bits, all become data. We are talking about numbers. Yes, things do get reduced to numbers a lot, but most of the information we are dealing with is text-based information. Increasingly, it is image-based information. Something like Facebook, which has compiled hundreds of billions of photographs just in its short lifetime of around a half a dozen years, is the largest compilation of images in the history of civilization over those six years. That is a phenomenal thing to amass all in one place, and that is what is interesting about analytics.

What is important to realize, though, is that it is not just that it is cheaper to store data. When you amass data, it actually becomes very expensive. This is Google's data center here in North Carolina. It looks like just another modern datacenter that you might want to lock into. These are vast structures that hold petabytes of data.

To get to a petabyte, you have to go past a gigabyte, past a terabyte, into the realm of petabytes, and then exabytes. Each time, you are moving up by factors of one thousand. So the amount of information that an organization like

Google collects by trawling the web and collecting every image and every website it can find now counts into the billions. You are really creating quite an expensive proposition, number one, to store it, and mostly to keep it cool. When you amass that many blade servers in one place, that is, the basement of the Google server farm, it is largely just a lot of water. A facility like this could pump through 1,000,000 gallons of water in a day. It takes an incredible amount of water to keep it cool. So it is actually a pretty expensive proposition, but it is also a technologically complex proposition.

When you call up your web browser and you search something like Google, even the simplest or most complicated search phrase we might put in there usually comes back in, maybe not nanoseconds, but milliseconds, and that is an incredible, incredible feat, technologically, mathematically as well, to achieve that result. Data is this interesting thing where we have gone from a situation where, when I was born in the late 1950s, data was something which was hard to collect—it took a lot of time, it was expensive to store and maintain—to a world today where data is everywhere. It is sitting in our pockets; it is sitting on our phones, our iPhones, our smartphones; it is all around us. It is accumulating all the time, every day, as we move through the day. We are data generators ourselves. The smartphone in your pocket is sending signals to a cell phone tower that is just accumulating massive amounts of data for a telecommunications provider. I could go on and on and on and on. The fact that it is relatively cheap and easy to collect data means that it is all we need these days.

Just to give you the other side of that mobile computer from 1956, this is actually a mobile datacenter. Some datacenters are just stockyards full of trucks just like this. They are just appended together, one after another, to build an old datacenter.

Let us leave from the phenomena of data. Now we know it is everywhere. It is relatively cheap to collect and store, although when we amass it in large quantity, it becomes very expensive. What is it that you actually do with data becomes important. One of the most powerful statistical concepts is simply average: finding out what the average is. You probably know this yourself just by following politics in recent years. Nate Silver, who has become somewhat famous as a gambler and a poker player, is someone who first started to predict baseball and sporting events. Silver decided to try his hand at something he thought was interesting: politics, because of how silly it was.

Every day you wake up during an election campaign there is another poll being talked about. Now, who is ahead, who is behind, everything switches as if human nature changes almost instantly from day to day, but a good statistician knows that is really not true. And in fact, any single measurement is not necessarily a good indicator of anything, but rather an average of many measurements is an integral predictor of the future. And all Silver did was say, “Why even look at a single poll? Why do we not just look at all of the polls, every day? Then, we will do some weighting of what is a good poll and what is a weak poll, based on their methodologies.” Basically, just by calculating the average, Silver could predict elections with amazing accuracy.

Everyone is shocked and amazed, but what Silver will tell you is that just about everyone who plays with polling in the statistics world comes up with the same prediction. It is not that hard to do when you rely on averages as opposed to single data points. Even though we have very different views, a lot of analytics is finding what is similar about us.

Even people who may be quite different in their politics might end up walking into Lowe's on an October Saturday morning because they want to remodel their bathroom. Lowe's really wants to know who those people are. A big box retailer like Lowe's, just to give you one example, might spend countless millions of dollars sending out even more countless tens of millions of flyers to your mailbox to encourage you to come into Lowe's to remodel your bathtub. It is better if you do it yourself. It is a lot cheaper.

If I can, through analytics, find commonalities in people that would tell me that this group of people is twice as likely to head to my store to remodel their bathroom on Saturday morning than this group of people, I will save a lot of money by sending out half the number of flyers to the right group of people. It is really as simple as that. With this data, Lowe's can predict who is more likely to respond by knowing something about the consumer. And trust me, Lowe's knows a lot about you. You do not even have to go to Lowe's—it knows a lot about you because it is compiling massive amounts of data. It might pull in data to figure out that you have just renovated your kitchen six months or twelve months earlier. One of the things it may know is that people who renovate their kitchens are also likely to renovate their bathrooms next, or vice versa. These are the kinds of things that it plays with, analyzing tens of millions of customers on literally hundreds, perhaps a thousand or more variables, to try to predict who is most likely to come into its store. Finding averages, finding commonalties, finding groups of people who are more alike in one way than another way, becomes very powerful.

Another very powerful statistical concept is correlation. I want to encourage you to become analytics students. We have already put two law students through our analytics program from other corners of the Triangle. Hopefully we will get some students coming out of Campbell in the near

future because I think the marriage of law and analytics is very important and I hope to underscore that in the rest of my talk.

The first thing you learn in statistics, of course, is that a correlation is not causation. That is, the relationship between two variables does not necessarily mean much unless you really understand whether there is a causation that goes on there: Variable 1 leads to Variable 2, or vice versa. They can, in fact, run parallel. They can be correlated without having any causal relationship. Much muddled statistical thinking is thinking that a correlation implies causation. Causation is very, very important. If you are doing clinical drug trials, you really want to know that something that you are doing with a test group, with a drug, is actually having an effect. You want the scientific theory to understand the relationship between those variables.

Now, having said why it is so important to focus on causation, I will tell you that much of analytics does not really depend on causation. Correlation is good enough. There are very obvious correlations. If you are Harris Teeter, for example, we know that if you go into the store to buy cereal, you are also likely to buy bananas. Well, it does not take a genius to know that people like bananas with their cereal. Now, when you go into the supermarket, you will see supermarkets even stack their bananas over by the cereal to almost remind you not to forget to pick up bananas.

Supermarkets and large retail chains analyze over and over and over again what lands in market baskets in order to cross sell. When you come to the cracker aisle, they would really love to sell you a cheese knife with the crackers. Even though you did not come into the store thinking you needed a cheese knife, if you are going to buy cheese and crackers, you are maybe going to buy a cheese knife. That just adds to the value of your basket rolling out.

I am the typical male shopper who should never go shopping because I go in there trying to buy the thing that we need, and walk out with thirty things in the basket. That is what the store wants. That is really not a good thing for the consumer.

Other correlations are not really that obvious. I am not sure what the underlying theory of this correlation is, the thinking that if you eat a lot of microwave popcorn, you are sitting on your couch watching television a lot. You should do this this weekend: Walk around Harris Teeter and look at what they are cross selling in the store. I could show you a series of pictures of the oddest things that get paired together. But stores do not care about whether there is any theory driving that. All they care about is that certain things end up in a person's basket together in a very high frequency.

You look for correlations of data. This is a representation of data, but it is actually a piece of artwork. It is called Random Distribution of 40,000 Squares using the odd and even numbers in a telephone directory. If you are looking at this as a piece of artwork and you are trying to understand the meaning, well, there is no meaning; it is completely random. It is just a random representation of data, which is great. No correlation, right? Totally random. However, when you take random data and you start to compile it in extremely large numbers—here, I just multiplied it by 144—all of a sudden, correlations start popping up that are largely what we might call spurious, but nonetheless exist. And so, when you look at market baskets, you might find that certain things are correlated, like bananas and cucumbers. We have no reason to understand why people buy those things together.

We talk a lot about big data. You have probably heard that term as a kind of omnibus word of talking about how our reality is changing around data, how data is everywhere and how data is

being amassed in large volumes. Really the word you should remember is not “big data,” but “bad data.” Most data is born bad because it is streaming off of sensors, photograph devices and other sorts of things.

Remember, in the old days, we were very meticulous about how we collected data. It was a very meticulous process that took time, money and real effort to do. Today, data just streams off of various kinds of sensory devices and, as a result, it is very messy. The data that streams off of the web, the so-called clickstreams that you might be familiar with—even in the hundreds of thousands as opposed to the billions or trillions of clickstreams—is a very, very unusual and messy phenomenon. On the one hand, it is perfect that somebody put it on the web; on the other hand, it is highly imperfect in the way that it is collected. It has a lot of noise in it and it has a lot of automated behaviors in it that lead to all sorts of noise in the data.

The problem with data is that even in big data, if you add bad data to it, it becomes bad data. It has a contaminant probability to it. A little bad data and a lot of good data is a lot of bad data. Our ability to understand, particularly in the legal profession, how even good data goes bad is extremely hard.

For most of the last four or five decades, data was the province of insurance companies, banks, research enterprises and so forth. When you wake up in the morning and you bring up your online banking account, it has got to be right. There is someone who is curating, auditing and making sure all of that data ends up in its right place, but the web is not that way at all. Most of the data that we collect today is a total mess. Bad data does not get any better. It does not turn good on its own; it takes a lot of work and effort.

We also have to worry about data corruption. Where did that little girl come from? She was not in the original photograph; somebody actually pasted her in that photograph. That is a kind of data corruption. People have basically tooled with a photograph and obviously with a little Photoshop, they can go a very long way. That is one of the things in today's world. But the larger principle about data corruption is very clean. There are people with mal intent who are very interested in corrupting data that could be very helpful in this process. We have to be very mindful that what might seem like something that is accurate could actually something that was tampered with.

Just think about the recent example in the NSA (National Security Agency). There you have somebody on the inside downloading all sorts of documents and the NSA is not even aware of it. People who are really, really, really smart about these things know how to tamper with things and cover their tracks. Everybody else does not know how to cover their tracks and are covering the data with their fingerprints.

There are just two other points I would like to make. In a world where we collect data continuously and endlessly in huge volumes, the future is really going to be about deciding what to throw away. It is really not going to be sustainable to keep everything, so issues of data retention versus data destruction—which I think is going to overlay very heavily in the legal world—from deciding what organizations are required to keep and what they are required to throw away, will arise. It is going to become a very predominant issue in the future because if you do not start throwing things away, you are going to look like something in the middle of the Utah desert where you are collecting literally every piece of information that is being transmitted around the world.

In case you do not know, this is the NSA facility in the middle of Utah that now measures around a yabyte, which is, like a trillion, billion bytes of information. This is like ten trillion haystacks. If you measured the mass of a needle to a haystack, it would be ten trillion haystacks of information that we are collecting. Everyone will look like this in the future if they do not start taking some steps to throw away data, because the amount of data that is collected is just going to be obscene.

I think that really leads to the final point, which is probably the most important thing going into the future that we have to understand from an analytics perspective: What are we going to do about people's privacy? Famously, Scott McNealy, who was the founder of a very famous company, Sun Microsystems, back in the 1980s that really started the momentum to the Internet, was quoted back in 1999 as saying, "You have zero privacy anyway, so get over it." People were outraged when he had said this, but perhaps it was a prophetic statement because we do not have any privacy, period. Everything that you do that is being monitored electronically, whether it is clickstreams, photographs, whatever, is being monitored all of the time.

The particular problem from an analytical perspective that we need to deal with—and I think the law also has to deal with—is that you can take data that is being de-identified, that has been stripped of personally identifiable information, but when you add it as we do in analytics across multiple datasets, even as few as three datasets, all of a sudden you are able to identify people's identities. So even though there may be no names or other important information in each of these datasets, the mere fact that we have added it together can lead us down the path to identifying who an individual is. That is very problematic, but that is sort of where big data is going. How do we compile all of the sources of data together and how

are we going to preserve people's privacy at the same time?

That is the extent of my comments. If you want to, or if you are creating data by tweeting things out, that is great. I would be very happy to answer any questions that people have tweeted out via Twitter. I am happy to answer any questions, if there is time.

Male Voice:

I kind of wonder where the practice of law is going. In litigation, you used to have some partner who would decide what strategy a case is going to take. Now, questions such as whether to file a motion or not, or whether to file with a certain court or not, might be ones that analytics could be very helpful in trying to determine. I presume you could have every motion in front of every court in front of every judge who is arguing who is on one side or the other in front of you.

Dr. Rappa:

I think where analytics is going to affect the law first is probably in the lower level in the realm of evidence—your ability to gather huge amounts of evidence. And obviously not read millions of e-mails, but be able to analyze e-mails very quickly and efficiently to determine their evidentiary value is really what is going to just continue to happen in the future. What you are talking about is whether we can model strategic behavior somehow. I will just give you one example.

One of the things we do at my institute is actually work with many companies—we have not worked with a law firm yet—where people are willing to share data under a confidentiality agreement, and then we put a team of students on that project for several months. They take the data, model it, and build whatever insights they can out of it. I am actually looking right now at the camera in the parking lot. There are cameras everywhere! They are probably not taking photos.

We are doing a project now with the Houston Astros baseball team. I told the team that if the Houston Astros even just gets to the pennant or something, get the press release. They want to model the decisions that coaches make. Can we model their behavior in a way to predict what they are going to do in certain situations? I think that is what you are sort of saying. But I will tell you, that is a very complex kind of modeling.

Male Voice:

It is not that complex, right? You can get a motion to exclude evidence and file it in front of a judge. You can get someone that is doing that sort of metadata type information and you can view your averages and get some information about the likelihood of success.

Dr. Rappa:

Yes, you can come up with likelihoods. That might influence your decision. Precisely. But you cannot perfectly predict what is going to go on in a particular situation because of the many elements involved, and there is strategic behavior involved as well. But it is an interesting question, one I think that will be explored by companies as they pull this thing together.

I have exceeded my quota by at least 500,000,000 nanoseconds. Thank you very much for your time.

## Theodore Eisenberg

Mr. Theodore Eisenberg: I want to bring down to a slightly more specific level what Dr. Rappa spoke about: truth of analytics. Generally, I am going to give some concrete examples of analysis of data in the legal system, and hopefully, they are somewhat relevant.

I guess I could start with a question, and that is, you are either law students or lawyers: what drives litigation? What is the most important thing in terms of whether something is litigated or not? We actually do not teach it. I think it is paying lawyers. If you do not pay the lawyer, you do not

get litigation. If you do not have a system for paying the lawyer, you do not get litigation.

One important branch of the legal system is driven by attorney fees. I do not know about your law school, but we do not teach that. We do not have a course on how to pay lawyers or how lawyers should make money. Yet, it is the foundation of the profession and one of the foundations of the legal system. So what I want to talk about today is a little bit of how the general concept of analytics, talked about by Dr. Rappa, can help eliminate maybe the single most important thing about litigation—attorney fees, and more generally, how we use analytics, or data, or empirical methods to study the legal system.

We are really good, at most law schools, about teaching you how to read a case. We completely neglect teaching you how to study the legal system as a system, even though you are a part of it. I want to start with that.

Dean Leonard is not here. He is actually a friend. We have been on several committees together. I suspect one of the reasons I am here is because of him, though I do not really know that for sure. One of the ways I met Dean Leonard was through PACER, which I guess you all know about: Public Access to Create Electronic Records. In some ways, it is the ultimate in data technology. That is, if somebody asks you to work on a case and it is a federal case, I can say, “You do not need to send me anything; just give me the docket number,” or “Just give me the district and I will find it, and I will get all the documents I want,” unless they are under seal. One feature of PACER is that it makes an enormous amount of money for the federal judiciary. Large companies pay a lot of money to go through PACER every night and scrape all the data it can, which I assume it then repackages and sells to law firms and others that might be interested in it.

It is a little bit like the statement, “Forget about your privacy.” All your cases, everything you have done in federal court, is being looked at by someone, or at least is accessible by someone. I want to talk about how technology and data can provide information about attorney fees. I think, like most areas of law, when we take a step back and study it, we will see some surprises when we look at the patterns.

One feature of American law that is distinctive around the world is we have a so-called American rule, which is that each party pays its attorneys, regardless of who wins or loses. There are some fee-shifting statutes in civil rights and other areas, but our basic rule is the American rule, in contrast to the English rule, under which the loser pays.

You often hear in political debate or other debate, “If we could just move to a loser paid system, we could get rid of all that frivolous litigation.” I think the frivolous litigation itself is an interesting data question. I have never seen a study documenting a lot of it. It is much more a political talking point than it is a reality. Who are the attorneys getting rich bringing frivolous litigation?

If it is frivolous, it means it is destined to lose. If it is a contingency fee lawyer, he is going to starve to death. If it is an hourly lawyer bringing frivolous litigation, he has to find clients to pay him. I do not know who those clients are. You can imagine harassing litigation and other things, but the notion that there is a massive set of frivolous lawsuits out there just destroying America is completely undocumented. One of the reasons you need data is to refute myths. Just ask the next time you hear about frivolous litigation: Where is it? Give me a study.

The loser paid system is one way to address concerns about the cost, if not frivolous litigation. United States class actions are another important area where we have some information about

attorney fees. One of the problems with the American rule, and most systems generally, is that we do not know the fees. We know there is a huge case of some kind—maybe the American Airlines, U.S. Airways merger—that generated tens or hundreds of millions of dollars in fees for expert witnesses and lawyers that we will never see because most of our attorney fees are paid secretly. So we really do not know a lot about fees, generally. What we do know about fees is what we get from newspaper headlines, and those are highly biased reports.

I want to talk about fees in two areas of law that get a lot of attention: class actions and Chapter 11 bankruptcies. Let me start outside the United States. The only place in the United States where we have a true loser paid system is Alaska. It actually differs from the rest of the country; it follows the English rule where the loser pays. The problem with Alaska is no one lives there, so you do not get a lot of lawsuits. You do not get enough data to study. Alaska is reasonably happy with it, but nobody seems to pay attention to it.

Weigh the political background to attorney fees. It becomes a political issue when people say to reform the tort system or the legal system because greedy lawyers are sucking all the money out of the economy. And the background to this was like the background to the recent stoppage in Washington. The Democrats were associated with the trial lawyers; the Republicans were associated with businesses. These are some proxy soldiers of their wars and they have nothing to do with reality.

Linking technology in the study of attorney fees cannot be done in the United States because documents do not contain fees. In Israel, the judge sets the fee at the end of the case. If the case is litigated to conclusion, the judge can set the fee and it is in the record. You can combine PACER-like technology, which Israel has the equivalent of. So if you get permission to access the system, you

can go through every case and find out every attorney fee awarded by a judge in Israel. We did that for four years: 2005, 2006, 2011 and 2012. We have 2,641 cases litigated to conclusion where the judge awarded the fee. These were fairly big cases because Israel has a lower-level magistrate's court, the district court, just like our jurisdiction. One in federal court has to be \$750,000, with some exceptions, so these are pretty substantial cases.

For me, after studying the fee-shifting system in Israel, which we are not quite done with but we have enough to cover some articles, the major bottom line is if you actually look at the numbers and how often fees are awarded and not awarded and the amount of the fee, the system is more American than English, even though it is called a loser-pay system. The bottom line is that even when the court awards the fees, it is almost never enough to pay the lawyer what the lawyer is charging the client. So in fact, parties bear a substantial fraction of their own litigation cost.

The judges did award prevailing parties fees in 72.8% of the cases, and they denied prevailing parties in 27.2% of the cases. So about seventy percent of the time the winner got his fees. Not enough fees, but at least it got fees. Dr. Rappa's talk about outliers resonates with something I want to do in a future article. There are a bunch of cases, about five percent, in which the losing party was awarded fees. Those should be really interesting. What would move a judge to say, "I move for the defendant in the case, but the defendant pays the plaintiff's legal fees." I want to look at those in more detail. I do not think a pure quantitative study would work very well. There has to be a story, almost, behind each one of those.

Court cases are especially interesting, I think. If an individual sued a corporation in tort and defeated the corporation, the corporation always has to pay the fees. If an individual sued a corporation in tort and lost to the corporation, the

individual had to pay the corporation's fees only about half the time. There is a large asymmetry, and I think it may reflect some economic reality. Individuals do not have the money to pay the costs of the court cases they bring. In the United States, we deal with that, and in Israel, they deal with it through contingency fees. You cannot charge the average losing civil litigant \$1,000,000 in fees. He does not have it. You could charge it, but you would just increase work for the bankruptcy system, at some point.

One other point perhaps worth emphasizing: Plaintiffs prevail in fifty-four percent of the cases between individuals. The plaintiffs collect ninety percent of the fees. There is a big asymmetry between plaintiffs and defendants in terms of the amount of fees awarded by judges. Some of the details about it I will not go into, but I think the bottom line is what is the relevance for the United States. One is if you think a loser-pay system is some sort of savior for the cost of litigation in the United States, be aware that, at least in the one study we have of a true loser-pay system, it is not a panacea. You are still seeing asymmetries. You are still seeing, basically, clients having to dig into their pockets to pay their lawyers substantial amounts, even when they win. The actual level of the award is shockingly low. It is not much higher than the filing fee, which is pretty funny. But clients are paying much more than half of their actual legal fees, even when they win.

Shifting completely to the United States and a highly visible set of cases: class actions. What do we know about class actions? Well, if you read about what is said about class actions, there is some truth, but little systematic study usually. Greedy plaintiffs' lawyers assemble a class that recovers nothing, and the lawyer gets a big fee. That is one of the stereotypical images. That turns out to not really reflect reality. The RAND Institute for Civil Justice did a nice study where it got insurance companies to cooperate with

providing class action data from actions against them, and it turns out the modal outcome of the class actions was dismissal. The plaintiffs get nothing.

There are settlements, like there are in any other case, but it is not true that you file a class action and you automatically collect an award. There is an article published by Geoff Miller at New York University. He read all the available opinions of class action cases for fifteen or sixteen years. What has happened over time? The court must determine that the settlement provides for a reasonable attorney fee. That is rare. Usually, fees are not monitored. A client can pay whatever the lawyer demands, or not pay it. Judges do not get involved. But in class actions when the class is diffusive, there is a conflict of interest between the lawyer and the client; the judge must approve it as a reasonable fee.

One of the things we will sometimes hear is where we just see things going on forever. The top two lines here are the mean recovery and the median recovery in class actions for fifteen or sixteen years. What is interesting is that there is no upward trend in terms of the median recovery. It did not go up for two decades. There is no ever-increasing trend going on.

The lower two lines, that is the mean and median, is the judge-approved fee to the lawyers. Also no trend; it is just flat. A little bit of dip at the end, but who knows if that is a trend or not. But what you do not see is steadily increasing fees. There has not been any real increase in the fees or the recoveries in fifteen to twenty years. I do not think people know that. In fact, this graph, the earlier version of it, was the front page of the Business section of the *New York Times* because this was the time of the Class Action Fairness Act (CAFA). The Democrats and Republicans were fighting and this suggested that maybe we did not need major

reform since nothing was going on, but CAFA passed anyway.

Here are four graphs. In each case, the X-axis is the recovery for clients as stated by the court. The Y-axis is the fee to the lawyer. The first time I did this, it was with the upper left one for the earlier data. A is one time period, B is another time period, C is the time periods combined, and D limits the data to cases with \$100,000,000 or more in recoveries. In some ways, I think the most persuasive data analytics are graphs. That is, you do not need any statistics to see a trend here. As the recovery moves up, the fee moves up. That is this one. And B, if you do the combined time period, is an incredibly tight linear relation. That is, as the class gets larger, the lawyer gets more. This turns out to be a little bit of a revelation. Not shocking, but I am asked quite often now to go testify as an expert and say, yes, this fee is or is not reasonable. I do not follow the traditional methodology, which is to read everything and sprinkle holy water over it and say, yes, it is reasonable. I sprinkle a different kind of holy water over it and say, in light of the data, the fee is reasonable. People seem to like that instead of saying I have read all the documents and it is reasonable.

I think we have not seen this relation before. It is an incredibly tight relation. If you want predictive ability, you can actually have it here. You can say based on the recovery of the class, the range of a reasonable fee is in this range. Again, as we said this morning, it is never predictive of the individual case because every case can have variation, and you have to worry about that. But if you want to study the system, this is useful. Applying it to individual cases can be difficult.

A lot of things in law that make headlines are fees. I prepared some of this for the National Conference for Bankruptcy Judges later this month. Here are some headlines: “Lawyers in

Detroit Bankruptcy May Face Scrutiny on Fees;”  
“Legal Fees Related to American Airlines Have  
Topped \$300 Million and Could Double that  
Amount;” “U.S. Bank Legal Bills Exceed  
\$100,000,000.” People really like to write about  
lawyer fees, especially big numbers.

So what are we to make of this? What is the actual  
pattern of fees in large Chapter 11 cases? Do  
those headlines tell the full story? They have big  
numbers: \$300,000,000, \$100,000,000. They are  
really quite big. What is the underlying reality?  
Well, one thing you can see from this graph is the  
X-axis is the assets of the firm, and the Y-axis is  
its model predicting the fees based on the data in a  
lot of cases. Guess what? As the firm gets bigger,  
the fees go up. As there are more assets in the  
Chapter 11 case, the fees go up. That tells you  
something. Not shocking.

Here, we have a bunch of studies including this  
one, and I think the column of the most interest is  
this one: look at the bottom four entries—studies  
of fees and expenses as a percent of firm size.  
And these are the big ones. The average firm size  
is \$139,000,000, \$310,000,000, \$561,000,000, and  
\$881,000,000. The lawyer fees and professional  
fees as a percentage of firm size are about two  
percent. So yes, you will see \$100,000,000 or  
\$300,000,000 in the headline, but it is out of a firm  
with billions in assets, and it is doing something  
fairly big: it is reorganizing a complicated entity  
with a lot of people fighting over a shrinking pie.  
So it actually costs money.

I do not have an absolute measurement of whether  
two percent is big or small, but if you think about  
real estate commissions, investment banker  
commissions on big deals and what goes into their  
pockets, perhaps for a lot of work, for good  
connections, or for accommodations, these fees I  
am not sure are worth writing home about. They  
are big numbers because big numbers are at stake.

One other interesting feature is the percent of fees applied for, but not awarded by the court. You see it is fairly small. There is some difference between courts, but basically courts award ninety to ninety-five percent of the fees that are asked for. I think there is a lot of filtering going on. That is, the lawyers do not want to look like fools and come in and have the judge say, “You greedy pigs, I am not giving you what you asked for.” So they actually sometimes show restraint in what they ask for, and by studying the massive cases, you can see what is going on, rather than thinking lawyers just ask for as much as possible. So I guess I am done.

## Joseph Doherty

Professor Joseph Doherty: One of the terrifying things that Ted just put up was that last table. I made that table. I looked at it and I realized that if one of my students had turned it in, I would have marked it up for having too many decimal places. It is just the nature of doing this kind of work, you evolve in your practice to be more refined, and you come to accept that one study does not prove anything. You need multiple studies to demonstrate your ideas. And hopefully, they will all average out to the same answer.

I want to talk to you today about something that is dear to my heart, the education of law students. I am not a lawyer. I have a PhD in Political Science, and I am interested in research methodology. I am interested in finding truth. For me, big data analysis allows me to tear apart the world and understand what is going on at the micro level. While I am an expert, I think that there are things that we can teach to law students that will enable them to think about big data without having to become experts themselves. That is what I want to talk to you about today.

This idea of teaching law students how to run data and how to become empiricists is not new to me. It was not new to Ted Eisenberg nine years ago when he said: “Law schools aspiring to train future

leaders should expand and regularize instruction, enabling their graduates to perform the analyses that society thirsts for.”<sup>2</sup> However, there remains resistance in the legal academy about teaching law students to be producers of empirical research. There are courses in statistics taught in law schools, and I have talked to some students who survive those classes. They walk away not retaining much because they do not have an opportunity to use it outside of class. There are courses focused on one particular area of the law. My colleague, Lynn LoPucki, teaches a course on how to run data using the large company bankruptcy dataset that he has created. Those students end that course knowing how to do that one task—how to study bankruptcy empirically—but they could not tell you about some of the things I am going to talk about today.

Today I am going to talk about some basic concepts in empirical research that are complementary to legal training: causality, probability, and comfort with data. I think that these are complementary to the law, but there is resistance to teaching them. The resistance in no small respect comes from the lack of interest from the legal community itself. There does not seem to be any practical use to it. I hope to convince you otherwise, and I encourage all of you to contact the deans at whatever law school you went to and to tell them that they need to start teaching their students how to do empirical research.

Legal thinking is like riding a bicycle. Eventually, it becomes pretty much automatic. By the end of your first year in law school, you can ride with two hands. By the time you graduate you can ride over smooth terrain with your hands off the handlebars. And as your career progresses, you automatically adapt to changes, like going uphill, going downhill, riding a different bike, or potholes. You

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<sup>2</sup> Theodore Eisenberg, *Why Do Empirical Legal Scholarship?*, 41 SAN DIEGO L. REV. 1741, 1746 (2004).

can adapt because your brain is wired to adapt to new legal terrain.

But if you ride your bike with your hands crossed, you are going to crash instantly. It is going to be like you are teaching your body to ride the bike all over again. You need training wheels. You need to fall down a few times. This is what it is like teaching a law student empirical legal studies. You are teaching them to crash. They are okay crashing when they are five years old. They do not like to crash in their twenties. That is why 1L year is such a pain. No one likes to feel incompetent. But eventually, competence returns and these things start becoming automatic. Empirical legal studies wires your brain a different way. The point is to wire it for both legal and empirical thinking simultaneously.

How is empirical thinking complementary to legal thinking? To be a good manager and advisor to your clients, you need to understand risk. You need to understand that the way that you are taught the legal stories and the way you are taught to analyze problems is not the sort of analysis that you need to make if you are trying to balance risk. To balance risk, you need to know the expected penalty if the risk goes bad versus the amount of resources you might spend in order to defray that risk. You have multiple risks at the same time, and you have to balance these multiple risks, constantly playing one against the other. Lawyers need to be trained in risk management, not just the storytelling and speculation that they might normally get as lawyers.

The disconnect between lawyers and empirical legal people, and empiricists generally, is captured quite well in this table created by Bert Kritzer, which is about the differences between legal inquiry and scientific inquiry. Legal inquiry is episodic, focusing on one case at a time. We have a set of rules that we apply to an event. The evidence we deploy is the evidence that supports

the argument. We want certainty. And we seek the truth.

Empiricists are the opposite in every category. Our method of persuasion is repeatability. We do not want just the evidence from one case. We want the evidence from a dozen, hundreds, millions of cases. Otherwise, persuasion is difficult.

Empiricists also value the critical use of evidence. Is the evidence reliably collected? What is the counterfactual evidence? Is this evidence the right measure of the thing it is claimed to be?

Empiricists also value uncertainty. We strive to reduce, or at least quantify, uncertainty because unless we know how uncertain we are, we cannot have confidence in our findings. Confidence increases as uncertainty decreases.

Finally, instead of moving toward truth, empiricists try to reject falsehood. We approach truth by identifying and rejecting the things that we believe are false rather than seeking truth itself.

Can we teach this mode of thinking to law students? I have been teaching my course for five years, and about half of my students have had no statistical training. I have English majors, labor organizers, and even economics undergraduates. I let them know that their 1L classes did not prepare them for my class, but that it gives them a toolkit that is complementary to the legal way of thinking. It gives them a new way of thinking about problems that arise, and a new set of tools to apply in the service to their clients.

What should we teach? As I said before, every law student should be trained to understand causation and probability and should be comfortable with big data, or really any data. Why should we teach them these things? We should teach them because these are rigorous and intuitive

models of the way the world works that will occasionally lead to counterintuitive conclusions. That last bit is probably the most important thing. If you have read Kahneman's *Thinking Fast and Slow*, he talks about how we jump to conclusions without any conscious consideration of the facts. It is because of the way our brains are wired. But we wired our brains that way. It is possible to learn to jump to other conclusions. If you rewire your brain differently, you can think about problems in a separate way. And that is what empirical legal studies can do for law students.

Why teach causation? Legal doctrine is rife with theories about causation. It is central to torts. It is also central to disparate impact and to criminal law. Causation requires three factors. First, you need temporal order: the cause happened before the effect. Second, you need correlation. That is, when the cause happens, the effect happens, too. Third, there must have been no plausible alternatives. Certain areas of the law incorporate this directly. Burden shifting in discrimination law is basically a framework for testing causal claims. The first step in a disparate impact case is to show the first two factors: temporal order and correlation. A landlord buys a building, and within three years, the ethnic composition of the building has changed to match the landlord's ethnicity. Then the burden shifts, giving the respondent a chance to demonstrate that there are plausible alternative explanations.

We see causation in criminal law in *mens rea*. For many crimes, a defendant cannot be found guilty without a finding of criminal intent. In a jury room this analysis breaks down into the following causal query: If the defendant did not have intent, would she have acted differently? How can a jury analyze such a question? One way is to try to read the defendant's mind to deduce the causal mechanisms therein. Another is to assume that causation works backwards—if the crime was committed, the defendant had intent. A third is for

the jury to personalize the causal analysis, as in “Would I have done the criminal act if I did not have intent?” Only the first of these is a valid causal model, but it is difficult in practice. The second is logically flawed, and the third assumes that all minds are equivalent.

We should teach risk along with probability. Why do we want to teach students probability? Probability allows you to systematically analyze risk. Two concepts are very important: independence and dependence. If two events are independent, the probability of each one happening is not correlated with the other one. If I flip a fair coin I will get heads fifty percent of the time. If I flip another fair coin the chances are the same, regardless of the outcome of the first flip. If two things are dependent upon one another, you should be able to model that as well. The odds of being dealt a king at the beginning of a game of blackjack are the same as any other card. But if the dealer has a king showing, the odds of dealing another king are smaller than they were before the game started. That is dependence.

Understanding probability is essential to understanding risk. Not just for analyzing risk as a function of probability, but also for understanding that a lot of fallacious reasoning is subject to probabilistic analysis. An example of fallacious reasoning is what is called prosecutor’s fallacy. For the purposes of argument, let us imagine a crime scene with blood. The odds of a DNA match to a person who is innocent is one in 10,000. The prosecutor’s fallacy inverts the logic and asserts that a positive match means that the odds a person is not guilty is one in 10,000. This is not theoretical. I have heard it used in a murder case in which the fibers found on the body came from one of 5,000 specific model Toyotas registered in California. The defendant owned a similar Toyota, therefore, the prosecutor argued the odds that the victim was in the defendant’s car were 5,000 to one.

What is the fallacy more formally? It is that the probability of A given B is not equivalent to the probability of B given A. Students do not need years of experience in statistics or data analysis to understand that.

We should also teach law students to be comfortable with data, big, large, medium, and small. The complex issues that are facing society right now are made somewhat more tractable by our ability to acquire and analyze data. It is important not just to gain an understanding of what is true or good, but it is even more important to understand that other people will use data in a way to prove their point in potentially unethical or underhanded ways. You cannot rebut if you do not even know what they are talking about. I will give you an example of this.

One of my students had a summer internship at the RAND Corporation. Then he externed for a Ninth Circuit judge. In one of the cases, a brief cited several RAND reports as evidence to support its argument. My student, who arrived at law school with no statistical training, went to the RAND website and downloaded the reports. He reported to his judge that the reports did nothing to support the argument made in the brief, and that the lawyers making the argument obviously did not understand what they were reading. I think that is really important. I think that is vital not only for the legal system, but for justice, and I think it is important for this student. His career will be much stronger because he knows how to do that kind of work.

Finally, it is not always feasible to hire an expert when faced with big data. I have a number of students every year whose goals are to enter into public interest lawyering. They know that they will never be able to spend the kind of money that an expert charges, so they plan to do it themselves. They are in my class to understand causation and

probability and to gain some comfort with data so they can understand, at a minimum, what a crosstab will tell you and what a correlation will tell you. That is really important.

I end with a quote from Judge Posner's latest book: "[Empirical] legal scholarship is the least developed, least accessible, and least prestigious and rewarded field of legal scholarship that relates to the modern federal judiciary, though potentially the most important."<sup>3</sup> We do not get a lot of respect. We cross every single doctrinal border. We do not belong in any one field. Ted belongs in bankruptcy, but Ted publishes across a lot of fields. If your research is primarily within your field, you will not get a lot of notice outside of that field. But if your empirical research crosses a lot of fields, then you will not be recognized as having any field at all. And that is unfortunate. There are very few doctrinal areas that cannot be affected by empirical research. Our goal is to exclude what is false, even if we cannot prove what is true, and to bring a different method of analysis to legal issues. That has to begin with law students.

Thank you very much.

## Christopher Zorn

Professor Christopher Zorn: I am in political science, by training and by trade as well, and I am someone who does work on empirical legal studies, in the same tradition as Ted to Joe, on a number of different subjects, one of which is the legal industry itself. I am interested in a data driven view of the legal industry and what I want to talk about for a little while today is some broad controversy of what is going on in that legal industry, and what I think of as the important changes that we are seeing and the implications that those changes have ideally, I

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<sup>3</sup> RICHARD A. POSNER, REFLECTIONS ON JUDGING 341 (Harv. Univ. Press 2013).

think, for all of you, or certainly all of the law students.

To do that, I am going to show you a lot of data because that is the only way that I can talk about anything. You are going to see lots and lots of data. I apologize in advance if that is not what someone is here for.

Professor Lee started off by talking about what has been going on in the legal industry over the last few years. Here is an illustration of what has been going on. The Y-axis, the vertical part, is the year-over-year growth in gross revenue for three different types of firms: the biggest firms, the fifty largest firms are the Am Law 50, that is the green line; the next fifty is the yellow line; and the bottom 100, or 101 to 200, is the red line.

Notice a few things about this. First, notice what is on this slide. Things were pretty good until about 2007, then the bottom dropped out. The firms that were doing the best, the biggest firms, wound up getting hit the worst. They have also recovered from that turnaround. This ends in 2011, but things have been relatively stable since then. What we have seen, essentially, is this is an illustration, first of all, of that new normal. The growth rates that were hovering around ten percent a year . . . gross revenue growth rates around ten percent a year had been cut more or less in half. You are seeing growth rates at around five percent at best, and in some cases lower than that depending on the firm itself.

The second thing to note about this plot is its flexibility. You can do a number of different things with this plot. I can show you revenues per lawyer. I can show you profits per partner. I can show you profit margins. All of the plots look exactly like this. It does not really make much difference what metric I use. Why is this happening? What went on to drive this change in the industry, in particular, essentially cut the

margins' year-over-year growth in half? From where I sit, I see two different things happening. The first is a top-down effect. Starting in about 2007 or 2008, the economy was not so good, and if you think of the clients as being the top of the legal food chain, clients began spending less. They were themselves potentially losing money. They became more demanding of value out of the law firms that they were working with. So the clients were part of the pressure—top-down pressure.

The other pressure is what I think was a bottom-up pressure, which is to say a pressure on the conventional law firm model. That conventional law firm model has been under attack; not any sort of concerted attack, but more like an attack from a number of different places and a number of different directions. In large part, that attack has come as a result of technology. Back in late January, there was a conference called LegalTech. It was held in New York City this year. It was a fascinating conference and a convention of sorts. If you look at who went to New York LegalTech, one of the things you notice right off the bat is that there were over 200 different companies exhibiting at New York LegalTech. One out of every five of them, roughly, is a publicly-owned company. Anybody know how many Am Law 200 firms are publicly-held companies? One out of five of these are publicly-held companies. Most of them were small to medium-sized companies. These are not very large companies. Think of them almost as start-ups. About one out of every eight of them were not even based in the United States. They were based in other countries: in some cases, Europe; in other cases, Asia, and places like that. A very different set of companies than what you would think of as typical “big law.”

What do they do? They do a lot of different things. About half of them provide products. Some of them do a little bit of both, but the offerings are relatively diverse. When asked, ninety percent of them say that they are focusing

both on law firms and on in-house corporate legal departments. Unlike the typical divide that we think of between in-house counsel and law firms, these are companies that do not make that distinction. Lawyers are lawyers, from their perspective. They really do not see a difference there. And importantly, almost two out of three are in the business of making software.

In one sense, this is not shocking. It is, after all, called LegalTech. We expect a big software component to do this. But the fact is that there are so many of these. If there had been a LegalTech in 1993, twenty-some years ago, around the time I might have been going to law school, there would have been two companies there. They would have been called Lexis and Westlaw. That would have been it. Now, there are over 200 of those.

The diversity of what they are doing is also remarkable. Here are just a few of the companies that were there. You should keep in mind some of these different outfits. Some of them are thinking relatively small; that is, they are providing almost turnkey-type solutions. The ones that we see advertised on television are companies like LegalZoom, but companies like Rocket Lawyer are not necessarily all working at a consumer level. There is an interesting company called Exemplify that is mining the text data of the Securities and Exchange Commission's filings to come up with standardized forms for doing things like mergers and acquisitions. Some of them are doing e-discovery and preemptive coding, things of that nature, like selling services to law firms and working with them to be more efficient at what they do. Some of them are just doing straight up human arbitrage. They are doing outsourcing kinds of things, legal outsourcing to Asia and places like that. Companies like Integron and Pangea3, and a few of them like Axiom and Clearspire, are actually trying to replace the conventional law firm model with something else. They really want to be full service legal services

organizations in a way, but to do so in a way that law firms are not.

Now, where did all of these companies come from? Why do we have this now? Why were there only, in theory, two of these companies twenty years ago, and now, there are so many? Technology is obviously part of it. The data that Dr. Rappa talked about earlier is part of it. The communication technology, the computing technology, everything like that, but there is actually another reason behind this and it has to do with the nature of firms and the people that are in firms of this size.

If we look at the composition of the NLJ 250, the 250 biggest firms, starting back in 1978, we see that the standard idea was that there was a large number of associates and a relatively small order of clients. If you circle your way around this plot starting in 1978 and work your way around to 2013, one of the things you notice is the relative composition of associates and partners in firms has almost flipped. Most large firms now are actually largely composed of partners or individuals who have some sort of partnership stats. That has a couple of very direct implications. It means that firms are getting older, more senior in terms of composition. Firms are getting more expensive on a per-person basis—partners make money. Then that also results in more money to associates, which means that there are more and more younger attorneys out there—as you are probably all aware—who are not getting jobs in conventional law firms, and they are looking for other things to do. That is, there is a very young, energetic talented pool of people who are willing to go to work for all those companies that I had up on the slide just a minute ago. So there is a human component to this as well.

If you dig a little deeper into these firms and if you look at what these firms actually consist of, there is another trend. If you go back to the year 2000,

one of the things you see is a typical split—about thirty percent of the firms are partners, about fifty-five or maybe sixty percent are associates, and there is a relatively small number of people who are either non-equity partners or staff attorneys. What has happened over time, and particularly in the last few years, as you will see in a second, is that firms have been hiring fewer and fewer associates. They have been making partnership harder and harder to make. Firms have also been changing the way they view equity status. So firms have been de-equitizing partners in some cases. Firms that were traditionally one-tier partnerships have moved to two-tier partnerships. The fraction of partners that are non-equity stakeholders in the firm has gone up over time. And firms have gone more and more toward staffing attorneys, using either people who are of counsel or people who are just working as staff attorneys with no formal status within the firm.

These middle categories that compose neither equity partners nor associates on the partner track has almost doubled over the last dozen years. That is where the growth in law firms has been, in those middle categories. The nature of firms is changing in terms of personnel that are involved as well.

The effects of this are actually very interesting. For example, one of the things that the American Lawyer Media does every year is conduct what it calls its midlevel survey. You might have read about this on the American Lawyer website. It surveys midlevel third, fourth, fifth and sixth-year associates at all Am Law 200 firms. It does a big survey. It is 5,000 or 6,000 people every year, and we have been able to analyze that data going back a number of years. It asks a lot of interesting questions. I am just going to show you two.

One of the things it asks is, “You’re an associate now; you’ve been with this firm for a few years. How satisfied are you with your firm overall, on a 1 to 5 scale?” In general, people are more satisfied

the smaller the firm they are at, and that is a general trend. This is size in terms of revenue. But notice also what happened right around 2009, right around the same time the firms were experiencing these trends in the marketplace: associate satisfaction was going down. People became unhappy. The associates, the people who were growing up in the firm, became unhappy.

The other question it asks that I find interesting is, “What do you think the likelihood is that you’re going to be with this firm in two years?” Now, bear in mind, these are midlevel associates. They are not first-years or anything like that. There has already been the weeding process that goes on that first year or two at a big law firm. The people who are really not cut out for it go out the door. Some of these folks are actually potentially going to be up for partner in a couple years. So when you ask that question, you really are asking them, “Do you feel like this is a firm you are going to be invested in?” Once again, people are generally more likely to say that they are going to be invested at smaller firms than bigger firms, but once again starting in about 2009, there was a big drop in this number. Not only are associates less happy, but they do not feel as invested. They do not feel that they have as much of a future at the firms that they are working at. They have declining expectations.

And you can look at other things. It asks another question, “What do you think you’ll be doing in five years? Will you be a partner? Will you still be an associate? Will you be out of law firms? In-house? What will you be doing?” And you would see a similar sort of pattern.

Law firms are not unaware of this. If you have been around a law firm, particularly a big law firm, for very long, you know that they watch things like the results of the Yale and mid-level surveys very, very closely to see how their associates are responding to these questions. So a reasonable question to ask would be, “How have they been

responding to this?” Here, I think it is fair to say that, for the most part, the people who are actually in charge at these large firms have adopted a very 20th century sort of response to this 20th century problem.

American Lawyer Media also does a managing partner survey every few years. One of the things it did last year when it surveyed managing partners was to ask, “Five years out, what areas do you think your firm is going to grow in?” That is, what staffing categories is your firm going to grow in, and which ones is it not going to grow in? So the question, in a sense, is, “Will you have more of this type of person or not?”

At the top of the list—again, maybe not surprisingly—is lateral partners and lateral associates. Managing partners of large law firms see that as the way they are going to build and grow their firms in the future. At the bottom of the list, sorry, new hires: first-year associates and summer associates. One managing partner who actually does not subscribe to this particular model of responding said to me that big law firms are eating their seed corn, that they are not willing to invest in people to develop those people themselves and to bring them up within the firm culture. They are trying to pick off the rainmaking partners and pick off the best up-and-coming associates from other firms. So the market has become very much a lateral market rather than a kind of farm system, the way that law firms have traditionally operated.

Whether that is a good thing or a bad thing, I guess it is immaterial—it is what firms are doing, except in a few instances. There are a few firms that have begun to think a little bit more outside the box. One example is a firm, mainly in Chicago, called Seyfarth Shaw. It is an Am Law 100 firm. Back in the day, it was a labor and employment firm, but it has grown into a full service firm. About a week ago, it caused a little bit of a ruckus in the

blogosphere by posting an ad for something called the legal solutions architect. What is a legal solutions architect?

Bear in mind, this is one of the firms that has been in my data so far. This is an Am Law 100 firm and it is a very conventional firm in many respects. But it listed an ad for a legal solutions architect. What is it looking for? Well, it wants a JD or an MBA. It is not requiring that someone have a JD to be a legal solutions architect. It also has a preference for someone with an undergraduate degree in Finance, Computer Science, Business Administration, or in some other technical discipline. It is interested not necessarily in someone who came out of a History department or an English department and took a conventional path to law school.

The other thing that it mentions that is a big plus is familiarity, essentially, with data infrastructure and various kinds of information, relational databases, workflow management systems, and things of that sort. The reason this caused so much of an uproar is not just because it is a different sort of animal than the typical associate hire that a large law firm would make, but precisely because it is happening within a big law firm, within a very conventional law firm. It is suggesting that some firms are responding in very different ways to the kind of changes and the challenges that they have been facing than the conventional law firm has.

If we take Seyfarth Shaw maybe as kind of a canary in the coal mine, an indication that there is a change that is going on and that people are going to be able to deal with it, then it raises a really important question. What does a lawyer ten, or twenty, or thirty years from now—which is to say, when you all are partners or whatever the equivalent will be—look like? What are you doing to need to do as a lawyer? What does the future lawyer look like? He or she is obviously going to have to know something about the law.

That is going to have to be at the center of everything we do. Based on some of the work we have done and what I have been watching lately, one of the other things that I would argue is that lawyers are going to need at least some kind of a skill set that extends beyond the traditional legal education. This goes very directly to some of the things that Joe was talking about.

Joe is optimistic about the potential for law schools to provide the kinds of things that will be required. I do not know if I am that optimistic about law schools themselves doing it, but I think successful attorneys ten, fifteen, or twenty years from now are going to need to supplement their deep knowledge of the law with at least one, and maybe more, sorts of competencies. We might think of competencies in technology, things like software development, particularly things related to database infrastructure or computing. Probably not hardware, but probably things like Hadoop, MapReduce, Pig and some other kinds of technical solutions for dealing with large amounts of complicated data.

Another possibility that was talked about at some length is analytics. At some level, this is statistics. Statistics are good. Some of the prerequisites to statistics that Joe talked about also fit in this category, things like probability and understanding. But this also goes a little bit beyond that—the kind of predictive analytics that is a little bit beyond conventional statistics. It also goes with ways of managing text data, so some of the tools have come out of computational linguistics, like machine learning, and actual language processing are increasingly important to law firms. Also important to law firms are data tools: tools for gathering data, scraping data, pooling data, assembling data, and managing data.

Lawyers are going to need to know something about business. I never went to law school, but I was appalled when I learned how little law schools

typically teach people about business and the business side of being a lawyer. One of the studies that we have done with Lawyer Metrics is a study of rainmakers, meaning we have talked to prominent partners of large law firms and tried to find out what it is that makes some partners very, very good at generating business for the firm. What is the difference between a \$1,000,000-a-year partner and \$15,000,000-a-year partner? One of the things that we have learned is that these are often people who are self-educated when it comes to things that. If you were in any other human services field, any other high-end professional field, be it consulting or accounting, investment banking, whatever, it would be taught to you when you were getting your MBA. Lawyers have never heard of Six Sigma. They have never heard of Mean, or Agile, or C and AG, or any of these other sorts of terms that get used in the business world for managing workflow, for business development, for networking and for other things of that nature.

At Lawyer Metrics, we are doing some work with psychometric assessments to assess things such as whether particular individuals are better or worse fits for particular kinds of practice areas. But beyond that, you can think of things like randomized trials or A/B testing that a firm with an ongoing client and a number of different matters might try, and then assess what kinds of approaches work better.

Businesses are increasingly going to demand these sorts of things from the law firms that they hire, in part because those things are increasingly being demanded of them by their own clients. It is not unreasonable to expect them to demand those things. What is unreasonable is the fact that most law schools are not teaching those things right now. I am just going to leave it at that, and hopefully that will spark some discussion about where we might go from here. Thank you.

## Panel Discussion

Professor Eisenberg: We should open it to questions from the floor.

Male Voice: You mentioned in your presentation that you felt like there were no big studies about frivolous litigation. At SAS, for the last two or three years, we have been involved in ten or more frivolous patent litigations, patent troll litigation in particular, where, in my perspective, ninety percent of it was frivolous. The reason that you do not see the studies is that everybody settles and has nondisclosure agreements. I have to say, at least in that particular instance, I think your statement about frivolous litigation is incorrect.

Professor Eisenberg: Well, to convince me, you need to publish a study in a way that can be peer reviewed and believed. Right now, I have a statement by in-house counsel saying, “When my client is sued, we are always right and they are always wrong.” That is every in-house counsel’s view.

Male Voice: I can give you a little bit more detail on that. I know one instance does not make a study, but we had a case last month where we won; and any patent lawyer who reads it would say it is, on its face, valid. We spent \$8,000,000 defending ourselves, although twelve software companies had already settled for almost \$100,000,000 in total. We had another eight companies that were riding on our coattails. We had the case thrown out by the judge in summary judgment after spending the \$8,000,000 and a one-paragraph affirmative ruling by the federal circuit saying our patent is valid.

So again, this is a single instance, but I can tell you every one of the ten that we have been sued on would have similar outcomes if we would have gone through the time, expense and trouble. The problem with the patent trolls is that they are willing to take \$50,000; they are willing to take \$30,000; and when you have \$8,000,000 in costs

on the other side, it is very difficult to rationally take that case to the conclusion. So I think that you should be careful when you say that frivolous litigation is not going on.

Professor Eisenberg: Let us take a step back and say you are right. You have been the victim of very weak lawsuits. I can give other anecdotes where this is certainly true. There is a huge scandal in silicosis litigation in Texas. That is a pretty rare condition and they found it in ninety-nine percent of the people they screened. The judge eventually said this is crazy, you guys are committing fraud, and threw it out. So there are undoubtedly terrible lawsuits out there, but I think the question from the system's point of view is, what rule or legislative change would you support to get rid of them? The only rule I guess I expressly discussed here was going to a loser-pay system.

Male Voice: That would solve the problem.

Professor Eisenberg: I do not think it would.

Male Voice: It would solve the problem for us.

Professor Eisenberg: I am not sure it would.

Male Voice: But the plaintiffs would not bring the case.

Professor Eisenberg: The plaintiff would not have the money to pay you if he lost.

Male Voice: What they are doing is creating organizations that are publicly financed at one level, and then they are breaking off subsidiaries and affiliate corporations that can go out of business.

Professor Eisenberg: Exactly. And so what is the difference?

Male Voice: It has got to be loser-pays, but also almost a piercing the corporate veil because if you can just throw yourself out of business and roll up the operations . . .

Professor Eisenberg: You might want to be really careful about expanding piercing the corporate veil in a large corporate environment. That is probably not going to benefit the defendants more than the plaintiffs.

Male Voice: If you act in a way that piercing is justified . . .

Professor Eisenberg: If we change to the loser-pays rule, you are telling me that until we pierce the corporate veil, if the losing plaintiff does not have enough to pay, loser-pays is not going to help you. So the alternative solution is where we have to require everyone to have litigation insurance, so that when you win in court, this money would pay you and then we can have the same system we have for car insurance. You cannot touch the court unless you have insurance if you lose. Litigation insurance is a product of many countries, and we can get into that. But a simple loser-pays shift does not help much with truly frivolous litigation if the people do not have money to pay you when they lose.

Other questions?

Male Voice: I was wondering if Professor Zorn could tell us a little more about Lawyer Metrics.

Professor Zorn: It is a little company that Bill Henderson at Indiana Law School and I started a few years ago. We help law firms do their jobs better, primarily when it comes to human beings. We help with hiring attorneys, developing attorneys, training them and making them better at what they do. We do so fundamentally, by using data. We are a data-driven, evidence-driven company, and we bring to bear all the different kinds of methods, broadly speaking, that Joe was talking about. We do a lot of internal evaluations of firms; we help firms figure out who is more or less likely to be successful in a particular firm's culture or environment. I do not want to go too much into it because I do not want to sound like an ad for our company or anything like that, but we work

mainly, but not exclusively, with big law firms. We have done a little bit of work with law schools as well, but most of our work is with law firms.

Female Voice: What is your recommendation, as people in the academic field, for us law school students to be better at joining the workforce?

Professor Doherty: Part of it is to choose the things that you want to self-educate yourself on. There is a lot of education available online for free. If you wanted to learn how to do data analysis, very simply you could start by going to YouTube and looking it up and following tutorials. You would be amazed at the response that my students get in job interviews when they simply tell the employer, “I know how to use data, and I ran data, and I downloaded this file, and I did this analysis.” That is all they want to talk about in the job interview. They do not care anymore about their legal training, because everybody is getting the same legal training, but these students know something about the study of data. And they might be able to use that. So if you are not getting it here, I would start by doing self-education.

As far as one of the other things I talked about with causality, there is this new movement in empirical legal studies, and I think in the law generally, which has branched out of something called taking the “con” out of econometrics. It is called the “Credibility Revolution” and it is all about thinking about causality and not just running data. You can run data all day long and come up with all kinds of significant correlations, but if you do not build something about causal modeling, you cannot say a lot. So I would start educating yourself just on causality.

There is not a lot of literature out there yet on that. If all you are doing is running data, you do not have much credibility. You really need to learn about causation and about how to run data with causation. So I would try to familiarize yourself

with those two things separately, if you cannot do it through any sort of formal course. I think the two of those would probably help you out a lot. That is just my opinion.

Professor Eisenberg: It is a hard market, but the gentleman from SAS talked about the growth in patent lawsuits.

Male Voice: Yeah, if you have a technical degree—

Professor Eisenberg: [Interposing] Maybe you do not, but at least that is one growing area. Something that comes and goes, that I think is declining, is bankruptcy. If we are not in a recession now, we will be at least two or three times in your career. There will be a demand for bankruptcy skills. One thing is to look at what is growing and try to figure out whether it will keep growing. Patents will grow enormously. “IT” is a word used in law school and law practice that did not exist when I started law school or started teaching, and now it is huge everywhere. Become a patent troll lawyer. Extract settlements without a lot of investment.

Professor Zorn: I would maybe add one other thing. Nothing that either of these two said is a bad idea. Another thing—well, I guess it is in two pieces, unrelated. One is that once you get that first legal job, you are probably not going to have a lot of spare time lying around for this sort of thing. It is only October. If you can jump on this sooner rather than later while you are still here in law school, it would be beneficial. You may think your life is hard and busy now, but it is only going to get harder and busier when you are out there in the world.

The second kind of related thing is that most of the time, most people do not do this because it is boring. But it is not really boring. The reason that it is boring is because somebody is handing you something and telling you that you are supposed to analyze this. “Here is some data. Tell us about

what is going on.” That is exactly the wrong way to go about it.

I knew a law student once at Penn State who had, for a while, been a paramedic in a previous life and he actually volunteered. There is a volunteer paramedic group on the Penn State campus like there is at a lot of big universities. He would volunteer when they would have big events or graduation, football games, and things like that. He was in law school and he was sitting in on a graduate-level statistics when he decided to write a paper on how many non-Penn State fans would be at football games maybe causing fights. He used different variables, such as start time of the game, fierceness of the rivalry between Penn State and the opponent, the ranking of the other team and how far the opponent was from Penn State. He made sort of a data analysis of it, not because it was especially useful itself, but because it was really interesting to him. And in doing so, he learned all kinds of really useful statistical skills.

He is a lawyer now. None of his findings are ever going to be useful to him as a lawyer—those findings are kind of interesting to tell stories about—but the skills that he learned could be very useful. So if you make it about something that you are actually interested in, and put together some data about something you care about, you are going to be more likely to go through with it if you are trying to teach yourself along the way.

Dr. Silvia Hodges Silverstein: I am offering another option in addition to what was already offered. There are so many courses now out there on coding, or all sorts of quantitative methods on Quizera, Udacity, Khan Academy. They are all free, great schools, and they put their whole courses out there. I took something very different. My undergraduate degree was in Economics and I am very mathematical, so I took an undergraduate course from Princeton online for free on Quizera on Medieval History. You can do all sorts of courses.

And you all know, I am sure, Dan Katz; he always says coding is something that you might want to embrace as law students. So I totally second what was said. There are so many courses out there. Do them now.

Male Voice:

When you look thirty years ahead, one of the things that we can reasonably know is that we are going to have a huge, rising international middle class and a lot of wealth being produced outside of this country. I think one of the things that students need today is to have more exposure to other legal systems and other cultures. They need to do that online, as well.

Professor Eisenberg:

That brings up another area. Patents have grown enormously in my career. But immigration law is just going to become more and more important. A lot of American businesses want to import, in effect, foreign talent. A lot of foreign talent wants to come here, and we want to go abroad. I am from a very small town, Ithaca, New York. I think we have 50,000 people, including students. We have one of the most active immigration law practices in the country at a firm in Ithaca. It just developed this expertise.

Unlike most of our suggestions, you do not have to go near data to get a job with an immigration law practice, and a lot of these people have money. You can buy your way into America for \$1,000,000, basically. Invest \$1,000,000, create a few jobs, and we will let you in. So that is another area. There are specialties where you can try and develop some expertise, maybe even before marketing yourself. But they are narrow windows of the law. The broad-based practice of corporate law I think still remains easier to get a job in, and what a lot of students want to do, including my children, is to save the world. It is very hard to walk into a job that pays you to do that; you have to pay your dues the way an actor or an actress would.

## Silvia Hodges Silverstein

Dr. Silverstein: Thank you very much for inviting me to your symposium.

The legal industry, as we have heard from the speakers before, is undergoing a lot of change. As law students, you do well trying to understand what is going on as you are planning your future.

I believe that law school students, in addition to learning about the law, today should learn about the business of law, about management, about marketing, and about the use of technology. You need tools to succeed, tools that give you a leg up over your competition. You need something that makes you stick out from the crowd.

A Chicago firm, Seyfarth Shaw, has done just that. Through its focus on project management and process improvement, Seyfarth Shaw went from a firm that was just like many other Am Law 100 firms to a firm that sticks out in the market. “SeyfarthLean,” a combination of Six Sigma and Lean, helped it to get a competitive advantage. It has won many clients just by using this approach.

Why not go out and get certified as yellow belts or green belts in project management and process improvement before you graduate? My colleague Larry will tell you more about project management and process improvement later. But you need to have more than the belt—you need to *think* process improvement and lean.

Why has it become so important? Let us have a quick look at what has happened in the legal market in the last few years. Pre-2007 was a seller’s market in the legal industry. Every November, law firms wrote letters to their clients saying, “By the way, as of January 1st, our fees will go up x percent.” That used to be a common, automatic practice. Then came 2008, and you all know what happened. The economy went down

with the Great Recession. In the following years, many law firms were in a “wait-and-see” position. People wanted to wait out the bad times to return to business as usual. But that did not exactly happen. Still today, competition is intense. Clients feel like they are in the driver’s seat. They no longer simply accept rate increases and watch how firms staff their matters.

By and large, as we heard from Christopher Zorn earlier, the legal market is flat. The combined annual growth rate of demand for legal services went down significantly in 2009 and has since remained flat. There is a little bit of growth in some areas, but not much overall.

What is interesting is that while demand has gone down, rates have gone up by 3.5%. One may ask, how does that make sense? Normally, when demand goes down, prices follow. Not so in the legal profession. Looking at the development of rate realization, however, tells another story. Realization is about how much you are actually getting. If you send your client a \$100 invoice, how much are you getting paid, \$85? In that case, your realization rate would be eighty-five percent. Since 2009, realization rates in most law firms have gone down. What this means is that you may have raised your hourly rate, but your clients are not paying these higher rates.

What lawyers, law firms, and you as law students need to understand is that the legal market has fundamentally changed. Today, we have great data availability and market liberalization. In 2007, Slater and Gordon in Australia was the first law firm ever to be listed on the stock market. The 2007 Legal Services Act in the United Kingdom allows alternative business structures. Please do not say the United Kingdom “is far away.” It would be very naïve to argue that we do not need to care what they are doing in the United Kingdom. It is really not that far away. As we heard, globalization is here and a lot of things that

happen in one country have effects in other countries. Then there is the rise of procurement—I am going to discuss that later—as well as an oversupply of lawyers. The financial crisis just made it all worse and acted as a catalyst for the change. All of it together shaped the legal market in a way that we have never seen before.

For example, general counsel have always had many things on their plate. They are the chief risk managers for corporations. But now, managing budgets has been added to their to-do list. While so-called “bet the company” cases may continue to be excluded from budgetary scrutiny, a large part of legal work is expected to be done within budget. Many clients have realized that not all legal work is the equivalent of complicated heart surgery; a lot of things have processes and standards. They just need to get done. So clients look for efficiency. They do not want to pay for unnecessary work. And they need to stay within budget. A few weeks ago, I spoke with the CFO of a Fortune 100 company, and he said, “I am so sick and tired of legal telling me that they have to be excluded from budgeting and normal corporate cost savings. That is why we [as in CFOs] have to go in now and take care of this.”

Clients also started to embrace e-billing and UTBMS codes. UTBMS stands for Uniform Task-Based Management System. UTBMS codes are a series of codes used to classify the legal services performed by a law firm in an electronic invoice submission. In the past, law firms could submit an invoice “for services rendered: \$1,000,000.” Sophisticated clients no longer accept this. E-billing requires detailed information. This is where we get the wealth of data to analyze. It allows for reporting systems and business intelligence in the legal industry. These analytics tools have been used in other areas of business for a long time, but they are now finally being applied to the legal industry as well.

Do not let me forget to mention what happened back in 1992. In the early 1990s, DuPont had significant legal expenses. It decided that it was spending too much money and was working with too many law firms. It reasoned that it cost the company too much money to manage many different law firm relationships, so it introduced the “DuPont Legal Model” and started the convergence trend in the legal industry. In other words, DuPont drastically reduced the number of law firms it would work with. Instead of—I am making up these numbers—750 firms, DuPont would then work with fifty firms.

About ten years later, AFAs, that is “Alternative Fee Arrangements,” became all the rage. Years before the downturn of the economy, clients started to ask for fixed fees, flat fees, success fees, retainers and so on. They wanted to be able to budget. AFAs require that you have insight into what will be involved, which scenarios are likely and so on. And it requires law firms to take on risk.

In 2007, the ACC Value Challenge was kicked off. The ACC is the Association of Corporate Counsel—the in-house lawyers’ association. The Value Challenge is its initiative to reconnect the value and the cost of legal services. It promotes the adoption of management practices that allows everyone to achieve their key objectives. The Value Challenge is based on the concept that legal departments can use management practices that enhance the value of the services they get, and law firms can reduce their costs to corporate clients and remain profitable. Please search for “ACC Value Challenge” and read about it in detail because the clients say exactly what it is that they want. You need to know that.

What the ACC and its members want is value, reining in cost, and predictability. If a lawyer claims that he is an expert on a certain topic, it says, he should be able to budget. So when I ask,

“Larry, how long will it take and how much will it cost?” What do you think Larry, the lawyer, will say?

Male Voice: “It depends.”

Dr. Silverstein: “Yes, it depends.” Or, “I don’t know.” Well, of course, we would say, “If you are such an expert, you should be able to put a price tag on it.” Companies like price tags that they can rely on.

But let me tell you know more about procurement, as I mentioned before. Procurement used to be a rather tactical function. But in the 1980s, it became a more strategic approach. Rather than just looking at the immediate price, procurement thought about the total cost of ownership. It reasoned that it is not always best to buy the cheapest thing. When you buy the cheapest thing, it may not be what you want. In fact, it might end up costing you more having to repair and correct it when things go wrong. So things have to have the right price, not necessarily the cheapest price.

In the 1990s, procurement introduced reverse auctions to source products and services. Think eBay. A reverse auction is basically the other way around. Instead of prices going up, in a reverse auction, you bid to get the job. So prices go down. Procurement asks, “Who wants to do the job?” Then Fred says, “We would do the job for \$500,000.” Sue-Ella then says, “We work more efficiently. We can do it for \$450,000.” And Chris says, “We are even more efficient. We can do it for \$400,000.” And so on. You bid each other down. This approach was invented in the 1990s and has been used in a lot of different areas.

Initially, procurement bought things: pencils, paper clips, raw materials. Over time, it started to buy services. And in the late 1980s and early 1990s, procurement started to become involved in purchasing engineering and architectural services. How do you think the engineers and architects

reacted? What did they say? “Every building is different. This is not paperclips and widgets, our services are important. This is complex. You are not engineers. You would not know what is important. You would not know how to distinguish quality work from bad work. How do you dare?” What do you think happened? Did that stop procurement? No. Procurement is still procuring engineering and architectural services today.

The same thing happened with marketing services in the 1990s and in the early 2000s to accounting services. If you talk with anybody from the Big Four accounting firms, they will tell you that they have account managers who just work with procurement. It is their job to understand what it is that procurement wants and to understand exactly how they need to work with them. Now procurement is on our doorstep. Actually, it has already entered the house. And what do we say? “Every matter is different. This is not paperclips and widgets, our services are important. This is complex. You are not lawyers. You would not know what is important. You would not know how to distinguish quality work from bad work. How do you dare?” Everyone seems to think that their legal services are even more different from the other ones. The take-away here is do not fool yourself. Procurement is *not* going away. Learn to work *with* procurement.

We had a conference in New York a few months ago and I invited the chief procurement officers and general counsel of different organizations. It was very interesting to hear how they collaborate to achieve the desired outcome for the companies: good quality at reasonable prices. Toward the end of the conference, the chief procurement officer of one of the organizations scanned the audience—which was mostly lawyers—and said, “I know that many of you wish we [procurement professionals] would go away. But let me tell you: When we have our hands on a category—[because, for them,

legal is a category, like many others]—we are not going to let go. Get used to us.” So if you think that once the economy is good again that procurement will be a thing of the past, guess again.

If I may, I want to encourage you to read our case study on GlaxoSmithKline. My research colleague, Professor Heidi Gardner, and I just finished a Harvard Business School case study on GlaxoSmithKline’s legal procurement. This case shows how a sophisticated collaboration between procurement and legal can lead to great success using reverse auctions and other tools.

I have not even mentioned legal operations professionals. They are typically part of the legal department itself and report to the general counsel. This is different from legal procurement that typically remains part of the procurement department and reports to the chief procurement officer. So now, legal departments have legal operations people, experts in finance and accounting, people with very numerical and quantitative backgrounds. They are great at crunching numbers. They look in detail about how long something will take, how much something will cost and so forth. They measure, they compare, and they manage relationships with law firms.

There are many tools and publications today that help legal procurement and legal operations do their job. In the past, clients did not measure much when it came to legal services, but legal spend management has become normal for many clients.

I want to point out that procurement typically does not tell the legal department, “You need to hire this law firm or that law firm.” Most legal procurement people—even though a fair number of them are lawyers—would say, “We do not have the knowledge to make that decision.” But legal procurement professionals most certainly are

influencers and gatekeepers of information. They are the ones who say, “This is what we see in the market, so why don’t you try out this, or why don’t you try out that?” They are also the buyers of legal services. This means they are the negotiators. Negotiating is a very particular skill to have. I want to stress that negotiating about money is very different from pleading and negotiating in court. But legal procurement professionals are typically *not* the final decision makers—the general counsel or the legal department still is, or sometimes the CEO or CFO, depending on the company.

Also, depending on the company is *how much* procurement is involved in legal services sourcing. This can go from almost everything, almost all matters, to being limited to court reporting, e-discovery work and areas that the in-house lawyers do not feel like they need to bother with anyway.

Here are some screenshots on what software legal procurement and legal operations would use. These new programs allow legal procurement and legal operations to slice and dice the data and to compare apples to apples and oranges to oranges. For example, you can define what kind of case it is, in what kind of industry, and you can see the cost range and the typical staffing profile, among other things. When a lawyer requests a raise for her hourly rate, you can look at benchmarking data for lawyers in her area of practice, with her years of experience and at her tier law firm in her city. Then you can say, “Ok,” or you can say, “No, you are already x percent over the market price. We will not accept the higher hourly rate.” The programs allow you to play out different scenarios to see what would be the best staffing to allow a beneficial outcome and save money.

Dashboards also give early warning signs of what is going on. It can compare law firms and detect patterns and bad behavior. It keeps people very honest when you can easily detect that someone

*always* bills x hours on Saturday, or regularly bills twenty hours a day and so on. Nothing goes unnoticed, at least theoretically. There is no hiding.

Let me close by saying that you have the chance to understand what is going on in our industry and embrace analytics and other wonderful things like project management and process improvement. I am convinced that it will help you be prepared for the future. Get smart, get ready, and learn about this new environment.

I wish you all the best.

## Larry Bridgesmith

Professor Larry Bridgesmith: You are probably aware of this, but Silvia is literally the western world expert in legal procurement and pricing. She probably has earned the only Ph.D. in the field of legal service procurement on Earth. You are listening to a certified expert when she talks about the procurement curve and how it is changing the face of law.

I am a process geek, so I am that guy referred to earlier who speaks Six Sigma, Kanban and Lean. As a matter of fact, I earned a green belt in Six Sigma, but it would not help me in a club fight.

Regarding the value of which Silvia has spoken, let me give you an insight into a similar development in the corporate world. If you remember her serpentine timeline, at the same time procurement was changing the way in which products were purchased by corporations, services were being acquired by large corporations in a similar manner.

Those large corporations and the globalized economy they were in business to serve were also dealing with efficiency measures. How did they become increasingly efficient where waste was

unwelcome? And how did they become increasingly capable of predicting both their profits and their costs? That is where Six Sigma, Kanban and other project management technologies led to process improvement. These were the methodologies by which these industries began to change the way in which they competed in a global marketplace.

There was a time when Nike's CEO once said, "Every year, I give my general counsel an unlimited budget, and every year, he exceeds it." Those days are gone because of what has taken place through globalization of the larger commercial economy.

For example, the former general counsel at Wolverine, the global footwear company, chose to impact the acquisition of legal services at his company through project management and process improvement. He reduced legal spend significantly during a period of rapid company growth. During the same period of time, law firms like Morgan Lewis began to bring project management capabilities in-house so that they could better manage their legal practices. The firms applied project management to improve the performance of their bankruptcy services. It reported that the firm reduced the cost and increased the efficiency of its bankruptcy practice by thirty-five percent. Those are the commonly reported outcomes of the application of process improvement and project management to legal matters.

So if we can, as lawyers let us consider the fact that we are not as special as we think we are. We manage processes and we practice law. Owen is going to speak in a moment about the application of technology to a specific practice area, which will be revolutionary to some if you are unfamiliar with it. But as process people, can we learn from what other process experts have accomplished? In

other words, can we better manage our processes so we can practice better law?

Because if process improvement and project management can build skyscrapers, put space shuttles in orbit, or even help launch military attacks, then we as legal service professionals encounter no more variability or complexity in the legal work we manage than any of those applications. So it is time to get over the notion that we are so special that project management and process improvement cannot apply to the legal services that we provide.

What is legal process improvement? It is an approach that refines the processes to improve efficiency, and most importantly, eliminates waste so that the quality of the legal services provided is improved as a process. Process improvement benefits both the client and firm.

It is not solely the firms' interests on which we must focus. As legal service professionals, we have always had an ethical obligation to put the clients' interests first. But over the last decade leading up to the Great Recession, we seem to have forgotten that duty. Process improvement helps put the client—the customer—back in the driver's seat.

Legal project management (LPM) is a similar, but not identical, methodology. LPM begins with defining the problem to be solved, then planning, executing and monitoring the project to keep it on budget, on time and with increased quality. Finally, LPM concludes with an after-the-fact evaluation of the project to ensure that continuous process improvement makes project outcomes even more effective in the future. LPM is the setting and the meeting of client expectations through ongoing, effective communication.

Too often as lawyers I feel like we have been merely reactionary. We have not always sat down

with a client on the front end of a legal engagement and asked, “What is the problem we are trying to solve?” Understanding the client’s business, the internal client that is being served, particularly by general counsel and by the company’s business units, including finance and operations, is critical. How do all of the business objectives apply to this legal problem that we have to scope on the front end and then begin to plan for the ultimate outcome? And when it is all over, can we do an after-action review? In turn, if we do these things that the methodologies have taught businesses to do in every other area of their operation, every other area of their delivery, and in all of their manufacturing processes, we will improve both profitability and price predictability at the law firm level.

The notion that this would be a nice thing to do is no longer enough. Why should we care? The data suggests that there are 200 corporations, some of them represented in this room, that today purchase eighty percent of the global legal services. There are thousands of additional clients that are corporate entities that are applying these same methodologies to their work. It is now the clients’ turn to be in the driver’s seat. They legitimately expect us to apply their efficiency methods to our business model and delivery of legal services.

What are the key elements of this revolution in the delivery of legal services? First, there is process, the discipline of taking a project and reducing it to its fundamental parts and creating a plan with the certainty that as soon as the project is kicked off, the plan will change.

Project plan changes are inevitable. They are to be expected. Project management is all about the creation of a plan of expected outcomes so that we can be prepared to respond quickly to the unexpected outcomes. A complex legal matter is no different than a military invasion. Both require project management capability and the people who

know how to do it, as supported by appropriate technology. This “new normal”—we have already heard the phrase today—what does it really require of lawyers?

When I first heard the phrase, “the new normal,” in Professor Richard Susskind’s “Tomorrow’s Lawyer”—his latest text that came out earlier this year and has become a must read in our industry—I asked, what is being expected by our clients in today’s economic environment? There are four components of that attorney-client relationship. Let us take a look at each of them.

Transparency - What is transparency and why does it matter? In every other area of commerce, data exists and we as individuals have immediate access to it. Instantly. Legal services should be no different. Real-time information about the status of every matter should be clients’ entitlement, and that transparency cannot be forfeited by simply hiring the next hired gun.

Collaboration - It also requires collaboration. And the attorney-client collaboration requires a different set of skills based upon the way in which people communicate with each other. If it is knowing what the clients’ internal demands are, research and development, operations, finance, or what the C-suite expects, it is finding a way to bring all of those perspectives into the focus of the project, litigation or transaction so that those business objectives are met. First and foremost, it is our responsibility as attorneys to satisfy and meet the clients’ needs. And sometimes it takes far more than hearing from just the outside counsel who might have a better idea in their own minds of what those needs are. And it requires that we work as partners with a strategic and interactive plan to solve the problem.

Partnership - The attorney is not the architect of clients’ legal needs, but instead should be a process engineer that works with them to achieve

the clients' goals and objectives. It has been referred to already. The complex adaptive system that describes the system of law requires collaborative communication across those disparate systems. It is not hierarchical. It is communicative. And as we have seen, even the ABA recognizes that the responsibility of attorneys is to be conversant with the technology that satisfies client needs. These are the things that I believe are being asked for and rightfully expected by today's clients, and they are in turn driving this legal business model transformation.

Technology - So what does all of that suggest? The capability of technology to help process data has already been alluded to. In support of Dr. Rappa's remarks earlier this morning, the capacity of computers to process information has already exceeded the capacity of the human brain. Back in 1998, Hans Moravec made a prediction that suggested a pretty linear approach to the way computers would improve the processing of data. And as we have already seen, the power of processing from a computer that cost \$15,000,000 in 1993 can be replaced by a computer that costs under \$1,000 today. Computer processing power is measured in what is called Floating Point Operations Per Second. From 10 to the 10th power, to 10 to the 8th power, it is no longer linear.

Instead, the processing speed improvement has actually become exponential. From 2009 in Los Alamos and nearly two years later in 2011, the capacity of computers to process data has exceeded the estimated processing speed of the human brain. It was Ray Kurzweil, who was also referenced earlier today, who suggested that by the 2020s, computer-processing capability would be able to think like humans. He suggested that by the 2030s, the whole world's human brain processing power would be achievable in a single computer.

None of these projections contemplate quantum computing, which replaces the binary zero and one with infinitely variable relational options. We are on the verge of witnessing quantum computing escalating the improvement of processing power beyond our human imagination. Whether those predictions prove true or not, the point is that the capacity of computers to process data has already passed beyond human capabilities.

How, for example, can we take legal project management techniques and bring them into law firms and legal departments to improve the planning, the budgeting, the execution and the monitoring, and the controlling of legal engagements? When there are many projects that are ongoing, involving many shared human resources with data that needs to be transparently shared in a collaborative way and in real-time, can we do that manually? Clearly, only technology can process that level of data and allow attorneys to go back to practicing law.

One of those technology solutions is ERM's Lean4Legal software application. Lean4Legal's LPM capability meets the legal needs of practicing lawyers and provides them with a digital yellow pad to work from if they do not have process maps already developed for their legal work. It also allows them to create a wide variety of projects and budget them in very short order, based upon the templates and the professional experiences that they have had to date. It permits real-time communication through text messages and e-mail alerts.

As a result, in anticipation of a variance in the project execution and before it goes off track, the parties can react to it and address the change in scope. This technology enables the client and lawyer to adjust the project to the satisfaction of both, before the problem arises, rather than finding out about it significantly later when the bill is received for work that was not anticipated. Then,

and in real-time, the system provides reporting that is constantly updated as a result of the ability of technology to take information, process and report it synchronously.

In addition to planning and budgeting prospectively and creating cash flow projections, it is critical that we understand—and Steve Jobs said it best—“Technology is not the solution. People are the solution.”

Technology is merely a support system for the people who are engaging in the professional services that we have all sought to deliver and to achieve success in providing. We hope that we are doing a better job of it, but we can always do better. Understanding how all this comes together is the opportunity, and Owen is now going to give us a perfect example of how technology takes it even further from process into the practice of law.

## Owen Byrd

Mr. Owen Byrd:

I want to make one thing clear right up front: my weird job title. Out in Silicon Valley, it is really normal for technology companies to have someone who is a chief evangelist, who is the keeper of the flame, and who goes out and spreads the good word. While I did see that you have one of my favorite Bible verses outside on your wall, I am not here to talk about that today. I am here to talk about “Moneyball for Lawyers” and how data and analytics are transforming the practice of law.

I am presuming most everybody here has read the book, seen the movie, or otherwise has been exposed to this term. “Moneyball” has become shorthand for making decisions based on data and analytics. What do I mean by “data and analytics?” The data itself is just a collection of facts. In a moment, I am going to show you a whole bunch of legal facts. What is really interesting is the analytics, which is where you discover and communicate meaningful patterns in

that data. And as I am sure you have heard, data and analytics are changing many different professions and industries, from healthcare, to politics, to marketing, to management, and to military strategy. And now it is also changing law, which is why we are all here for this terrific event. I really commend Campbell and the Law Review for choosing this topic. You do not know how out front of much of the rest of the world you are.

So what do I mean when I say “Moneyball for Lawyers?” All of us who are lawyers or law students learn to do two things: we learn how to do legal research in order to find the rules or the statutes, and thus the precedents that apply to a matter. Secondly, we learn to apply legal reasoning. My client comes to me, tells me his problem, and I use my lawyering ability to combine legal research and legal reasoning to serve that client and resolve a dispute or engage in a transaction. Well, I am now asserting that there is a third leg to the lawyering stool, and that is legal analytics. When combined with traditional legal research and reasoning, predictive analytics gives one the ability to succeed in the business of law—we will talk about that in a minute—as well as the substantive practice of law itself.

Who are we, and why do we get to say this? Well, Lex Machina is a Silicon Valley startup. We started as a joint project of Stanford’s Law School and Computer Science Department. A bunch of tech companies and law firms donated a couple million bucks, and the computer scientists developed the systems we use, which are called natural language processing and machine learning. I am not an engineer, so I made them explain it to me about twenty times so I could, in turn, explain it to you. Here is what it does.

Natural language processing takes unstructured, verbose data, like legal data, and machine learning then repeatedly learns as it goes to make sense of that data. Every night we go out and we crawl

PACER, the federal court reporting system, and we look at all the cases in our subject areas—patent, copyright, trademark and antitrust. We get a little smarter every night because the machine slowly learns that this word next to this word, or this subject combined with this subject, has meaning. So we are using some truly magical technology to code, clean, tag, and classify all this unstructured data, and then, most importantly, build datasets out of it that nobody has ever had before.

So what do we have? We have got all of the intellectual property (IP) and antitrust cases going back about fifteen years. There are almost 150,000 of them. Cases in PACER are comprised of three basic things: one is the field that the court clerk enters about the case. One of the reasons legal data is such a hard nut to crack is that the clerks mess it up all the time. They put the lawyer name in the firm name field. Or they put the name of the party in the field for the name of the judge. It is a complete mess and we have to normalize all that stuff. Secondly, there are the docket events themselves. Each event that happens during that litigation gets entered as a unique event. Frequently, there are documents that are filed by the court, by the attorneys, or by other actors in the ecosystem that are affiliated with particular docket events. We capture the docket entries and documents and we OCR (Optical Character Recognition) them so we can actually parse the words. Then, we take all of that unstructured, verbose data and we build information sets about the parties (companies), about lawyers and law firms, about the patents that are the subject of the dispute, or about judges and districts, and then identify specific case outcomes.

Now I am going to pull up our platform and cruise around in it. I should have said up front this is an academic symposium, so I am not here to do an infomercial for us—well, I guess I am, but it is

really intended to give you an illustration of what so many others have been talking about.

Why do law firms and companies use our product? They want to increase the value that their IP represents. They want to increase the income it generates while simultaneously decreasing risk around that IP and decrease expense involved with it, typically legal expense. In essence, they want to move the needle a point or two.

Here is a perfect example about how data informs the practice of law. I was going in to meet with the general counsel of a big technology company and he said, “Well since you are coming in, I use the same firm and these three guys all the time. How good are they?” I said, “Well, why do you use them?” He said “Because I used them in the past, so I use them next time.” We looked into it and, in fact, his lead guy had a one in five record. It is not quite as simple as baseball, because good lawyers take hard cases, which are harder to win, and all that stuff. But long story short, if these three lawyers from that one law firm knew that I went in and revealed this information to their core anchor client, they would not be happy. But it is just data.

Here is another great example. An in-house attorney for a big technology company came to us recently and said, “I am sick of paying big law prices. I want you to mine your data and I want you to find me fifty boutique law firms that have never been adverse to my company, that have already handled cases involving the kinds of technology that we have, and that are spread around the country.” So we did. We found them. And the next time that this huge technology company, which every one of you would recognize, gets sued for patent infringement in the Eastern District of North Carolina, instead of using their big Am Law firm up in New York, they are going to cold call some firm in Raleigh and say, “Guess what? It is your lucky day. I am from

corporate. I want you to represent me in a case that is going to generate \$1,000,000 in billings.” That is Moneyball. That changes law.

I also want to point out that even though this is litigation data, it is also applicable to transactions. Rockstar Consortium was formed by a bunch of big tech companies, and together they bought the Nortel patent portfolio for about \$4.5 billion dollars. Rockstar exists to license that portfolio and uses our data all day long to inform its licensing program.

Here is another litigation example. The general counsel of a pharma customer of ours called me up and he said, “We have a bet-the-company case in front of this federal judge in New Jersey.” Patent litigation in the pharma space is called ANDA litigation, which stands for Abbreviated New Drug Application. Basically, the generic company and the brand company fight about what day the generic company can start selling the cheaper generic formula covered by its ANDA. Every day that the big brand company can keep its product out of the hands of the generic can be worth tens of millions of dollars. An extra two years and that can be hundreds of millions of dollars.

So he calls me up and he said, “We have heard anecdotally . . .” We call this anecdotal. “We have heard the anecdotal that this judge will sometimes rule on claim construction without a hearing.” In patent litigation, there is a step at the federal level where the two parties fight out what specific terms mean. If you can get the judge to adopt your meaning and not the other guy’s meaning, it makes it much, much easier to prevail on the merits. So a lot of the ball game is played at the claim construction level. We discovered that, just in his pharma patent cases—not all patent, just pharma—this judge, eighty-two percent of the time, ruled on claim construction without a hearing. The general counsel of this multibillion-dollar company said to me, “Owen, I almost—almost—do not care what

you charge me, because that is so important. Because we now know that we have to put everything we have into the brief and not hold anything back for a hearing that is unlikely to happen.” And that seemingly off-in-the-weeds little bit of strategy and tactics could make the difference between winning and losing a case with almost \$1 billion at stake. That is legal analytics. That is what I am so excited about. That is why I get to say I am an evangelist for this stuff—because I think, especially for the law students here, if you get out in front of this stuff, you bring to your career the ability to think like a Moneyball lawyer, and you are going to be way out in front of people my age and older who are dinosaurs. Sometimes dinosaurs die out.

With that, I want to stop and open it up for questions to the three of us. I appreciate you listening to my piece of this. Thanks.

Male Voice: I have many questions. You are promoting the important outcomes and the great strength of your data. But it seems like you are getting that from the docket sheets. I have personally read thousands of docket sheets and I noticed the language was complicated.

Mr. Byrd: No, we are coding those outcomes ourselves; there is no field in the PACER data—

Male Voice: Right. I have coded them myself by reading the docket entries, and there is genuine uncertainty about the actual outcome of the case—whether it was a settlement or a loss. I read one article that said the following twenty-three outcomes for docket sheets have to be intelligently coded, and still there is going to be uncertainty as to the nature of the settlement.

Mr. Byrd: How many did you have?

Male Voice: It was a page long in an article.

- Mr. Byrd: Well you see, here I am not going to waste time counting them up in front of everybody, but we have got about fifteen different outcomes.
- Male Voice: But the important cases settled, and that is what matters. You rarely go to trial. There must be some statistical uncertainty in your coding of outcomes, and whether the product delivered to the client reflects that is something to think about.
- Mr. Byrd: Sure, the Eastern District of Texas is perceived to be a pro-plaintiff rocket docket for patent litigation. Surprisingly, for cases that go all the way to trial—and most of them do not—it turns out that claimants and claim defendants prevail at almost exactly the same rate, which is three percent each. Do most of the cases settle? Yes. If there is a perception and a reality that it is a pro-plaintiff rocket docket district, do those settlements tend to favor plaintiffs because they have more leverage? Yes. But this data challenges the traditional orthodoxy that presumes that the Eastern District is pro-plaintiff. If I was a defendant in the Eastern District looking at this data, I would be more inclined to up my spend and go all the way through trial, where I have got a 50/50 chance of prevailing in spite of the perceptions.
- Male Voice: Let us say you are partly an academic researcher. It seems to be one thing for an academic to use your tool, while the interest to law firm clients of checking your outcome analytics, versus what a traditional research project would yield, is different.
- Mr. Byrd: The reason we do not do that is, in part, the distinction that I made earlier between legal research and legal analytics. Legal research is top-down. You are looking for precedent—rules, statutes and opinions. We do not cover appellate law on purpose, because we do not care what the appellate outcomes are. We are not doing top-down legal research and legal reasoning—we are

doing bottom-up mining of the riverbed in order to find those nuggets of gold that can be extracted out of tons and tons of gravel. It is a completely different way of thinking about law—it is not an either or. You need to be a top-down lawyer. You need to do the research and reasoning. But now, with bottom-up, Moneyball data mining, you are able to supplement research and reasoning and perhaps move the needle a little bit with what you discover.

Male Voice: You say this judge rules this way this percent of the time. I think it would help your marketing to academics and lawyers if you said, “And if you had just read his opinions—which is what the rest of you were doing without our product—you would have seen that he ruled this percent of the times.” So to compare what traditional legal research shows you about the proclivities of this judge through traditional tools of reading the opinions and compare what your product shows about this judge—

Mr. Byrd: [Interposing] I think we are going to have to leave that one to you, because we do not provide a lot of editorial content. We leave it to people to come to their own conclusions about—

Male Voice: [Interposing] I will do it if you will give me your answers for the same judge.

Mr. Byrd: Yes, sir.

Male Voice: You have the size of damages awards. Do you have any insight into settlements?

Mr. Byrd: No. They are privileged, as you know.

Male Voice: I was wondering if, in order to expand this product to things such as damages or fees, will you have to mine data outside of PACER? And if so, where are you looking to get this information?

Mr. Byrd: That is exactly right. One place you can sometimes get information for public companies, stuff that is not available on PACER, is in SEC filings when it is material. But we have only got twenty people; we are barely sleeping as it is, so it will be a while before we do that. We do have complete damages information.

You can use our product to see what law firms and lawyers represented what party. You see the specific outcomes, the findings, who won, who lost, and what you were asking about down here is the damages, right? Here is a \$200,000,000 royalty damages award against Microsoft. And we have all of those aggregated as well.

Male Voice: This question actually relates to the side effects of the litigation. Once you have an ANDA case, you have a result, and if it is anything other than an outright win, you very likely will see, sometime down the road, follow-on antitrust litigation. Are you able to track that? And specifically, I am thinking at the stage in which the non-win was finalized? In other words, if they lost a summary judgment and then settled, or if they lost a claim construction and then settled, what is the likelihood of follow-on litigation or other side effects occurring?

Mr. Byrd: Part of what you are describing is a new trend in pharma litigation that is called “pay for delay.” So if I am the brand manufacturer, I make a pill, and generic company X wants to make the generic. Instead of them suing us, we are going to cut a deal and we are going to pay them some, and that will postpone their ability to make a generic for another year or two, so we can still collect most of the money. The FTC is very concerned that this is anti-competitive behavior, looking at it through an antitrust lens. Totally by luck, we happened to cover both antitrust and patent. So we do have both generic and brand pharma companies that are mining our data right now to look at that intersection. So, yes.

- Dr. Silverstein: If I was a judge that would creep me out. I do not want to embarrass myself, but is it Eisenberg's theory that if you look at something, then it changes the behavior?
- Mr. Byrd: Yes.
- Dr. Silverstein: So if I am a judge, if I can look this up, would that not maybe change my behavior?
- Mr. Byrd: No, because not enough judges yet know this stuff is here. Every judge we know has asked me the same two questions: "What's my data?" and "What's my colleague's data? I want to see how we stack up."
- In addition to the district courts, we also cover the ITC because it is important in the patent realm, and there, they have ALJs, administrative law judges, because it is an administrative practice. I was sitting at an event with Judge Bullock back in June and we got to talking and he asked, "Could I see my data?" I said sure. He did not have the slightest idea that he had ninety-three investigations, or cases, under his belt. And more importantly, he had no idea that he had only ordered a general exclusion order nine times.
- Female Voice: Since we are in an academic setting here, my professional call might be different, but if you hear, "Oh my gosh, this all looks so easy," it is like, ok, we can turn off the—
- Mr. Byrd: [Interposing] Yes, but the difference is that order is all subjective. "I really do not like this pizza place. The pizza is always stinky." Well, that is different from parsing data. Verbose data in PACER leads us to see that thirty-seven percent of the time, such and such happens.
- Male Voice: This is all absolutely public information. If I had the time, I could go to every one of these docket sheets myself and do exactly the same analysis.

They just made completely public information available more efficiently. And better than that, when the Administrative Office of United States Courts reports the outcome of every case, the judge is in it. Before it makes it public, it strips out the judge's name because of exactly your concern—the judges freak out. But it is public information and what happens now is only the clients who can afford it can get this information.

Mr. Byrd: And we charge them a lot.

Male Voice: The poor slob who is just an individual litigator comes to court at a complete disadvantage.

Mr. Byrd: Look at this: for the first time ever, we have uncovered the client lists for lawyers and law firms, which is usually a showstopper when I am showing this to a bunch of law firm attorneys. But as corporate counsel know, you tell them no conflicts, I would be happy to represent you, but I also represent him. I do not want you to represent me if you represent him. Again, it is just more data.

Male Voice: That can also be effective, I think, with judges and their attorneys who are appearing in front of each other and who are related to the other judge. So for example, you have Judge Ward and his son, John Ward, and Judge Davis and his sons, and they would appear in front of the other judge and make their grandchildren very wealthy. It would be interesting to see if you could uncover that information.

Mr. Byrd: A related point—and this is not our company's position, this is just me spouting off—is that I think that this data is going to disrupt the ecosystem of local counsel. Local rules typically require that a party from outside the district associate with local counsel.

You have to have local Delaware counsel. Now, I do not think the local rules are going to change any

time soon to remove that requirement because it is a guild kind of thing, which works for folks. But a lot of what you can now find out through the data is the inside information that local counsel was always expected to provide to the team because that local counsel is playing golf with the judge on Fridays. Now we know more about that judge than his golf buddy does. So it is going to require local firms, like here in Raleigh, to develop additional capacities, both around pricing and performance, to compete for a greater slice of the pie on a particular matter.

Professor Essary: Since the time is almost over, I have one question for Larry. When do you think it will be normal for basically every 3L who is here in the room to walk out skilled at project management process improvement? When do you think that will occur?

Professor Bridgesmith: I do not have the data to support a prediction, but it is beginning to occur. We are starting at Vanderbilt and we will be teaching the first legal project management course to law students next term. There are other schools around the globe that are teaching project management and e-discovery. It is not the norm by any means, but I think it is beginning because the whole legal ecosphere is in such a disruption, both at the law school level and at the practice level. Something has to change. Those changes are being demanded and law students are beginning to understand they need to have these skills to be more marketable. This demand is changing the receptivity of these kinds of skills. I think it is happening, but it is not happening fast enough.

Professor Essary: It is 2013 now. By 2018 or 2020 is this going to be normal or not?

Professor Bridgesmith: I think by 2020, it will be much more normal. It will probably be required at every law school.

Professor Essary: One last question for all of you. Let us say that I am an English major or other liberal arts major in

college, and I hear all these messages. What am I going to do? I do not want to embrace math and statistics. What are we doing to do then? We have so many students here. What should they do? Not everybody likes math.

Professor Zorn: I have a thought about that, being from an analytics company. There is a difference between learning how to tell time and how to build a clock. You do not have to embrace math and statistics. You do not have to be a programmer to understand and value analytics, how to use analytics, or how to understand the outcomes. So it is more of a question of becoming familiar with tools like this, tools used by IBM, Microsoft and Google, and being open to understanding the traditional information, knowledge and insights. If you just did that, you would be ahead of ninety-five percent of the people out here.

I speak to law students all the time about understanding how analytics are applied in the real world, and they need to understand how to use analytics in their own career.

Professor Eisenberg: Or to put it more positively, if you are the ones that understand it best and earliest, you are going to have an advantage.

Male Voice: Yes, I think that empirical legal, math, statistics—I think that is part of the story and what those proselytizing about empirical legal studies want everyone to think, but empirical really is just part observation. I find my English major students sometimes outpace the math major students simply because they know how to make an argument. If you can make an argument, this makes sense. But if all you are worried about is the data, then you cannot convince anyone. So I do not think it is a problem whether or not they know how to run a specific program.

Male Voice: We tend to choose one or the other to be our specialty. If we can understand how they both are

strategic choices and then bring the right one to bear on the problem, we can more easily reach a solution.

Professor Essary: Chris, do you want to respond?

Professor Zorn: I was just thinking that one of the ironies of this is that there are people out there, like Larry Richards, who are actually proselytizing for getting in touch with the right side of your brain, but they approach it from a very analytical way. It is like, “Here are nine really good, evidence-based reasons why you should get in touch with your emotional self.” It is kind of an odd way of presenting it.

I will be the first to admit—math was never easy for me. When I say that in a public forum around people who know me, they are usually shocked by that. But one of the advantages that I think it brings is because it is not natural for me. I find it is easier to teach it to other people for whom it is also not natural. When you are hardwired to do something, oftentimes you do not understand why everyone is not hardwired that way. I often encourage people who come from a background in the humanities or history or something like that to do it, not necessarily because they are good at it, but maybe because in fact they are not good at it. To the extent that they become good at it, it is going to allow them to relate to other people who also are not as proficient.

Mr. Byrd: Silvia, I want to end on one last thought. Legal analytics is just asking you to be a more rigorous lawyer; it is not asking you to be a mathematician. It is merely saying that every time there is an assertion, you should say, “Well, where are the facts?” Lawyers who claim to be so fact and evidence-based actually spend most of the day, all of the time, spouting off about stuff that they cannot back up with facts. This helps you back it up with facts.

Professor Essary: Thank you all very much.

## Practitioner Panel

Professor Essary: John, if you will begin, tell us a little bit about yourself and what you do.

Mr. John O'Tuel: Sure, I would be happy to. Thank you again for the opportunity to speak today. It is certainly an honor to be on this specific panel. I know many of you in the audience are law students and you may soon graduate and start a career of your own. You may be moving into civil litigation or into commercial litigation. You may be negotiating contracts; you may be litigating the deals that go bad. You may do mass torts; you may do slip and falls. You may do a variety of things. But some of you may become in-house counsel and you will do all of those things. That is why I say that becoming an in-house counsel is a way to become, basically, a general practitioner, but still retain some of the benefits of having law firm resources behind you.

That is both the benefit and opportunity, but it is also a detriment because you have to do the general practicing and utilize law firm resources. The reason I tell you all of that is that I think we can offer a unique perspective on technology and its uses, both as consumers and users of certain technology in law practice. Also, we can provide the insight into how businesses and companies are actually using technology to drive business and the benefits that use provides to us, as well as the difficulties it provides to us.

Let me tell you, very briefly, a little bit about my background. I practiced here locally at Womble Carlyle. I did product liability and commercial litigation, then moved to GSK and have been able to do pretty much everything, but largely product liability, simple commercial litigation, and more complex types of commercial litigation, such as insurance cases.

You will find that for in-house counsel, our full-time does not add up to 100 percent because it is really more than that. One of my many primary roles is to deal with e-discovery issues. I do not know if you have a class here at Campbell on e-discovery—hopefully you do—but what we deal with on the inside is basically everything in the EER: preservation, collection, review and production, and technology affects all of it.

I also deal with civil rules reform efforts. You may be aware that there is a big effort going on right now to reform the federal rules to deal with the excesses of discovery and the way that technology has impacted litigation. So really, the areas of my practice that are significantly affected by technology include e-discovery and the use of technology in preparing for a case. A lot of the things we just saw look very interesting and can help to prepare for a case. For instance, utilizing social media that may be provided by the employer. For all of these types of things and for jury exercises, we use data analytics to try to gain the best advantage that we can in our litigation.

Finally, something that you saw in Silvia's presentation, we actually use a great deal of technology in selecting our vendors, and specifically, law firms. We joined with procurement to set up an online auction model to make discoveries and have a discussion to select our vendors and their law firms.

A couple of final things before I pass off. In the past, when I was young enough to be part of the young lawyer's division of the ABA or DRI, I would be asked to present on what in-house counsel can do and what your outside counsel should know at an early age. One of the most important things, and one of the most simple and common sense things, was to know your client. Understand your client, your business, your challenges, your environment, and understand your goals and their philosophy for dealing with those

challenges. I think that is particularly applicable in the area of technology, and it is great that you get to have this opportunity today to listen to what is out there because in-house counsel needs to have more knowledge about what technological options are available. As you just heard, the young associate who can speak the language, who can actually come to the new client and speak intelligently about what is out there, what the risks are and what benefits can be realized, is going to be well ahead of his peers. Again, thanks for the opportunity.

Mr. Rob Tiller:

I very much agree with what John said about taking the opportunities we have today to learn about technology and leverage on those to be successful in law practice. That is what I am trying to do as well. I am Vice President and Assistant General Counsel at Red Hat, which is a technology company, and in fact we are a world leader in open source software for head-of-class customers. We are in thirty-eight countries, we have a listing on the New York Stock Exchange, on the S&P 500, and you would hope that I would also be able to talk to you about state-of-the-art legal technology. But we are somewhat in the position of the cobbler's children who have a dad who is making incredible shoes but never gets the best shoes for themselves because you have to sell those shoes. At the same time, we are very conscious of the fact that technology is changing the legal world. It is great today to be able to hear about some of what other people are doing and what is developing in terms of practicing along with new technology.

I thought it would be really wonderful to tell you about how I, as a twenty-five-year lawyer, have seen enormous changes in technology and that I remember the days without computers and things like that, but then I realized: Who really cares? This is not the thing that is going to help you. What is really important is what is about to happen next, and that is what I would like to focus on.

I want to share one little bit of perspective in terms of how things are changing and how the pace of change is accelerating. Back in 1995, there was a platform, Windows 95, which was a grand departure for the law firms, which were mostly in the service of Microsoft and using those products. Our law firm decided we had to adopt this, and it was going to be a big deal. We planned two days of training for all our lawyers, three days for everybody else, and you knew it was going to be a complete sea change and that we were going to spend many lawyer hours getting on top of this thing. So we brought in Windows 95.

Fast-forward to 2008 when I started at Red Hat and underwent the initial training, in terms of learning about the official technology we had to know about, like how to sign on to the system. There came a moment when we were going to learn about word processing. Word processing instruction consisted of this: “This is your word processor.” That was all the instruction we received, and we needed to figure out the rest of it. That is pretty much where things are today. We have new technologies coming at us on a monthly, or maybe weekly or daily basis, that we have to get on top of. The reality is that we are all students; we have to be learning constantly to stay reasonably competent in our jobs.

You could look at that as a tremendous burden, but I think it is also tremendously exciting and I am very pleased that you organized this symposium today for us to have a chance to talk more about it. I look forward to hearing your questions.

Mr. John Boswell:

Hi everybody, I am John Boswell. I work with SAS. SAS is a purveyor of analytics, but we do not use a lot of the traditional analytics or how you think about analytics in a law practice. But I was really intrigued by the last panel. And we plan to start using these technologies soon.

Let me tell you how we are using technology, because what I said a minute ago in making the comment with the last panel is really true: if you will embrace technology—and it does not have to be cutting-edge technology; just technology that everybody else is already using—you will be well ahead of your peers in the legal profession because the legal profession is run by old, stodgy white guys who are hard-pressed to move things along.

At SAS, we have lawyers in fifty-two countries around the world. When our lawyers in Singapore, Malaysia and Beijing are at work, the corporate office is asleep. But they still need to be able to access the answers to the questions that we can glean here in Cary just by walking down the hall. So it became clear that the only way for us to be able to provide the level of service that I expect everybody in the world to be able to provide to their clients—and our clients are the salespeople, the professional services people, the country managers all over the world—is to allow our internal employees at SAS access to the same knowledge and the same information as everyone else.

When I first became general counsel, everybody had a drawer where they had the language that they liked to use for a particular agreement and their alternatives. I required all of that information to be taken out of the drawers. Nobody is allowed to keep that stuff. They probably still do, because I do not check behind them, but they are not supposed to. They are supposed to put it in what is called a legal toolbox. We have a very robust, searchable technology that contains every document that any lawyer in the world would need, every explanation of every clause in every document, every alternative language that is approved, and what the approval process is. The approval process basically goes like this.

If the customer does not accept a particular provision, you can offer this provision and you can

offer this provision. If the customer wants to negotiate this point, you can go up to a certain amount before you have to get approval. And if you have to get approval, you have to get it from a specific person. If the customer will not agree to that, then you escalate to that person. I want every lawyer in my company to be able to provide frontline support, to sound like they know what they are talking about, and to be able to respond timely to their clients and to our customers. I want this so that we are never in a situation where our client comes to a lawyer who needs an answer from the home office, but it is midnight in Cary, so he has to wait until tomorrow. Then, by the time the home office gets the question, the person that asked it is asleep, so it is a two-day turnaround to get an answer. We cannot have that. So what we have done is create a huge knowledge bank of information. All around the world we do pretty much the same thing, so there is not really any question anybody is going to be asking anywhere in the world that we have not already answered. Then, over time, as the lawyers become more seasoned and have been around longer, they just know the answers; they do not have to check in the toolbox. But there is always turnover.

That is just one of the ways that we use technology. You are all going, “Duh, of course,” right? You would be surprised how many companies that have local legal departments do not have that, and how many law firms that have lawyers spread all around the world and the country do not have that. It is pretty simple, but it seems to be cutting-edge technology when I talk to other lawyers at other companies.

The other way that we use technology—and again, this is something where you guys will go, “Duh”—is through video technology. It costs a lot of money to get on an airplane. It takes a lot of time, and you have to fly overnight if you want to go to London. If you just want to have a conversation with somebody, you can send an e-mail and you

are probably not going to communicate well. You can talk on the phone, and you cannot see what they are really thinking. You do not know if they are rolling their eyes or whether they have got their hand over their head when they are talking to you. But if you can look somebody in the eye, you can have better communication.

I do not hire any lawyer in the world unless I have met with them. But I do not go to Malaysia, Singapore, Dubai or wherever—we use video technology. It requires me to maybe come in earlier or stay later, and requires them to do the same, but we put them through a negotiation and an interview just as I would as if I was sitting face-to-face with them because the technology now is so good.

How many people have used FaceTime on an iPhone? My son is studying in Istanbul, Turkey, and we will sit there talking to each other, and he will actually talk to me on FaceTime. But it is like you are talking to somebody who is sitting in the same room. It is amazing. So that is another way that we can use technology as a global company to really move things along and get better results and better answers.

It is not perfect, because the world is twenty-four hours and a lot of the time you cannot do it with clients and other stuff like that. But those are a couple ways that we use technology. The stuff that these guys were talking about before is where the world is moving. We are pushing the law firms that we work with—although it has not been as quick as it is going to be—to do alternative billing arrangements and to become more effective and more efficient.

We actually started putting our matters out for bid and I am really interested in using some of this technology so we can actually analyze it. What happens is that a lot of firms will tell you, “this guy from this prestigious law firm, he has handled

all those matters,” but we do not really know if he is any good. We do not know if he loses all the time. It is interesting to know if these guys actually win their cases, so I would be interested in finding ways to use this technology. That is what I have to say.

Professor Essary: I think that you see what a treasure trove of information we have among our three panelists for the day. What I would like to start with is something even simpler than what you have each described in your respective corporations, and that is this: What is the percentage division between in-house attorneys and outside counsel that you use on the matters mentioned before?

Mr. O’Tuel: Litigation prep work is different for every company, unfortunately, which is part of the complexity with clients, which I probably should have mentioned before. As a pharmaceutical manufacturer, we have a significant litigation profile. It is hard for me to break down how much division there is between in-house counsel versus outside counsel. Certainly, we have utilized outside counsel for every case that is filed against us, from a litigation perspective. But we have a sizable in-house legal department that handles all of the tasks internally. Within my group, which is litigation, we manage the outside counsel, manage the processes, manage the discovery process and so on. Outside of litigation, outside counsel are very important in terms of giving advice on regulatory requirements, on what can be promoted, how it can be promoted and how to make sure that we are complying with FDA requirements for labor and so on. It is also important for those attorneys who are negotiating contracts or who are dealing with our supply chain.

You might think of our legal department as developing probably about 500 attorneys worldwide in our global economy. But outside counsel is certainly in the thousands, as far as the

number of attorneys who are working with our business.

Professor Essary: That is helpful as a beginning point. Rob?

Mr. Tiller: The number of attorneys working for Red Hat is around forty. The use of outside counsel varies widely according to the type of challenge we have. I am in charge of intellectual property and a lot of my work has to do with litigation, especially patent litigation. Just as with John, we are not going to try a patent case ourselves; we would hire leading counsel to do that. In effect, our job is to find the right counsel, supervise them, make sure they understand the business, and make sure they do not go off the tracks.

I consider that a pretty important job, but it is one that we are constantly asking, “How we can do better?” Listening to Owen’s presentation was fascinating in terms of trying to figure out who is the best counsel to exercise and that is something that we spend a lot of energy on. If it is a case that we expect to cost us hundreds of thousands of dollars in legal fees, and potentially millions of dollars should things not go well, we are looking for the stars in the field. We look at various lists that are compiled and try to get data from all sources, but it is not automated today. We met by telephone just a few days back to talk about possibly getting someone to look at this more closely.

But I will say, just in terms of general procedures, there are a lot of things, just as John Boswell has described, that we have developed protocols for in terms of contract negotiation. Those are handled largely inside. If we have a new departure in terms of contacting principles, we will consult with outside counsel for those big departures.

Professor Essary: Thank you. John?

Mr. Boswell: We have ninety-six lawyers worldwide, and I would say we do probably ninety percent of our legal work internally. What we do not do solely internally is mergers and acquisitions. We will hire a law firm to help us because there is a lot of work that needs to be done in a short period of time, so we need to ramp up. You do not build your roads for Thanksgiving Day traffic, because the rest of the year they would be sitting around with not many cars on them. We have to staff according to what the day-to-day operational needs are, and then when we have things like that, we hire lawyers. We do not hire a whole lot of outside lawyers, but where we have seen a real trend is patent litigation.

About ten years ago, we would probably never get sued. Five years ago, we would have been sued maybe once. Now, we are sued all the time by patent trolls in the Eastern District of Texas. It is a real negative trend that has caused our use of outside counsel, and our outside counsel spend, to really go through the roof. These things are expensive. That is one of the things that, until recently, we did not have much litigation concerning. We were not being sued by people who were allegedly hurt by drugs or by generics or anything like that, so we did not have a need to really apply these analytics. Litigation was just so sporadic, but now, it has become a big part of our legal department spend and we are really focused on trying to do some of the things that you guys have talked about here. And because we are a company that sells analytical software to industries, we really understand the value of it.

Professor Essary: Owen mentioned that legal analytics is asking us as lawyers, whether we are in-house or outside counsel, to become more rigorous attorneys. I would like your response to that, each of you.

Mr. Boswell: I do not think it is all that provocative, but the slight piece that was left out is that a lot of this data was never available before and you did not

have the tools to make sense of it. Even if the data was available, you could not consume it because it was just hundreds of millions of pages. Now, you can consume it. Until recently, the last three to five years or less, you did not have the ability to consume this stuff. Now you do, and if you do not, you are going to be left behind.

Mr. Tiller:

I agree with that. I do not think it is all that provocative. The only other direction we can possibly go is to try to get better information. We are all in the prediction business and our stock and trade is making good calls and anticipating what comes next in the world—what this judge is going to do or what this competitor is going to do. The way we have traditionally done it is basically intuition, but as the data gets better and we figure out what to do with it, we are going to try to make better decisions, just as in *Moneyball*. So I do not think there is much question that we are going to have to get on top of this and get better at it, as those who do not will get left behind.

Mr. O'Tuel:

It is hard to add too much on to that. Maybe just by way of analogy, in my practice, I have gone from a time of paper collections, dealing with the paper review, where you go to a client and say, "I need the file on x. Hand me that file," and he would hand over a booklet with the file and that was it. Then, we moved into more of an electronic age. E-mail became prevalent, and if you did not ask for e-mails, or ask for them in the proper way, or if you did not understand how to get e-mails or how to utilize them, you were derelict in your duty. You may even be approaching malpractice. As you look through that time scale, we move from paper to e-mails to now text to social media and so on. From a collection perspective and from an analytics perspective, it is the same track. If the tool is out there, whether you like it or not, or want to move to it, if it is out there and provides benefit in your case, you would be derelict in your duties if you did not take advantage of it.

- Professor Essary: Do I hear each of you saying that now, or coming soon, we will all be using analytics? As I heard it, the collection of facts, i.e., data, and analytics being used to discover and communicate many different patterns within that data that leads us to make better predictions?
- Mr. O'Tuel: The short answer is yes. Within my company, we are already doing it. You hear the term "big data" with big analytics and companies already doing that to determine customer preferences, trends, and so on. They are doing it for a reason: it actually provides useful information—or at least it is perceived as providing useful information. All you need is the presentation we just had to see how they can be very helpful for litigation. It has a whole lot of potential uses. So I think the short answer is yes.
- Professor Essary: Those of us who were at lunchtime heard that we do not have many legal protections about things other than social security numbers, driver's licenses, and so forth, so we know that companies are gathering personal information about us. What is the role of the corporation and what are the legal concerns in the collection of that kind of personal data by your consumers?
- Mr. O'Tuel: For us, we are a highly regulated industry and we have, as a pharmaceutical manufacturer and a research and development organization as well, data that is implicated by a number of laws.
- Mr. O'Tuel: We have to worry about our technology and what the vendors are doing as well. In addition to that, being a global company that conducts research and promotional marketing efforts around the globe, we have to worry about the ultimate consequence of litigation around the globe and bringing data in and out of view, as we heard earlier. So I personally, unfortunately, have to worry about all of those, and certainly international data privacy restrictions.

Earlier, we heard that processing is basically anything. It includes just storage. If I had a duty to preserve information and that duty extended to information outside of the United States, just the act of preserving that information extraterritorially could trigger the data privacy. So I have to worry in every case whether I am doing things the right way so that when I get in that rock and a hard place between a judge in the United States asking me for information and European Union protection authorities telling me, “No. It is a crime just for you to actually process this,” I can balance it. For us at least, it is a huge concern and effort to make sure we comply.

Professor Essary: You mentioned that you were involved in civil rules reform efforts. Is anything international implicated within those reform efforts to unify or signal to the European Union to back down a little bit and harmonize with us?

Mr. O’Tuel: Yes, in two ways: direct and indirect. Touching on the indirect first, the rules reform efforts. The most recent proposal came out of a subcommittee of the Advisory Committee on Rules of Civil Procedure in Congress. The proposed changes are basically two big things. One is the scope of discovery and the way it is crafted in Rule 26 to add the concept of proportionality directly into 26(b)(1). Second, in Rule 37, to give more comfort about what constitutes spoliation, or rather what triggers sanctions for spoliation, and spoliation of data, or destruction of evidence.

If you are narrowing the scope of discovery in the United States, you are easing the concerns you have with data that is outside of the United States. It gives you a basis for arguing to a court that the scope of discovery should be construed more narrowly. In addition, I have this concern about international data: should we phase discovery to get those materials most relevant to the case and likely in the United States first? See if it resolves a dispute and then do not get into the issues that deal

with the European Union and EPAs over there. That is the indirect way.

The direct way is, I think, along with particularly those reform efforts, the Sedona Conference. It is a group that puts forth principles of e-discovery and principles on international data privacy issues. It has a group called Working Group 6 whose job is to put forth principles on international data privacy concerns. They work with the Working Groups in the European Union to try to figure out a way to get you out from between that rock and a hard place. They put forth, and I am not going to go through all of it, but basically different tactics that you can use to mitigate the risk from both sides. Whether it is through narrowing the discovery, phasing the discovery, or setting up a protective order that gives you some sort of protection, both from criminal sanctions over in the European Union and attempting to get protection in the United States.

Mr. Tiller: Improving the discovery rules is going to be a constant struggle, particularly in the patent realm. We are hoping to see reform. I know that in the bills now pending before Congress, including the Goodlatte Act, there is a significant change in terms of reallocating burden and narrowing discovery so that it is less of a burden on those who are backed by patent aggressors. We are very much in favor of reform, especially in that area.

Professor Essary: John, given what you have said as the recent proliferation in patent claims against SAS, I would like to hear your thoughts as well.

Mr. Boswell: I have spent a lot of time walking the halls of Congress trying to lobby for patent litigation reform because of that very thing. Just the cost to defend against patent litigation runs into the millions of dollars. We just got a summary judgment and an affirmance in federal court in a patent case that was brought against us in the Eastern District of Texas, and so far we have spent

\$8,000,000 defending ourselves. Boy, that is a Pyrrhic victory right there. The patent was found invalid on its face. Great. We have \$8,000,000 less. It was very distracting, we spent a lot of executive time, and it was awful. But that did not keep the next patent troll from suing us, which happened just about a month ago.

Professor Essary: You are all subject to federal document retention rules I take it?

Mr. Boswell: With electronic discovery, it is very much up to the judge as to how much he is going to make you produce. The way that most major corporations—and everybody else now—communicate with proliferation of e-mail and text messaging, is electronic. And because data is backed up and then backed up again, there are just hundreds of millions of documents you have to search through, if the judge makes you, to find one or two documents that the plaintiff might think is relevant.

Professor Essary: How do you search through that type of information so as to respond accurately to a request for production of documents?

Mr. Tiller: In practice, what we have done recently is basically a keyword search engine. The parties agree on certain terms that are relevant and likely to yield what could be the evidence in the case. We run the e-mail. Then we have crews of lawyers, oftentimes contract attorneys, go through what turns up to make sure there is nothing privileged and there is not something that otherwise is confusing, so that in effect, the back part of litigation may be more expensive. Presumably, somebody on the other side eventually has to read them.

Professor Essary: I heard a moment ago from our prior speakers that, possibly by 2020, computers can think like the human mind. Are we at the point where that is important, or are you saying that software is

already taking the place of searching through documents and that we are able to use technology to search?

Mr. Tiller:

Great question, and I do think that Ray Kurzweil is kind of a visionary. What we need is computers that think like humans. Human minds are flawed in a lot of ways that our computers will not be in terms of doing analysis. When we saw Watson win jeopardy, it was not because it was smart as a human is. It simply had the ability to process better, and so what we are going to be looking for in terms of our artificial intelligence is the ability to cut to the chase, to not use the traditional tools that we use in our human information processing, and to not be as distracted by emotion, but look at the numbers. I think that is really what we are talking about, in terms of analytics.

Mr. O'Tuel:

Just to add onto that, what we are really talking about here is something called TAR, Technology Assisted Review, which may not be entirely synonymous with the idea of predictive coding. It is the idea that the computer can be taught via a seed set to go throughout a much larger set of information and documents and pull out those documents that are responsive to specific requests.

Up until maybe last year or so, there was a pretty profound debate about whether or not that was even allowed under the law—that is, whether a company could do that. That debate has almost been turned on its head. There was a case in southern New York last year about Judge Peck out of the Southern District of New York, who allowed predictive coding to be used. But there have been arguments that the other side can force a producing party to use predictive coding under the idea that it is less burdensome and you can have more transparency between the parties. As you can imagine, there was a big debate about that. Producing parties want to have the ability to use it, but they want the choice to use it how they wish to use it.

To tie this into the last few questions regarding the idea of preservation and what the federal rules require, the law says, as you learned in the e-discovery course, that preservation is the obligation to retain evidence and make sure to not destroy anything potentially relevant to the litigation. That ties together with the scope of discovery, which will result in potential sanctions if you do not preserve data properly. Many cases are out there with pretty significant sanctions—monetary, career-ending sanctions for particular lawyers. Many of us in-house are somewhat conservative and tend to over-preserve. I have to sometimes be purposefully vague about what I say about my own company, but this number has been out there. We actually have one particular category of electronic information with 203 terabytes preserved. To give you an idea of how big that is, ten terabytes is basically the equivalent to the print collection of the Library of Congress.

So everything in the Library of Congress is somewhere around ten terabytes. Now think that we have 203 terabytes preserved. What do you do with all that? You cannot put eyes on all of that in a particular litigation. So the idea of predictive coding and technology assisted review, or allowing the computer to help out in that task is, unfortunately, necessary.

Mr. Tiller:

Just to follow up a little bit on the prevention of spoliation point, we also are hugely concerned with potential sanctions for accidentally destroying documents. It is very serious. And because there are so many documents, it is all too easy for it to happen. So we are very conscious about the procedures, and we are putting in place document holds once we first hear about the possibility of litigation. We are looking to automate the process more. We have our own cobbled-together spreadsheet system now where we list if there is anything about the case and what the issues are. But there are new data management tools that we

are looking at that we hope will make that simpler and minimize even further the possibility of any mistake.

Professor Essary: Let us shift gears a little bit. Some of you have talked about how you are using technology internally, but I would like for you to comment on how your businesses, and that can include your outside counsel. Is the use of analytics business-specific?

Mr. Boswell: I can talk to you briefly about how we enable our customers to use analytics, but that is really what we do. One of the things that the Lex Machina people are doing is analyzing a couple of set databases to figure out information that is fairly regimented. Although it is unstructured data, it is in various places in the state and federal courts.

We have customers who are interested in analyzing social media. What are people talking about on Twitter, Facebook, LinkedIn and in chat rooms? It is this natural language processing. I will give you an example. You remember years and years ago when Toyota had a problem with the accelerator? Well, people started talking about it on social networks—“Wow, this crazy thing happened with my car”—and it was in the warranty databases of the dealerships and stuff like that. This cost Toyota a huge amount of money because there was reputational damage—I think there might have been a recall—but as it turned out, the defect did not exist at all, or it was easily fixed. But it was a huge, huge problem for Toyota that it did not know about until it was too late because it was not monitoring or did not have any ability to monitor what was being said about it and its cars on social media.

We and other companies give companies the ability to monitor what is being said about them and analyze that to predict what is going to happen. What does that mean? In the field of law, let us assume you are defending a case against a

corporation. It would be really interesting to know what the community is saying. Now, communication is peer-to-peer, but it is also peer-to-many. In chat rooms, on Facebook and on Twitter you can license these data feeds. Everything you say to your friend on Facebook goes through the Facebook server. You probably did not know this, but you gave permission to Facebook to share that information with anybody who wants to pay them to get it. Companies mine and use other technologies that basically enable them to watch this traffic go by and start to analyze who is talking about what.

I believe that in the future, in addition to analyzing what a particular judge thinks about these particular issues, we will also want to know what the community thinks about these issues. What are the technologies out there to do it? It will only become better, cheaper, faster and more commonplace. But if you do not know it exists, you do not know to look or to think about it. That is an example of something my company allows companies to do that will, in the future, be applied in the legal world.

- Professor Essary: I am actually thinking, as a tort lawyer right now, that in proving reputational harm in a case where I have been libeled or slandered, I would want to use your company's software to show the damage. Rob?
- Mr. Tiller: In terms of what we provide, the infrastructure is the most important. It is the foundation that makes other things possible.
- Mr. Boswell: Our software runs on Red Hat Linux.
- Mr. Tiller: Figuring out what those people are doing is important. There are people who work at banks and stock exchanges and everything you can imagine on our software. But there are also people who are building an application, and I think that is worth pausing on.

We are particularly conscious of this as an open source company. What that means, in effect, is that we are taking open source software from people who are creating it either out of their own personal passion or that who work for somebody else who wants to see it produced and made generally available, and typically, at no cost, we are incorporating it into our products. There is not just one such thing; there are literally thousands and thousands of them incorporated into our Red Hat Linux. So understanding what those various open source projects are doing is itself a huge project. We are always trying to get a better way to get a handle on it.

We are seeing expansion of more and more projects, and more and more parts of the software that make other things possible. We find that even in our legal department this has affected the way we are thinking. We see a problem, such as not knowing enough about what our producers of open source software are doing. What can we do? We try to figure out an application for that. Because it is software that is already available, there are tools that we can incorporate, even as relatively un-technical people. I do not think we are the only ones thinking that way about technology, asking what is there, what can we do with what is there, can we get it to work a little better and then have a better functioning business and perhaps be more competitive. It is something we are going to continue to do, and other people, too.

Professor Essary: Did I hear you say a little bit of reverse engineering going on with what you are doing?

Mr. Tiller: No, that is not so much the issue. At least with open source software, those who are licensing their software under an open source license are, in effect, inviting you to use the product. They give you the source code and you can modify it, as long as you are consistently complying with the open source license.

- Mr. O'Tuel: It is a spectrum, so when you think of companies like mine, those that ultimately serve consumers, the analytics that we are talking about are extremely valuable. They help to identify trends, likes and dislikes, what works well, and what people want. That is extremely important for the business side. Then from the legal side, utilizing those same analytics to try to determine and to analyze, in bold fashion, each use within litigation and learn more about the plaintiff on the other side. We will know about the context, we will know about things they have said and done that may be antithetical to the case. I think the spectrum is a little more on the consumer side.
- Professor Essary: When you are choosing outside counsel, do you look, in terms of trying to determine their efficiencies, at their own uses of technology?
- Mr. Tiller: I do not know that we have found a measurement for that, but we certainly are conscious about the need to be sophisticated and knowledgeable about the tools that are available. We are tracking very carefully what they do with tools like TyMetrix. What were they spending time on? Does this make sense? We do more and more comparisons to try to figure out if they are as efficient as they ought to be.
- We used to just look at the rates of attorneys and thought that was a good indicator of who was going to be most cost-effective, but what we found is, in fact, sometimes the highest charging attorneys are all ultimately the most economical as well because they use their time wisely.
- Professor Essary: Picking up on the theme of using the data, I guess TyMetrix that was up here, could you explain how that is used?
- Mr. O'Tuel: It is very useful. What is going into all of this? These are the metrics that we use to determine how efficiently our law firms are working. We can

determine if too much time is being spent on a different phase of the matter, whether it is discovery, dispositive motions, and so on, and who is doing what. Are lower rate associates being used appropriately in certain phases, or is the work going to higher rate partners at the right spots? Backing up to what I said at the beginning, we are in a unique position because we have moved not only to almost 100% alternative billing arrangements with the firms, but we have, beginning right around the time of the crash—2000 to 2009—moved one or two steps beyond that, and we actually utilized an online sourcing event to ultimately provide some input into making decisions about our firms. What goes into that is a lot of the metrics that we just discussed.

The way this process works is we will send out a request for information (RFI) to the firms that we think are most appropriate for initiation of the action and ask them to respond to it. We are able to pool together the responses, along with metrics from past cases, such as how they performed or how they were billed, as well as other helpful information about those firms. All of that goes into a tool that allows us to view it in an efficient manner. We are able to narrow it down to the top three or top five firms that come out of that, and then they get into the online sourcing room, which allows them to bid the project or bid the case. Whether it is by phases, by the entirety of the case, or on a yearly basis varies depending on the litigation. They then get to bid against each other competitively. It is not always the lowest bid that wins because it is balanced by the judgment of the attorney when we came out of the RFI process. All of that together, all of that data is what goes into, ultimately, our vendor selection.

Professor Essary: Is that unique to multinational corporations as big as yours? Do you think that smaller businesses with in-house counsel would use that system?

Mr. O'Tuel: So far as I know, it is actually unique, period. It is just us so far. We have certainly had a lot of inquiries about how it has worked. I think others have dipped their toes in a bit to try to work with procurement and get procurement to work with the online reverse auction process that drives the costs down. I think others are looking at that. It certainly is something where, if you look at the efficiencies of it, it makes more sense if you have a litigation profile where you are sued on a repetitive basis for whatever reason, you are working with a lot of different firms, and you really need to drive that cost down.

There are principles of it, I think, that can be used even for small and medium-sized companies, because again, once you have it up and running, it is a capital cost to leave it up and running. It runs and you are able to reduce the cost across not just law firms, but any vendors that you utilize. Most companies, if they have a large procurement department, already have something like that in place. They are already using something like that whether it is online or manual.

Professor Essary: You talked about alternative billing arrangements. Are you talking about flat fees when you use that term?

Mr. O'Tuel: It can take a number of different forms such as a fixed fee with potentially a collar around it. So you may say, "Give us a bid for the life of this litigation. What is it going to cost your firm to deal with this?" The firms would then come back with a number. That is a very simple way of looking at the application of it. Then you may say you want your shadow bills; you want to see what they are actually billing because they are keeping that anyway and we are going to compare that from time to time to see if they are really doing what is reported. If so, it can look like a contingency fee. It can take a number of different types of alternative billing arrangements, but what

it really means is something other than an algorithm.

Professor Essary: So those firms are still keeping their hours for obvious internal uses, but are they keeping their hours for you as well? Does that feed into your analysis of your work on that matter?

Mr. O'Tuel: It certainly does. That is what we refer to as a shadow bill. They are keeping it already and providing it to us as well. We are then able to look for reconciliation purposes to make sure that nobody is hurt by the arrangement one way or the other. Also, over time, we get to collect these metrics to determine who is the most efficient, who was spending the proper amount of time, and to make sure we did not actually force the bid too low. If we force the bid too low, we may have a situation where either we are in constant negotiations with the firm for change order type negotiations, or are we seeing more and more of the lower-ranked associate, a lower-level associate than we expected, because they are trying to mitigate their internal costs.

Professor Essary: Any questions?

Male Voice: The legal process is a human process in a lot of ways, and it sounds like a lot of what we have talked about is how to take the humanness out of the process. There is still a lot of serendipity, positive and negative, that just happens and I wonder what your thoughts are on how the legal business has changed in the last four or five years with respect to that, because I think it is a marked change in the last few years.

Mr. Tiller: I agree there is a human element and there are probably times that we all want to be sure that human beings are considering whether justice is being done or that the appropriate person is being applied. Those are not good questions for computers. But in deciding whether a document covers a particular topic, evidence is accumulating

that computers are doing that a lot better, hour after hour, than any human being could do.

I think we are going to increasingly get confident that there is a whole set of tasks that were traditionally thought of as human tasks, and a human element of practicing law that we are very happy to delegate to artificial intelligence machines. I am excited about that because I think it will make us more efficient and effective. I think also, inevitably, it is going to mean that there are fewer lawyers.

Mr. O'Tuel:

If I can step back on my soapbox for a minute, we have seen, unfortunately, a trend away from the lawyer as a professional, as the champion of the client, as the advocate, toward the lawyer as the business person, the merchant and tradesman. I think there are some detrimental side effects to that. I will give you two concrete examples. The first is what I just mentioned: the move toward utilizing an online reverse auction system to choose our law firms. I actually rebelled against that at the outset. Something did not sit right for me in that. It seemed like we were making lawyers and their services into a commodity, and I thought just by the nature of that, it would not work. So what we did to try and ameliorate that and begin to pull back was to utilize judgment, our discretion, and our minds and not solely rely on the computer and the data that comes out of it, but actually make a judgment. We pull in that RFI process and utilize the tools to efficiently analyze that data and then apply our judgment to it and actively be the professionals we are supposed to be.

The other example is technology-assisted review. Can a computer actually completely do a review of documents with only minimal human intervention at the outset to get the proper seed settings and to calibrate them properly? I am not sure where the law is going to end up on that, or where companies are going to end up on that, but my own personal

perspective is I much prefer utilizing the technology-assisted review to do exactly what it says: to *assist* in the review. I like it to highlight things that the team should look at, but then apply their judgment. A computer is never going to get some of the nuances of the case. It is almost impossible to get all of those nuances. It can pick up some things better than reviewers can. So to me, it is a blend of making sure we utilize the technology and utilize it perfectly, but apply our judgment and professionalism against that.

Mr. Boswell:

One thing I want to say has to do with alternative billing arrangements. When you are talking about hiring a lawyer to work for a company, you are generally talking about money. Nobody is generally going to go to jail and nobody is lying in a hospital, not going to have money to get treatment and continue to have a quality of life. So to some extent, the matters are not as important as they are when you are dealing with individuals and their liberty or whatever. The hourly rate really makes absolutely no sense, because when I go to sell software to a customer, and they say, "How much is it?" and I say, "It is \$100,000" and they say, "It is not worth that to me," it does not matter. "Well, I spent a lot of time developing it!" "I know, but it is not worth that to me." "Well, but I am really smart and I went to Harvard, and I have really good associates." "But it is not worth that to me." The disconnect I have with law firms is, you want to work on something for me, it is only worth x. I do not care, really, how much time you spent, what your hourly rate is, or how smart your associates are; it is only worth x to me, so I am only willing to pay x. And when I say that, sometimes the response I get is like when a dog hears a strange noise—they look at you like, "What on earth are you talking about?" That is because of the history of the hourly rate.

In a lot of law firms, the lawyers equate their hourly rate with their value to the world or how highly esteemed they are and other stuff like that,

which is fine, but it does not matter to me. I am trying to buy this company and I am only going to spend this amount of money in legal fees. Do you want this work or do you not? I am only going to work with law firms that are competent, so the chance that somebody is going to really screw it up are pretty low and I do not really care who does it. And it is only worth x to me. The wildcard is in litigation because a lot of the time, particularly in patent litigation—you saw the \$200,000,000 verdict that was given against Microsoft—I do not know whether a better lawyer would have won that case, or if it would have been a \$100,000,000 verdict, and that is the wildcard. So to some extent with litigation, particularly with company litigation, you do not know what it is worth to you because you do not know how bad it can be. So there is a little bit of a challenge there, but for a lot of things, alternative fees are good because it is only worth so much to me. Do you want this business or not?

I think it is a win-win because as soon as you hire a law firm by the hour, what do they need to do? Bill hours. Why do I care that they billed hours? I actually want you to do this as fast and as cost-effective as you can. But if you are billing by the hour, it needs to take a lot of hours so you can make your nut this month. You have got to distribute work out to associates and all that kind of stuff, which is totally opposite of what I want to happen. I want you to magically do this thing in fifteen minutes so we can move on because I have a business to run.

Do you see the disconnect? When you look at it from a businessman's standpoint, and when you become an in-house lawyer, you only have one client. My company does two things: makes software and sells software. All of my activities need to be focused on helping my company make software and sell software. If we are going to buy a company to utilize its technology to make software, the faster I can get that done, the better.

If a law firm wants to take a long time to do it so it can bill me by the hour, we are at cross-purposes. I want you to tell me how much you are going to charge me to do this, and let us get it done. That is why I think there is a disconnect when you are talking about hourly fees.

Professor Essary: Notwithstanding the foregoing, do any of you have relationships with certain attorneys that are predicated on their performance in past matters, but also on a trust relationship? You know you are going to give them future business because you trust them to give you the bang for your buck?

Mr. Tiller: Yes.

Mr. Boswell: Yes.

Mr. O'Tuel: Yes.

Mr. Tiller: At the same time, I have to say the question always arises: "What have you done for me lately?" I have been privileged to, on some high-stakes patent matters, work with some of the best patent litigators in the business, and I have come away truly impressed with their range of knowledge, their judgment, and their ability to influence a jury and work with the other judges and opposing counsel. There is a complicated skill set that goes into all of that and into managing a case efficiently. Watching them and watching their bills, over time, does build up a relationship of trust, and I consider that terribly important.

At the same time, I will say that the moment that trust is destroyed, that I suspect somebody may be charging a case to see how many hours they can get out of it, they are not going to be my lawyer any more. You develop those relationships and, at the same time, because of my fiduciary duty to the corporation, I am constantly thinking, "Is there somebody else who might do this better?" There is no real rest for the weary on that.

- Professor Essary: Any other questions from the audience?
- Male Voice: Both of the counsel from SAS mentioned this, and you stated how recent the growth rate is. The law is constantly changing both through new theories of the case and through new laws being passed. However, once people start to learn that they will not win certain cases, patent cases for example, will the problem not take care of itself?
- Mr. Boswell: It might, but we will all be bankrupt before that happens.
- Male Voice: You see it growing more?
- Mr. Boswell: Oh, heck yeah. It is going through the roof, and here is why. Patent trolls have no employees, no documents, no marketing, no cost of research and development, no anything. They simply own a patent, file lawsuits, and collect money. It is hugely profitable. So profitable that they now have become companies that are getting investors to invest in the business. So the only way this is going to be reined in is through Congress, through the Supreme Court finally getting around to doing something about it, and through attorney generals seeing the anticompetitive and the unfair and deceptive trade practices associated with this. If none of that happens, you should all go and become plaintiffs' lawyers for patent trolls, because it is hugely profitable.
- Mr. Tiller: I agree with everything, but he is joking about becoming a patent troll.
- Mr. Tiller: I think John is completely right. The situation, at least in the near term, does not look bright. Part of the reason, just to elaborate a little, is that particularly for a software company—and more and more everybody is a software company, your bank is a software company—the patent area is fast expanding and the patents have fuzzy boundaries. They are vague patents and it is hard to know, before you go to litigation, what they

mean. It is hard for anybody working the space to know if there is a patent on that. So it is incredibly hazardous to be in the business from the point of view of facing lawsuits. At the same time, the ability to bring a lawsuit is relatively easy. You can argue the vague patent covers a lot of things, look around for a target, and for much less than the cost of defending a lawsuit, bring the lawsuit. So I do hope that there will be litigation reform. I hope the Supreme Court will address the issue of software patents eventually, but I do not see dramatic change in the near future.

Mr. O'Tuel: I can only echo that. What I tend to see is the trend that for any new theory that yields significant return, there is an insatiable appetite. Basically, that litigation is going to continue until one of two things occurs: the funds are drained or there is a marked change in the law, usually by legislative action. Absent some sort of market change and distinct action, usually by the legislative body, these things tend to go on until the companies go bankrupt and the golden goose is the goose that lays the golden egg last.

Professor Essary: If each of you could, give a pearl of wisdom to our students who will walk out of these doors and start practicing law in less than a year. You have already dispensed some of that knowledge, but what do you wish you would have known?

Mr. Boswell: Learn analytics.

Mr. Tiller: I will come back to my initial remarks. I think that the ability to keep learning, keep looking at new things and figuring out how to use new tools and embrace change is going to be essential to the success of not just you, but also all of us sitting up here and all lawyers who are going to be successful in the years to come. Change is going to be a constant and you have to figure out how to deal with it.

Mr. O'Tuel:

I will echo that and go back to my comments at the outset as well. You need to understand your client, know how to work with them, know what they want, and utilize data analytics to do so. Specifically, when you are starting out, consider any way you can—not the first year or the first weeks that you are there at a law firm or wherever you end up—get practical experience in doing what you are meant to do. It may be taking depositions, it may be a variety of things. Take on small cases. Be willing to take on pro bono cases. Get the practical experience. Learn how to work with things, and that includes data analytics. You use these things; they can be scaled up and down.

Sometimes there is a little threshold cost that may prevent you from using it, but there are cases out there that you can get as a first-year associate or a first-year solo practitioner where you can actually practice the skills and learn how to do these things. It can benefit you down the road immeasurably.