Day Two—Economic Espionage

Group Breakout Session Three

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GROUP THREE: ECONOMIC ESPIONAGE

MR. GREEN: Good afternoon, everybody. I'm David Green. I'm Deputy Chief of the Computer Crime and Intellectual Property Section.

We are going to be talking about the Economic Espionage Act and theft of trade secrets and some of the sentencing implications for those. I will talk first a little bit about the Economic Espionage Act and about sentencing from a prosecutor's point of view. We have also with us a couple of distinguished experts. One is to my right—Carla Mulhern. Carla is an economic consultant and vice president of Analysis Group Economics, and she specializes in intellectual property damages estimation. She has had a number of cases, has testified a number of times, and is a frequent author and speaker on intellectual property issues.

She has a B.S. in Mathematics from Bucknell and an M.S.C. in Economics from the London School of Economics and Political Science. When I was trying to figure out who should be on this panel, who would be the economists who would actually understand what it is that we're trying to measure, Carla's name came up over and over again. So, we're very pleased that she could come here.

To my far right is Joe Savage, and Joe was a prosecutor for many years with the Department of Justice. I first met Joe when he called me up and said that he was an assistant United States attorney in West Virginia and he was prosecuting the Attorney General of Missouri. And I was a little confused at that time, but I now understand that that is par for the course. Joe was a prosecutor extraordinaire and now he is a defense attorney extraordinaire with Testa, Hurwitz & Thibeault, where he concentrates on complex civil and criminal litigation and white-collar criminal matters, including government investigations, compliance issues and a growing specialty, economic espionage, intellectual property protection and whatever else will pay the bills.

Let me start first by talking a little bit about the Economic Espionage Act. What I'm going to do is just very quickly go over what the Economic Espionage Act is, talk about the prosecution view on the sentencing issues here, and then we will turn it over to Carla. Now, my perspective on the EEA comes from three things. One, there is an approval requirement. The Attorney General signed a letter to Congress that said for five years after passage of the Economic Espionage Act, which was passed in 1996, there would be approval by at least the Assistant Attorney General in the Criminal Division of any Economic Espionage Act action that was brought. Those for theft of trade secrets all go through our section.

I think there was a concern that there would be an AUSA somewhere who might indict France without telling anybody and would cause a large diplomatic incident. But what the approval requirement has done is enable us to see everything that has gone through and get a sense of what is out there and what people are looking at. I have also, as a part of that, talked to a lot of investigators, prosecutors, and victims about the Economic Espionage Act. And I also was the lead prosecutor, and the person who considers himself the lead prosecutor, Marc Zwillinger, is also in the room today. We also worked on the case together, on the first EEA case to go to jury verdict, and that was in April of 1999, *United States vs. Four Pillars*.

I will talk a little bit about *Four Pillars* because I think it is an example of where we see the kind of difficulties we have in these kind of cases, evaluating what the loss is and some of the issues we have had with judges. Four Pillars was a company in Taiwan that was an adhesive manufacturer. One of the things

they do is make labels, the kind of labels that go on these water bottles or the kind of labels that go on these, "Hello, My Name Is," kind of tags.

These companies make huge, huge rolls of these labels and then sell them to the people who were actually printing it on the bottles. And that is what many of these companies do. And it takes an unusual kind of science to figure out what will stick on a water bottle which might get wet, what will stick on stuff that goes in a freezer. And, actually, when you get really into it, it is incredibly boring stuff, what we had to learn to get ready for this case.

So I hope there is no adhesivologist in the room that I have insulted. The largest American manufacturer is a company called Avery Dennison. You have heard of Avery labels and things like that, and that is one of the things they do. There is a company, Four Pillars, who makes the same sort of thing in Taiwan. In 1989, Victor Lee, a research scientist at Avery Dennison, was in Taiwan, and the people from Four Pillars invited him over for a presentation and said, "Well, you are a great scientist. You guys in the United States are very advanced, but you could help us, and we would like you to help us. We could learn whatever it is we could learn."

And Victor Lee said, and I'm paraphrasing now for purposes of advancing the ball, "How much for me?" And they decided to pay him about half again his salary every year, plus a free trip to Taiwan. And he said, "I'll take it." So, from that time on, he began to funnel every bit of information he could get his hands on and send it over to Four Pillars in Taiwan. In 1997, he was caught and decided that he had been doing wrong and wanted to cooperate with the United States, which sort of made you feel good inside, and the United States, in exchange, would make him a better plea deal and you know how those go.

He helped and made a videotaped meeting between himself and the company's chief executive officer, a man named P.Y. Yang, and the daughter, who was a company executive. And it was a sting operation where the chief executive had the opportunity to get what he thought were top-secret Avery documents and also a patent application that had not yet been made public. And he was very excited about seeing that, and carefully, with his little pen knife, cut out the word "Confidential" off every piece of paper and asked Victor Lee to take these, saying, "No, don't put them in the wastebasket. Take them home and throw them out with the other kind of trash, because we wouldn't want to see these things."

Immediately afterwards, P.Y. Yang and his daughter were arrested and, after a long trial, were found guilty of attempted conspiracy to violate the Economic Espionage Act. They were sentenced to the maximum fine of $250,000 and a term of probation for reasons I will talk about in a little while. The corporation was also convicted and was sentenced to a $5 million fine. There is also a parallel civil case going on that went to trial right after the criminal case was over. But that resulted in an $80 million civil verdict—that's after a trebling of damages, plus fees and expenses.

The Economic Espionage Act, very briefly, criminalizes federally the theft of trade secrets. A lot of times in prior law, there was not the right statue. Sometimes you could charge it under mail fraud. Sometimes you could charge it under receiving stolen property or transporting stolen property.

A lot of times, you just couldn't charge it because the statutes didn't quite work. So, there are two main sections. One is theft of trade secrets to benefit a foreign government, and there have been no reported cases brought under the provision. But, generally, if you do find a foreign government stealing

your company's property, you want to call the FBI right away. You really don't want to go into battle by yourself with that foreign government.

Most common have been—about 20 or 21 cases now—theft of trade secrets, generally. And 1832 covers that. That is by an outsider or an insider. It can be by a foreign or domestic company or by an individual. The elements you need: the defendant stole or without authorization of the owner obtained, destroyed, received or conveyed information, and the statute is full of somebody who really broke out their *Roget's*, and there are plenty of different ways of doing the same thing in this statute.

But they want to make clear that any misappropriation of any sort would be covered under this. The defendant knew or believed that the information was a trade secret, and our interpretation of that is that you don't have to have gone to an attorney and had a formal opinion. If you think that it meets the definition of a trade secret (that it is confidential information, you knew you had no business getting it), then that would be a trade secret if it meets the other definitions—that the defendant intended to convert the trade secret to the economic benefit of someone besides the owner. That is usually the defendant himself or another company. And the defendant knew or intended that the owner of the trade secret would be injured.

So, if you just are trying to hurt the owner and not benefit anybody else, then that would not be covered. Most of these are where somebody is trying to get money. And then, finally, the jurisdictional element: if the trade secret was related to a product that was produced for or placed in interstate or foreign commerce.

Trade secrets have a very broad definition, covering all forms and types of information, including all these examples, whether or however stored. So, it doesn't have to be on paper. It can be stored electronically. It can be stored photographically, et cetera, if it meets the two key elements: which are, one, the owner has taken reasonable measures to keep the information secret; and, two, the information derives independent economic value, actual or potential, from not being generally known or readily ascertainable by the public.

So, it is valuable because it is a secret. If everybody knew it, it wouldn't be worthwhile anymore; and the other measure—and it relates to what we were just talking about in the last panel—is the reasonable measures to keep it secret. So, if you have not really taken very good precautions, for example, to protect your computer system and somebody hacks into it, that person could still be prosecuted for hacking, as Marty Stansell-Gamm was talking about. However, if you have not really done a very good job at all of protecting your trade secret and it is open on the computer and someone could get in there with the most elemental of tools and someone can read it, it may not be a trade secret. You may not have taken reasonable measures to protect that. So, that is something you have to be aware of, and that is something the prosecutors will look at at the outset and ask what reasonable measures were taken to protect this secret.

Sentencing: 1832 has a maximum penalty of ten years and a quarter-million dollar fine for individuals, $5 million fine for corporations. But the actual sentences in the 20-plus cases have ranged from probation to 77 months in prison. So they are all over the board. It is covered under United States sentencing guideline 2B1.1, which is theft. The base level is four and in most of these cases you would add two for more than minimal planning. And then the offense level is increased based upon the amount of loss. And, again, loss can be the fair market value, and the key is the fair market value of the property taken, damaged or destroyed.

If that is difficult to ascertain or inadequate, the court can measure it in another way, and it need not be ascertained with precision. The sentencing guidelines, in my experience, are built for the basic, obvious, run-of-the-mill kind of criminal cases most of the time, where it is pretty easy to figure out how much was lost or how much was gained; a bank embezzlement case or even a white-collar fraud kind of case, where you have hard numbers. Somebody has gained it, somebody has lost it, and that is how it works.

In the theft of trade secrets case, for some of the same reasons we have been talking about in computer hacking cases, it's harder to figure that out. Carla will talk more about this, but the basic ways that courts have dealt with this is to try to look at the fair market value, which one way would be the amount that the trade secret was actually sold for. But that sometimes will not have occurred yet in these cases, and a lot of these cases are sting cases where we have not yet known for sure what the person is going to do with it or how much money they're going to get for it.

So, there is this theory of reasonable royalty or forced licensing, which no doubt I will mangle, but it is the amount that the buyer or the hypothetical buyer would have paid if he or she or it had legitimately licensed the stolen technology; there would be a range of sums that the owner of the trade secret would have licensed it for and the taker of the trade secret would have paid for it, and where those intersect would be the range of the reasonable royalty under the forced licensing theory.

The other theory is sort of a "gain to the defendant" theory: how much this defendant stole is measured by how much it would have taken for that person or that company to develop it on their own. Well, how do you know that? It is very hard to figure out. But one way you can say is, "Well, in our case, how much did Avery Dennison pay to develop this?"

And it turns out that, on average, it takes them about $1 million in research and development costs to come up with a new adhesive, between the testing and the formulations and spilling little vials of things by people in white coats. So that can be measured by the victim's historical research and development costs, which may or may not match up well with how long it would have taken the defendant to come up with the same thing. But that is sort of the best we can do in a lot of these cases, and as I say, Carla will discuss this further.

Marc Zwillinger was the principal author of our sentencing memorandum where we tried to come to grips with a lot of these questions. We talked about the various ways that the courts are dealing with these and how we can do this. And in that case, Avery Dennison had already hired an expert witness who had come up with an evaluation and done a mammoth study of both Avery Dennison and the marketplace and how that all worked.

And he had estimated a reasonable royalty rate for the stuff that was stolen at about $73 million. We advocated using research and development costs for the theft of adhesive formula, which was about $36 million, which would have increased the offense level 18 levels. The defendant said, "Wait a minute. Let's figure this out. Avery Dennison still had their formulas. We didn't take their paper formulas and remove them out so they wouldn't have the formulas anymore. They're still making their products. They're still making money. No loss to Avery Dennison. Plus, we're competitors. We're a little company in the Far East. Avery Dennison is not hurt by our competition. In fact, they are the big, bad bullies. Yeah, we took this stuff from Victor Lee, but it wasn't very useful, and we thought it was mostly public information and a lot of the adhesive stuff in the United States, if you run it at really fast speeds—which can

be done with equipment in the United States—we could not run it. Frankly the stuff was worth nothing to us. So, let's see. They didn't lose anything. We didn't gain anything. Zero, which if you look on the Sentencing Guidelines, equates to the United States has to apologize and go home."

So, we then go to the judge, and the judge, after a very exhausting sentencing proceeding where we heard from expert witnesses on all sides, said, "Well, you have proven one of these formulas, even though 40 were taken." I can't remember the exact number—"I had adequate proof on one of them. That one, I am convinced, cost $1 million to develop, and I am going to use that as the basis."

With adjustments, we end up with a level of 24 for P.Y. Yang, who was the major defendant, 51-to-63 months, and since the guy was 73, you know, that sort of gets the message across. But then, as the punch line, the judge says, "But wait a minute. Avery Dennison, the civil victim here, was 'over-involved' in this criminal case. In fact, they were just using this criminal case as a dress rehearsal for the civil case. So, I am going to depart downward, say, 14 levels." And that ends up with probation. What do you know?

At the same time, the judge ordered the maximum fine for corporation, $5 million, $250,000 for the chairman. And the whole case is being appealed, the United States saying 14 levels for over-involvement is error. In the meanwhile, P.Y. Yang has gone home, and I'm not sure he would accept a return invitation to the United States if he was resentenced.

It brings up a lot of sentencing issues for prosecutors; one is these things take an elaborate study to try to figure out what the research and development costs are, much less the reasonable return. I cannot disclose, but I have it on good authority that Carla charges more than $50 an hour for her work. So, it really builds up after awhile, and that is going to be a lot of cost to the government.

There's also a potential conflict with the victim. We have to represent the United States and the people, but sometimes the victim's view and the government's view is different. But if the victim says, "Hey, wait a minute. We just had a big study, and these are worth a lot of money," and the government says, "Well, our economists say they are not worth very much at all," it is going to really hurt our ability to get other victims to come forward and report crimes because they say, "What is the value of it?"

And it very hard for prosecutors to assess the accuracy of the claims. When Carla and her colleagues talk economics, my eyes generally glaze over and I think, "I don't know what she is talking about." I don't know what the reasonable royalty rate would be for these rolls of adhesives and the licensing technology. I have no sort of independent way of checking that.

So, all these create problems for prosecutors. It also creates these lengthy sentencing hearings where you're working on these very esoteric concepts for a lot of judges and prosecutors. And, I think the judges will say, "All right, for the civil case, I don't mind if I don't fully understand this. It seems like a reasonable figure and the jury has awarded it anyway, so pay him $80 million. Fine. Go away."

But when you say, "All right. $80 million, that equates down to 603 years on the sentencing table, wait a minute. I'm just not sure enough about these facts and figures to really want to do this."

So, I think one of the things is you see courts resisting these kinds of the fuzzy math, to coin a phrase, in sentencing people to jail. And oftentimes, again, these will be sting operations. You don't have

any actual loss. You don't even have a real trade secret, but something that looks and smells like a trade secret but is not.

I'm going to turn it over to Carla, but if you want more information, the web site is *cybercrime.gov*, and in it is included a table of economic espionage cases which, since Marc Zwillinger left the section, have not been updated, but soon will be. There is also a prosecution manual that also will be updated very soon, which talks about trade secrets and will be much more extensive than the current treatment of it.

So, does anybody have a question now that they want to ask? There will be time at the end of this.

MR. SAVAGE: Your sentencing memo said they lost more money than all the banks combined in the county where the case was tried. Was that accurate?

MR. GREEN: If it was in our sentencing memo, it was accurate.

QUESTIONER: And the judge accepted the $1 million value?

MR. GREEN: He accepted the $1 million value. He then upped it. He said, "I realize one million is for one. I don't know about the other ones, but I'm going to up it several points, because—since at the end—you don't know this yet—I'm going to go down 14. I could up it 20 points and go down 34."

Not that I have feelings about it. So, he recognized that there was a real loss and then he fined the company $5 million, which we're still waiting to collect. But that is another story.

QUESTIONER: They never paid you.

MR. GREEN: Well, they were little short this month. So, we're having a little hearing on that one, too.

QUESTIONER: If I could just share one thought, because we were talking about the measures of loss. In the case, what David said was the average loss, is what we used. We proved what one formula cost at one million, which the judge accepted, and then tried to say use the average of those, do the multiplication, and set that as the loss figure. We knew in advance that the judge would be far more inclined to accept the R&D hard numbers than the reasonable royalty. But yesterday, when we did a breakout section on loss, we spent a lot of time talking about what the real loss is. And it seemed many people were much more comfortable with the idea of a reasonable royalty or actual loss than R&D, which doesn't traditionally bear a direct relationship to how much the thing was worth at the time it was stolen. It just tells you how much it historically took to develop it.

So there is still a tension here between what something cost to develop—which is the figure judges are likely to accept and did accept in this case—and the Commission's guidance and the value in the guidelines which says, "What is the value at the time it is taken." It is sort of an interesting development.

MS. MULHERN: I must admit that when David first called and asked me to do this, I was thinking that he must be terribly confused or there was some misunderstanding because this was the first I have heard about sentencing. And the criminal field is not an area we get involved in. Our business is valuing intellectual property, patents, copyrights, trademarks, trade secrets.

Typically, we get involved in litigation in civil cases, and we are asked to provide opinions and expert witness testimony as to the value of damages due to misappropriation of intellectual property. I suppose the majority of our work involves patents but we also do copyright, trademark, and trade secret work.

I read the sentencing memorandum in the *Four Pillars* case with great interest, and then I suddenly could see more of the overlap between what we do and the sentencing guidelines. I thought I would kind of walk you through our role in these types of cases. First of all, I thought I would start with the civil cases, which is what we do, and talk about the ways we estimate monetary recovery. Then I thought I would focus in on reasonable royalty, which is one of the methods that we use.

Given the time constraints, I don't think there is time to go through everything in great detail, but we could go through the reasonable royalty framework, which seems to be a big feature of the *Four Pillars* case. The advantage is that reasonable royalty can be used to estimate either plaintiff's damages or defendant's gain, depending on how you think of it. It's pretty versatile.

I thought I would walk through ways in which we quantify a range over which we calculate a reasonable royalty and then describe some qualitative factors that we examine to help us choose a rate. In civil cases involving trade secrets—this is also the same for copyright and trademark—a plaintiff would be entitled to either his or her damages or the defendant's gain, sometimes both. I have certainly worked with lawyers who were trying to argue they should get both, although I understand there are double-counting issues and different courts have different things to say on that.

As far as plaintiff's damages, the most traditional method to measure plaintiff's damages would just be to look at lost profits on lost sales. There certainly are cases in which, due to the theft of a trade secret, the plaintiff may have lost profits. One that comes to mind is a sort of bidding situation—where the defendant has information about the plaintiff's cost structure. The defendant would then have an advantage in the bidding that could actually then result in direct loss of sales to the plaintiff and then corresponding lost profits.

Another form of lost profit would be royalty, lost license fees. The plaintiff should certainly be entitled to some sort of reasonable return on its intellectual property, and that could be measured as a royalty payment, a royalty rate or a license fee based on sales. Thus, plaintiff's lost profits could be measured by lost license fees or lost royalty payments.

The theory is, at the time of the theft, instead of absconding with the goods, the defendant and plaintiff sat down at a negotiating table and negotiated reasonable license terms or royalty for the use of the intellectual property. Another way one might look at plaintiff's damages would be lost business value, if there was a harm to the business.

Sometimes we use this measure—especially in cases in which the plaintiff is sometimes a start-up firm. They really don't have profits yet. Sometimes it's very hard to measure lost profits in that type of case, but you know there has been some harm. So, you can look at what kind of loss to the business there may have been, what kind of loss to business value.

In analyzing defendant's gain, which we also examine in these type of cases, we can look at what the incremental or the additional profits (or the additional revenues, less costs) that the defendant was able

to achieve as a result of using the intellectual property. Another way to look at that again is with the royalty method.

They avoided having to pay a license fee for the use of the technology. So, what were their avoided royalties? And it leads us to a reasonable royalty analysis. And the final item would be, as David was touching on, avoided research and development costs. They were able to steal the technology, therefore they didn't have to develop it themselves.

I thought I would focus now on reasonable royalty, but I can come back to any of the others during the questions, if you're interested. In a reasonable royalty determination, we begin with a hypothetical negotiation construct like I alluded to briefly, which is the plaintiff and defendant sit down at sort of a hypothetical bargaining table at the time that the theft occurred and negotiate a reasonable royalty rate.

Typically, we opine that these rates, these license terms, are a running royalty rate on the sales of a product, although they take other forms. It can be flat fee per use. It can be a lump sum. It can be expressed in lots of different ways. But, in the licensing field generally, the most common way we see royalties expressed would be rates on net sales. So, that is typically how we would express it.

Once we think about this framework, we would apply a series of quantitative tools—these would be business valuation kinds of tools—to set the bounds over which a negotiation would have proceeded. And then we would examine some qualitative-type factors that would be hard to put a number on, but qualitative factors that would help us select an actual number in that range or at least to narrow the range.

Regarding quantitative tools used, there are three basic tools in valuing assets, generally. These would include tangible assets as well as intangible assets, such as intellectual property. These are the same tools that are used by valuation professionals everywhere. There is the market approach, the income approach and the cost approach, and then I will go into a little bit of discussion of each of these approaches.

In the market approach, I think the most common example is real estate. You look at comparable transactions. If you're going to buy a house, you want to look at what other houses in that neighborhood have gone for. So, you're looking at a set of comparable transactions that actually took place. That is sort of the best case and that has certainly worked in cases in which you have a trade secret changing hands and you actually have a license. You actually have terms of a license. You actually have a royalty rate. That gives you a nice benchmark, and it is comparable.

Sometimes you will be looking at proposed transactions, deals that were discussed but did not actually result in a final deal. One of the things to consider in applying the market approach—which is one of the reasons we typically use as many of these kinds of tools as we can—is that they all have their strengths and weaknesses; they all have their limitations.

In the market approach, obviously, you have got to really examine how comparable it is, how comparable the comparable is. Are there similar kinds of circumstances that would be expected to result in similar license terms? We look at the extent of the bundled IP. In these cases, in IP cases generally, market transactions between business people often include or involve a bundle of intellectual property. They involve patents, copyrights, trademarks, trade secrets, know-how.

They can involve all sorts of things. You have to be a little careful when you're looking at license terms to try to account for the fact that there might be differences in the bundled IP. You want to look at the extend of cross-licensing. You want to see if both parties are actually bringing something to the table in terms of intellectual property, and you want to look at the bargaining strength of the parties at issue and in the comparable.

For example, all else equal, a license negotiated between, say, a garage inventor and a large corporation, would be very different than one between two corporations competing in the same market.

The next type of tool we use would be income approaches. These attempt to value the financial gain to the licensee through the use of the intellectual property. What we're looking at is the gain to the user of the intellectual property, or you also might be looking at what was the expected gain to the actual owner of the technology. So, the plaintiff and the defendant, you might be looking at both of their expectations regarding how much money they can make through using the technology to give you an idea of how much it is worth in the marketplace.

There are three tools typically that we would try to apply, given data. The first one is the 25-percent rule. This is just a rule of thumb. This is a rule of thumb in licensing, generally. I went to a Licensing Executive Society annual meeting last month, and one of the guys started off by saying, "When you are negotiating over your technology, when you're sitting at the table, if you know nothing else, you want to start with 25 percent of the expected profits on the product embodying the intellectual property."

That is sort of a starting place rule of thumb. This would not be an ending place, typically. Typically, you try to refine that, based on the specifics of the transaction. The next would be an incremental income approach. In that one, what you're trying to do is compare to some benchmark the value the use of the intellectual property can give you.

For example, if you have a choice of using the intellectual property to promote a product or the older, more standard technology, will that give you a cost savings or an ability to charge a premium in the marketplace? If so, that would suggest that there is a wedge there, say a profit margin differential between the two. For example, a defendant in one of these cases might know that using old technology, they can create a product that is acceptable to the market at a profit margin of ten percent, and using the intellectual property, they can achieve a cost advantage or a price premium that would let them get a profit margin of 20 percent. They might say, "Well, I'm not going to pay you more than ten percent royalty because I could just use the old technology."

Another way we look at this is the discounted cash flow approach, and that is where we look at the projected cash flow arising from the use of the intellectual property in selling the product into the future. And we would derive from that an expectation of the maximum amount that the user of the intellectual property could expect to gain through using it.

Obviously, we have some considerations here. When you're thinking about applying income approaches, you need to be a little careful with the financial data you're using. And reliability of projections. Typically companies do a lot of different scenarios based on all sorts of assumptions. You need to look carefully at all of these things.

One of the things you want to think about, too, is the selection of a benchmark in the case of an incremental income approach. How good is your market alternative? And in the discounted cash flow approach, you just have to think about what the appropriate discount rate is over which to calculate the net present value.

A final tool we would look at among the quantitative tools is the cost approach, and I think they were just discussing this in relation to the *Four Pillars* case. This overlaps with what I was discussing previously, the research and development cost kind of argument. One way to value an asset is to determine how much it cost to create the asset, and that is what I think we were getting at earlier. There are two types of cost: reproduction cost, which is how much it costs to produce the exact item; and replacement cost, how much it would have cost to create something that does the trick. It is not exactly the same thing, but it is a good substitute.

These measures often will understate the true value, and the example we always use is the Coca-Cola trade secret. Imagine how much it must have cost to create that formula for Coca-Cola versus the value of it today. And there typically is a disparity there, although it is one thing that is often worth looking at. But a cost approach can understate the true market value of an asset.

In applying the cost approach, you want to look at out-of-pocket costs as well as opportunity costs. Typically, I think one of the places where the implementation of a cost approach goes wrong is that people focus too much on just out-of-pocket cost, cash cost to develop things, and we run across this in patent cases where a defendant will come in and say, "Oh, that patent wasn't worth a lot to us. Yeah, we infringed it, but if we had known and sat down at the negotiating table, we could have designed around that for $1 million. It would have cost us $1 million to design around it, to create, to pay the scientists and buy some new equipment, and it would have cost us $1 million and that is all we owe you."

That is a cap on damages. We will come back and say, "Yes, but that would have taken you a year, two years. There is an opportunity cost to being out of the market for that period of time. If you are going to correctly implement the cost approach, you need to take those things into account. If you have foregone profits over a period in which you're out of the market developing something, that has got to be taken into account."

The final thing is the acceptability of the alternatives. Sometimes they will say, "We could have designed around and come up with this alternative product," but you have to really evaluate whether that would have been acceptable to the marketplace. Did it have the same features the marketplace wanted in the product that used the intellectual property?

Typically, we put all these methods into the hopper. We apply all the ones that we can, given the facts of the case and the data we have available, and we usually arrive at a range over which we hypothesize that a negotiation would have taken place. Once we have this range, we want to look at some qualitative factors just to think about what makes sense to us as to where we should be picking in that range, the high-end, the middle, or the low-end.

Obviously, lots of testimony goes before juries, with people saying they sort of split the baby and go right to the middle. But in some cases, the weight of the facts might suggest a number toward the higher end of the range or the lower. These qualitative factors can be categorized into a few groups. The types of factors we usually consider them include:

- What is the strength of the intellectual property? Is it a revolutionary advance, or is it just some sort of small increment over the old technology?

- How successful is the product at issue? Is it a blockbuster kind of product, or is it, again, just a medium success-type product in terms of profit margins?

- The third point gets down to the market size. Is this going to be appealing to a large market or is this going to be just a niche product with a relatively small potential for sales?

- We would look at the terms of the technology transfer. Here, we're looking at whether this would be one of the hypothetical licenses and exclusive license or non-exclusive license. The law typically suggests we look at things in terms of a non-exclusive license, to U.S. rights, not necessarily worldwide.

- Negotiating party characteristics—again, this gets back to what I was discussing. Is it a garage inventor or a large corporation where each one of them is bringing a little more to the table, or is it a situation of two hostile competitors going head-to-head who really do not want to be licensing each other at all?

That is sort of the general way we think about it, just from a common-sense point of view. The courts have set these out in a formal listing in a patent case, a landmark decision, the *Georgia-Pacific* case. I don't know how many people may be familiar with this case, but these are the Georgia-Pacific factors. (See Figure Mulhern-1.) And you can see that most of these can be thought of in the five categories that I gave you before.

I don't know if there is a lot of value in reading them now, but they are common-sense kinds of things. The first couple really get you to the market approach, which would be: other kinds of royalties or payments for similar technology and the terms of the license; the strength and importance of the intellectual property; and what kind of money could be expected to gain from the intellectual property.

And then we always like the opinion testimony of experts. And the hypothetical negotiation really subsumes all of those. That is really the construct under which you are evaluating all of these. So, that is really all I planned on talking about. Does anybody have a question now?

QUESTIONER: How much weight does the R&D factor really get in the sort of hypothetical arms-length licensing factors test?

MS. MULHERN: Typically, we would apply all of these approaches. But I have to say that the one that we're least keen on is the cost approach. I think that one is most problematic. You want to use a market approach if there is a good comparable out there that tells you something, that is, an observation on what the market says this is worth.

Oftentimes, those don't exist. In most cases, in fact, those don't exist. So, you're looking at an imperfect comparable at best. Sometimes there aren't any. The income approach, I think, is where we place a little more weight because that really looks at how much money is at stake here. How much money could the defendant make from this? How much money did the owner expect that he or she could make from it? That gives you a lot of guidance as to how much money would someone be willing to turn over,

fork over in the form of a royalty payment. I think that is probably the one where we place the greatest emphasis.

QUESTIONER: But R&D is still a component of that. Right? You still look at the amount spent in R&D in determining what type of license they would be willing to accept. Or you don't look at all?

MS. MULHERN: From the point of an economist, R&D is a sunk cost. If you're sitting at a negotiating table, then the amount of money spent by the owner of the intellectual property at the time they are sitting there is a sunk cost. They have already spent that money. We're looking at going forward. So, we don't usually consider it there.

QUESTIONER: I know you said you haven't testified in criminal cases. You don't do this in criminal cases.

MS. MULHERN: No, not our firm.

QUESTIONER: I am just wondering, the criminal side is generally looking for certainty and the burden of proof people feel it is higher, even though at sentencing, it is not set to be higher than the civil case. I assume you testify on both sides.

MS. MULHERN: Definitely.

QUESTIONER: Sometimes for plaintiffs, sometimes for defendants. When you do this, do you say there is a range of value or do you come to a precise figure?

MS. MULHERN: It varies depending on the facts of the case. Usually, we try to come close to a value, but sometimes there is a range where we think we can't get any narrower. So, sometimes we do put in a range of numbers.

QUESTIONER: Medical doctors say with a reasonable degree of medical certainty. What do you say, with a reasonable degree of economic certainty?

MS. MULHERN: Yes. I mean the standard in the civil cases is—it is a reasonable royalty, reasonable compensation. It is recognized that there is not one answer to the question. But you are coming up with a reasonable approximation.

QUESTIONER: The judge says to you, "Well, are you sure that's the right figure? Could it have been a million dollars higher?"

MS. MULHERN: The idea is evaluate all the evidence and come up with the most likely number, given this hypothetical construct. But we are operating in a hypothetical world, and everything is a little gray.

QUESTIONER: Do you come up with a number or a range?

MS. MULHERN: Typically, we come up with a number, a rate, a royalty rate. But, in some cases we do come up with more of a range. In some cases, what we're asked to do, if we're working for a

defendant, is to just say that their number is a little on the high side and you might stop there. You might sit down there. You might say that is really excessive in light of these factors and just stop there.

MR. SAVAGE: David asked me to take a crack at this from the defense perspective. It is also a perspective that might be useful when you have a client that is a company that feels it is a victim of a trade secret theft and wants to figure out what will happen if we go to the government to go after the other guy. So, there is a component of that as well. But basically, I was sort of called upon to pick away at Carla and David. The time limitations will prohibit this from being complete.

But I do want to put maybe a finer point on the question to Carla. Carla's folks are first-rate. Our law firm has hired her group. She works as an expert for us, but I don't think it is a coincidence that she hasn't done a criminal case. There are two different worlds afoot here, and a lot of these expert calculations and these economic analysis theories are not the things that comfortably translate into a criminal proceeding along the lines of what David was saying: it is a few bucks between adults as opposed to time in jail.

A lot of the expert's value can sometimes be, "How do I pick holes in the government's presentation?" Or vice versa. "How do I understand what is going on here?" But ultimately, I think that at the end of the day, there is going to be a need or a searching by a judge for a bit more concreteness than comes with some of the things that Carla's people do.

Let me make a couple of points up front about this whole area. First of all, the guidelines will never work for trade secret cases as they are presently set up because the property is taken, but it is not completely gone. And it is returned, but the person is not made whole. That is completely inconsistent with the way §2B1.1 is drafted, which is in terms of doing calculations in the case of, you know, "Somebody stole my Chevy."

You have got a square peg, round hole type of problem. So, the guidelines are always going to yield the wrong answer as applied in the framework of simply the loss table. I think the Commission is going to have to move to a standard that either incorporates one or both of the notions of (1) broader guidelines dollar figure cut-off points for the range of loss—and I say that in italics—in EEA cases or (2) an expectation or encouragement of significantly more departures in this particular area.

One of the things that is implicit in the fact that the guidelines do not work and will always yield the wrong answers is that, as lawyers, we have to pay more attention to the procedural aspects at sentencing. You have to maintain the focus on who actually has the burden of proving something here—which is the government at sentencing—and what is the specificity with which this stuff has to be proven. And, to the extent there are experts involved, do not miss the basics of looking at their qualifications. Until I recalled how much work Carla and her folks had done for our firm, I was going to go into depth with the notion that the first thing you do is allege resume fraud by the expert. But that would not be appropriate.

At the end, I want to wrap up with what I think might be a useful model from a defense perspective for taking on EEA cases. For lack of a better term, I will refer to it as the restitution model and maybe suggest that sentencing work backwards from the way a lot of the cases have been brought to date.

As David said, the relevant guidelines is §2B1.1. It is important to note that in the background section of that, it talks about the value of the property and that that is somehow an indicator of harm to the victim and gain to the defendant. That assumption may be questionable in the EEA circumstance,

depending on what your notion of the value of the property is. But once you have got this loss figure, you go to the table. I think it stops at over $8 million, which was significantly below where the prosecutors found themselves in the *Four Pillars* case. But they managed to sort of crawl down to somewhere in the table that had been envisioned by the Sentencing Commission.

In particular, the application for §2B1.1 talks about the value of the property, and it is the fair market value of the particular property. Well, if you want to be literal about what we're talking about—particular property—then a lot of the things that Carla's expertise goes to—lost profits to a business and things like that—it seems to me do not fit easily with the notion that what you're valuing is a particular piece of property that was taken.

So then the guidelines give a default option here. If it is difficult to measure the harm, you can look at replacement cost to the victim. Well, of course, taken and destroyed are the same thing. Right? Well, in EEA cases, it is not destroyed, and it is not taken in any traditional sense. And, so, there is no reason to think as a pure analytical matter that replacement cost as a relevant consideration for something that is not completely gone. It doesn't need to be completely replaced.

Again, both §2B1.1 and the other loss tables say that there are times for departures. As with everything else in the sentencing guidelines, the tilt is always toward more. I'm loathe to say this within hearing distance of anyone who has anything to do with the Sentencing Commission—that they ought to fix something—because every time they fix something, they just raise the penalties. But I think Paula was trying to think of one last night, and she could not think of a guideline where the Sentencing Commission has fixed it downward. But she claims that it is out there.

In terms of trying to frame defense arguments, there are analogous guidelines. The fraud loss guideline reads much the same. It, again, says that there can be upward and downward departures. But, interestingly enough, the fraud loss guideline says that when you're talking about loss there is a cross reference back to §2B1.1, and it says think about those definitions.

I mean, it literally almost says it that way. Think about them. You cannot tell whether they're applied interchangeably, but you don't get much new information by going to §2F1.1. I think it simply becomes a repetition of the same applicable principles. So, what does the guideline system do when everybody forthrightly says, "We really do not know what the truth is. We don't know what the bottom line is."

One other analogous guideline—just if you're thinking about ways to address this problem—the arson guideline, interestingly, says that if you burn a competitor's building, you get two points. So does the EEA case essentially mean you have the equivalent of burning your competitor's building? Maybe it is much more simpler than trying to weave through these various loss calculations under §2B.

But, when you do not know the truth, what the government will immediately point to is, "Hey, you don't have to do this stuff with precision. It can be a reasonable estimate, and this is all straight out of the application notes."

And both §2F and §2B say you don't have to determine it with precision. This is where my point about procedural niceties comes in. First of all, it is not at all clear what the Commission meant by, "You don't have to prove it by precision." For example, did they mean that if the range is from $850,000 to $1.2

million, then you do not have to prove precisely where you are within that range to apply the range, or did they mean you can just shrug and say, "Yes, that is about a million."

Clearly the better argument is, "All right, within the range, you do not have to be precise because that is a waste of everybody's time, assuming you're certain you are within a particular range." Likewise, I'm not aware of any authority the Commission had to repeal evidentiary standards or burdens of proof and permit you to just "hunch" it.

I mean, they can say what they want, but it doesn't seem to me that when judges have the responsibility of making determinations on contested factual issues, that the Commission had the authority to simply just abandon that. So, I think you want to be wary of the government's argument that, "Well, we can ballpark it."

There are cases where the Commission was forthright that they could not figure out what to do. When the Commission could not figure out what to do, did they structure it so, "We will go on the high side?" or did they structure it so, "We will go on the low side?"

And, unfortunately, there is no theme to the guidelines, and I think the examples of insider training and copyright show a fundamental inconsistency as to how the Commission approached it. When you go to insider trading, what you start with is a base offense level of eight, and then you go only to the gain. You're limited to gain. And the reason you're limited to gain is that we have got to punt. We know we cannot identify the losses so we're just going to go with gain. But do you remember the earlier application note that talked about gain as an alternative measure of loss? The Commission has already stated that gain typically undervalues the harm. So, here we have an example of how the Commission has explicitly chosen a measure that undervalues, in their view—and obviously all these cases have to be fact-specific—the harm.

If you happen to be a spiked hair copyright infringer on the net, it goes a different way, which is again you have got loss tables. But, when you can't figure it out, you turn to the retail value of the infringed item, and you just multiply it by the number of infringing items. Well, everybody knows that retail value of the infringed item by definition overstates the harm because, at the very least, you have not deducted the cost of production or shipping it in a truck or doing anything with it. So, if you happen to be sentenced for this crime, well, then we are intentionally structuring the system that overstates what you did.

So better you should be an insider trader than some computer guy who is posting stuff because Congress has an inability to identify with the latter category.

I flag those various guideline provisions and that sort of background framework just because—this area, being as new as it is and because of the experience that David and Marc had—judges are going to want to hear where this comes from. From a defense perspective, the last thing you'd want the courts to feel like is that this is regular old sentencing for regular old crimes. Instead they ought to be given the sense that they are at a cutting-edge place, that there isn't a lot of background.

I was really sort of disturbed by one of the remarks earlier at the plenary session by the sentencing commissioner who said, "I think we ought to let a lot of this play out and we'll gather the data and we'll do the right thing," because the whole sentencing guideline system is based on reflecting historical trends, which, in fact, it was. Loss drove sentences prior to the sentencing guidelines. So, what did they do with the copyright infringement guideline?

There were no cases. Zero. And they went and introduced that guideline. So, they waited for no experience. I mean, they sat around forever before they did the guideline, but they did the exact opposite of what the commissioner was saying today they ought to do, which seemed to make some sense, which is let this play out in terms of judges.

QUESTIONER: That was a congressional directive. For a lot of these crimes that you're getting now, a lot of the penalties are being directed and mandated by Congress. They will even come down with directives to add two levels to something. So, it has really played havoc with the structure.

MR. SAVAGE: In fairness, it absolutely was a congressional directive.

QUESTIONER: Also a great deal of clout by the motion picture industry.

MR. SAVAGE: A lot of these things are political statements, not, in fact, what the guidelines started as, which was, in some sense, an attempt to have a historical reflection of reality. The other thing is even when the Commission gets congressional directives, they go years without implementing those. So, it goes as far as it goes.

QUESTIONER: Trying to find experience there.

MR. SAVAGE: Well, I love this copyright guideline, just for fun. There are no cases on it. The Commission is sitting on it. They will not enact the guideline, and DOJ goes up there and says, "The reason there are no cases is you have not enacted a guideline harsh enough to make it worth our time."

So, then the Commission initiates the guideline, which is, in fact, harsh. And now we have three cases, and the department essentially went in the tank on two of them and just said, "We cannot value this thing," and the guys got probation. So, it is not all clear what the right answer on a lot of this stuff is. But, the salient point is that this is not cookie-cutter stuff coming out of the book, given the nature of these particular kinds of offenses.

The basic starting point—if you have got a sentencing where Carla or her folks are there—is to make sure you have got the expert qualified. The next issue that is always worth being cognizant of in this "loss" type of area is the causation issue, which is an issue that the guidelines do not address directly. This issue of causation gets passed by a lot of times in sentencing. It is like, "Oh, there would have been all of these lost profits, and there was all this terrible stuff, but was it, in fact, related to the secret that was taken or were there intervening or other causes that are relevant?"

There is one other point particular to the EEA that David touched on that is worth noting. There is an element of the offense; that is, an intent or knowledge of harm. So, for example, in the *Four Pillars* case, if the facts were as follows: Avery Dennison is never, ever, ever going to sell in China, couldn't care less about China, didn't want to go to China, and Four Pillars was going to steal this stuff and sell a little in China, but they know it is not going to have any effect on Avery Dennison because Avery Dennison is going to stay in Akron or Youngstown or wherever they are and just dominate the U.S. market; there would be no violation of the EEA.

There was no intent to harm and no harm. Yet every damage calculation number would still be the same. It's like our R&D costs are still there. Our replacement costs are still there. So, the very numbers

that the government is giving—there is $3 million to $173 million in damages, et cetera—would all apply to a thing that would no longer be a crime.

And, so, one methodological way of thinking about this is, "Well, the government has got to prove beyond a reasonable doubt that there was an intent to harm." How much harm was intended? Why not just have it be that at sentencing, they prove by a preponderance this one more point of what they had to prove beyond a reasonable doubt at the trial?

But then you have got to move to a number that becomes very concrete and very manageable by a judge who is trying to address the issue. Fair market value—you have got issues about what market. You know, is it the thieves market, the black market? And, again, typically it is the victim's market, but there are always arguments that you should make or try to make that it could be another market.

The Eighth Circuit goes by default to use the greater of retail or wholesale. They do that by reference to 641. The issues that come with trying to get a fair market value, though, is: how do you place a value on something that has no market? What about all these intangible additional harms that it seems to me the government has a perfect right to argue on the victim's behalf that don't get picked up in the usual way with a market value assessment?

Lost profits, again. I don't think that fits with the guideline's notion of fair market value. I think you have got real issues of the speculativeness and the certainty with which that can be done. You've got to factor in the cost, and there are just too many underlying assumptions; from a defense perspective, you want to argue about those to rebut that notion.

‹Reasonable royalties' has the same sorts of issues. I mean, the premise of Carla's numbers is that it is a hypothetical negotiation, but it is a real prison term. And there ought to be some linkage between those concepts. And the notions that fit into this—in terms of the industry standards and where this 25-percent number comes from and how hard or soft is that number—are the things that get addressed.

Likewise, the kinds of cases that have been brought under the EEA—and they may change somewhat in the future—but the sting-type operation where it wasn't real to begin with, couldn't have been an actual loss. The *Four Pillars* case had a component to it, as David was getting wound up here, talking about the speed of the adhesive machine. but there was in reality an issue in that case that it didn't need to be that fast in Asia or whatever. So stealing that particular ability to do that particular thing was of absolutely no value to Four Pillars. So, if they got no gain, they should they be able to suffer no pain?

The gain to the defendant seems to be a model that courts are going with in some of these EEA cases. Only a couple have been litigated. David has described that. Obviously, most cases get worked out at a plea bargain stage, and the reality is that these numbers are so soft that the negotiation, frankly, is one that is done with only passing reference to the guidelines.

I think it would be fair to say—if people were candid—that a lot of the numbers are backed into. You know, "You give me a shot that I can argue for home confinement. That gets us to a level 12, but what kind of number do we need to get to there?" And then the government says, "We have a shot to argue for jail," and everybody is happy, and off you march. And it is a way of resolving problems that are handled in the shadow of the guidelines.

It's not atypical, but it may be even more divorced from the guidelines system here than are a lot of other offenses. Maybe one approach to take is what I call the restitution approach. Usually, restitution is like the tail on the end of the sentencing dog, but in the EEA context—maybe from a defense perspective in appropriate cases—it is where you want to start because it forces the judge to do some real specific things, like determining how much money you have to give them back; what did they lose?

You heard David say the government started with 70 and 100 million and whatever in the *Four Pillars* case and then they compromised down to 36 million and the defendants were at zero loss. The civil case came out at a number that nobody was using in the criminal case, some 20-odd number, trebled. So, it is like to make restitution, the judge would be forced to go through the exercise of putting reality in terms of actual numbers, defendable numbers. And I think often that would work to the defendant's advantage.

Now, there may be times when it does not. All these things are subject to the specifics of the case. In fact, in the *Four Pillars* case, using a pure restitution approach, the judge ordered zero restitution in *Four Pillars* because the only damage that was provable accrued from acquitted conduct, I think.

So, they said, "Well, wait, you don't get restitution for what you were acquitted on." So, now, that is an extreme example, but maybe in the middling example there would be something where a judge would find restitution as a theoretical matter, whether it actually has to be paid or not, and then use that to drive the loss figures. Again, there are some advantages on just a procedural level to getting the judges to think about what is the real loss, what is the real harm and what is the restitution, what is directly and proximately harmed? None of this amorphous stuff. It focuses the judge back on causation issues.

Finally, if there is a dispute as to the amount, the burden is, again, on the government to clarify that amount. If they don't carry their burden, that doesn't mean it isn't true or a fact. It just means that we're in courtrooms and we're lawyers. And the government has that burden, and the case law reflects a certain notion that we're going to ascertain and delineate an accurate computation.

And you do not want a loss figure that is more than the loss that was actually caused, and it has got to be supported by evidence. I'll go back to the copyright case as sort of the extreme example, but as Paula was mentioning, the motion picture industry and all these people are totally wound up about the way loss is calculated, the retail value times the number of infringing items. So, prove it. Like, if they had to come into a courtroom and prove on a restitution-type basis: "Look, this is what this cost us. The guy gave away a million Disney movies, and we can prove to you that all million of those people would have bought all those Disney movies at retail prices or rented them down at Blockbuster." And they never can because that is not the economic reality of these crimes—which is not to say they are harmless.

It is just to say that all the traditional methods that have been adopted for valuing this thing are, on an intellectual level, wrong. And the guidelines system has not accommodated for that, and so we've got to find arguments for judges where they can look at this through a different framework. So, again, you take the copyright example, it makes the judge think, "Now, wait a minute. I'm sitting here for restitution purposes. I can't prove a single thing where these guys are hurt."

And you say, "Now, Judge, let's move to how long the guy should go to jail for not hurting anybody," I mean, just to frame the argument. So, that's all I've got to say. Basically, I like David and Carla. They do their best.

MR. GREEN: All right. Why don't we take questions? If you don't have a question, you may even have an insight. We will accept insights, as well.

I would like to make one response to some of Joe's points. I think there is a lot here in terms of what you do when you don't know, and that is going to be the issue in this kind of case. And I do think the sentencing guidelines are built for people stealing Chevys. You stole the Chevy. Now, I don't have the Chevy, and he has got the Chevy, and even if he takes the Chevy and he is caught just as he is about to drive away, we can still say, "Well, he meant to take the Chevy, and here is how much the Chevy is worth."

But when you get into these more esoteric areas, which are harder areas for trying to figure out loss—which is what we're talking about this morning about computer crimes, the intellectual property crimes and these crimes—I think you have the same kind of thing. Certainly, the government doesn't shy away from taking the burden of proving to some reasonable degree of certainty: "Hey, this is how much the value of the trade secret was." And we would call Carla or one of her colleagues and say, "This is how we do it. This is how we come up with a number." Yes, people can dispute it, but you make these decisions like everybody else.

On the copyright question that Joe ended with, we, of course, are going to be in a situation where Disney cannot call all the people who downloaded and quiz them and ask, "Would you have bought this if you had not downloaded it for free?" And they could say either "yes" or "no." So, the question is: when you have a situation where you're not going to know the answer, where should the burden fall?

And I think there is a reasonable argument to say the person who intentionally violates the law or willfully violates the law will bear the burden where we cannot decide. Where we have no empirical means of deciding, they will get more hurt than the people who don't bear the burden.

MR. SAVAGE: David, that is reminiscent of the judge in Seattle who was once quoted as saying to a defense attorney, "Look, this statute has a maximum penalty. Tell me why I shouldn't give it." It is like where do you start in these things, and it seems to me if you have got a guideline system that has jacked-up numbers, it is not like you're sitting in an area where a judge has complete discretion. And then you might say, "Hey, defendant, you got yourself into this position. It's your responsibility to now convince this judge that you now deserve a break."

MR. GREEN: But that is the situation now with the current IP guidelines. If you are making the distribution of Microsoft products available online, you will be penalized based on the number of copies that the government can prove were made multiplied by the retail value without forcing the government to undergo the impossible task of proving that each of those people would have otherwise have purchased the legitimate item.

QUESTIONER: In the context of what we heard yesterday and some of today, it sounds like you'd be going in two different directions, where you're going to have sort of the lobby for each type of crimes—the big industries who are hurt come in and come up with a system like with the Copyright and Intellectual Property Act. That took two years of Commission staff trying to come up with that.

That kind of flies in the face of this plea for simplicity that we hear constantly—of having a general way of approaching it. Otherwise you're going to have specific types of calculations. I've been involved

with something else that made seem a little arcane to many of you, but to me is very similar. What about valuing cultural artifacts and priceless archeological heritage items and burial sites?

They seem like insignificant crimes, but they aren't. They are crimes, and yet nobody can value those because they have no value. So, does the culprit walk away again because there is no loss? Again, you want all these specific types of calculations that you might find in a civil context constantly coming into the guidelines.

I have been at the Commission for a couple of years, but I've never really cared for civil law. I've seen all this civil stuff kind of creeping over and creeping over, and it makes my hair stand up.

QUESTIONER: Isn't this a fundamental problem with the guidelines? It is that you are trying to take a very complicated matter, which is trying to assess harm, not just economic harm, but real harm as a result of crime, so that you can establish an appropriate level of punishment.

And the problem that I have seen is that there is this real desire to simplify, and it was very eloquently stated yesterday and captured me for awhile until I started to realize, "Well, this isn't a simple prospect. It's an enormously complicated prospect, and what we have tried to do very often is simplify it so that we can make it certain and uniform over something that is not uniform."

We're trying to make a one-size-fits-all, and the whole subject of the measure of loss seems to say loss is something we can add up; we can add it, and we can subtract it. It is a number. We can look at it. We can get our arms around it, so let's apply it. And there are so many times when it does not accurately reflect what the harm is.

One of the great examples in one of your earlier sessions today was where somebody was talking about use of a computer and getting two points. Well, that is not the problem of using a computer. The problem is avoiding detection. So, let's make it avoiding detection problems.

Now, I sympathize with the Commission staff for having to work for two years to come up with a specific guideline for a specific area, but with all due respect, once you start down the road of guidelines, you're in it and you are going to have to do it.

QUESTIONER: If Economic Espionage Act had enough cases or if there was a constituency loud enough, then you'd be working to flesh out details like you just did on the intellectual property laws. And then you will have another complex set of calculations that probably are unrelated to something else. That is what is happening, and then you get congressional directives.

MR. SAVAGE: I think there are two very different worlds of EEA cases. There is the *Four Pillars* case, which is company versus company, and that is thought of as one way. Most of the rest of the other cases—I mean, the first one they ever did, the Pittsburgh Plate and Glass case—I call it Darryl and his brother, Darryl—I mean, one guy is a janitor and the other is his brother, and they came into something and they called the president of Owens Corning and said, "We've got something. You want to give me a thousand bucks for it?"

It seems to me that those deserve very different sentencing treatments and are not at all reflected in these loss tables or the value. David has a lot of detail on the Intel case where the guys got a fabulously

valuable piece of information, but it is not that valuable to him, and he's not going to benefit from it like that, and he doesn't intend to hurt that way.

QUESTIONER: That raises a question that we've been struggling with for the last three or four hours, and it has to do with this intended loss issue. In one sense, you want to punish the defendant for what he intended, and one of the judges in a breakout session said, "I want to deter conduct. If he thinks is going to make $500,000 from it, it doesn't matter that it's worth $10 million. I want to deter somebody from making $500,000."

But the point from earlier today was that we want to deter the conduct. The conduct is stealing. And you take it as you find it. If you steal something that is worth $10 million, that is the risk you take when you steal. We should use your actual, not your intended, loss. I'm most curious to see what people think about that, whether we think we should be punishing based on intended loss or actual loss, especially in these types of cases where we have Darryl and his brother, Darryl, really only intending a $10,000 gain or a $100,000 gain.

MR. SAVAGE: Again, it's not so simple. I'm not so sure there is an "either/or."

MR. GREEN: But even in the Darryl versus Darryl case, if he had taken that and brought it to the intended beneficiary and they had said, "Hey, this is great stuff. Here is $10,000. We now have the key trade secret to Pittsburgh Plate and Glass." And we brought along Carla and she said, "Yeah, that trade secret in the hands of this company would be worth $10 million," then where do we put that in the sentencing guidelines?

MR. SAVAGE: It is very interesting because that's the thing you guys ran into in *Four Pillars*. Dr. Lee, amazingly enough, had a different numerical calculation for loss that turned out to be way lower because, you know, Dr. Lee was on the home team in time before *Four Pillars* and the other guys weren't. Or maybe it was that Dr. Lee, just being the middleman, did not intend as much loss or did not get as much gain and maybe the real corporate competitor was the bad guy.

But it seems to be the government's view that, at least—and I don't know that analytically I disagree with it—various participants along the way could have different values of loss assigned to them, which clearly doesn't fit with Carla's world of "how much profit, how much replacement cost, how much R&D?"

MR. GREEN: We had a question.

QUESTIONER: I would just like to introduce a different topic. Can the panel comment at all on the conditions for determining whether something qualifies as economic espionage?

MR. GREEN: Well, I think "reasonable" will always be a term that doesn't have to be perfect; it has to be reasonable. But I think it does change with time. For example, stuff stored on your computer, I think now we would ask the questions, "Well, was it encrypted? How did somebody get into it? Was it an insider who you're not going to be able to defeat because you need to have people get access to the computer, or did it come from the outside in a very simple method? Did you have things like nondisclosure agreements, if it was to a third party? Do you have policies in place?"

QUESTIONER: Any comments on how the new technology changes the face of some of these things?

MR. GREEN: For us prosecutors, we're asking those questions. We're saying we have to prove to a jury that this is reasonable. "What measures did you take to protect it?" And if they say, "Well, none, but we hoped that they knew that this was wrong," we're going to evaluate that in deciding whether to bring the case.

MR. SAVAGE: I think that's an interesting part of the statute, actually, because it seems to me to raise the possibility that I could take something because I think they haven't taken reasonable protections to protect it. I don't think I'm stealing a trade secret because they leave it laying around or maybe they just don't encrypt it.

MR. GREEN: We should break now. Thank you very much, everybody. It was a very interesting discussion.