FEDERAL TRADE COMMISSION

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FEDERAL TRADE COMMISSION

In the Public Hearing on:)
COMPETITION AND INTELLECTUAL)
PROPERTY LAW AND POLICY IN)
THE KNOWLEDGE-BASED ECONOMY.)
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WEDNESDAY, JULY 10, 2002

Room 432
Federal Trade Commission
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Washington, D.C.

The above-entitled matter came on for public hearing, pursuant to notice, at 9:45 a.m.

WORKSHOP CHAIRPERSONS:

HILLARY GREENE, FTC
WILLIAM COHEN, FTC
FRANCES MARSHALL, DOJ
EDWARD POLK, PTO

PANEL ON: FEDERAL CIRCUIT JURISPRUDENCE: SUBSTANTIVE TRENDS AND ANALYSIS

PANELISTS:

DAN L. BURK, Julius E. Davis Professor of Law, University of Minnesota Law School

ROCHELLE C. DREYFUSS, Pauline Newman Professor of Law, New York University School of Law

JOHN F. DUFFY, Associate Professor of Law, William and Mary School of Law

STEPHEN G. KUNIN, Deputy Commissioner for Patent Examination Policy, United States PTO

GLYNN S. LUNNEY, JR., Professor of Law, Tulane Law School

F. M. SCHERER, Roy E. Larson Professor of Public Policy and Management, Harvard University

GERALD SOBEL, Kaye Scholer LLP

HERBERT C. WAMSLEY, Executive Director, Intellectual Property Owners Association

P R O C E E D I N G S

MS. GREENE: Good morning. On behalf of the Federal Trade Commission and the Department of Justice, it's my pleasure to welcome you to the first of two days on Federal Circuit jurisprudence.

Previously, we discussed how patent law implicates a complex cast of institutional characters, including the Federal Circuit, the PTO and Congress. Today's focus will be primarily on the Federal Circuit's affect on the substantive trends and analysis of patent law. Tomorrow, the focus will be largely on antitrust law, choice of law and jurisdictional issues.

Before moving into the substance of why we're here today, let me do some brief introductions. My name is Hillary Greene, and I'm in the General Counsel's Office here at the FTC, and the Project Director for IP.

To my right is Bill Cohen, who is the Assistant General Counsel for Policy Studies in the Office of the General Counsel.

To his right we have Francis Marshall, who's an attorney at the U.S. Department of Justice, who's headed up their team on these joint hearings.

Then to my left we have Ed Polk, whose children are safely off to school, and who is an Associate Solicitor

for the PTO and who has been a repeat performer. Thank you for joining us again.

Obviously, we're all here because of today's extraordinary panelists. Many, if not all of you, don't really need an introduction because your reputations precede you. But it's been our sense that once we get done with the introductions, the moderators lose complete control, so I'm going to just line up all the panelists in a row and just run through introducing them very briefly.

We have Dan Burk, who is Julius E. Davis Professor of Law at the University of Minnesota, where he holds appointments at both the law school and the center for bioethics. He is an internationally prominent authority on the law of IP, specializing in areas of cyberlaw and biotechnology. He teaches courses in copyright, patent, biotech law and is the author of numerous papers on the legal and societal impact of new technologies.

Then we have Rochelle Dreyfuss, who is the Pauline Newman Professor of Law at New York University. Her research and teaching interests include intellectual property, privacy and the relationship between science and the law.

Prior to entering the legal profession, she

spent several years as a research chemist. She is currently a member of the National Academy of Sciences Committee on Intellectual Property Rights in the Knowledge-Based Economy. Most importantly for my completely selfish purposes, she is a consultant to the Federal Trade Commission for these hearings.

So I think you should work under the assumption that if something went well, she might have had something to do with it, and if it didn't go well, it's because we didn't ask her or we didn't listen, so full disclosure.

Next we have John Duffy, who is an Associate Professor of Law at William & Mary School of Law, where he teaches and writes in the fields of patents and administrative law. He is a registered patent attorney and he has written a new case book on patent law, we are looking forward to seeing it. It's called Patent Law and Policy, and the co-author is Rob Merges.

I guess more importantly, you are a brand new dad yet again. So I'm grateful for you joining us.

Now, we have, fortunately, Steve Kunin, who we didn't think we would get this morning, but we're delighted to have. He's the Deputy Commissioner for Patent Examination Policy at the U.S. Patent and Trademark Office. He's served in this capacity since

November of 1994.

In this capacity, he participates in the establishment of patent policy for various patent organizations under the Commissioner of Patents, including changes in patent practice, revision of the Rules of Practice and Procedures, and establishment of examination priorities and classification of technological arts.

Next we have Mike Scherer, who is the Aetna Professor Emeritus at the John F. Kennedy School of Government at Harvard University. I'm sure that the high point of his distinguished career was from 1974 to '76, when he was here at the FTC as the chief economist.

Obviously he's done a few other things since then, while pursuing his research specialities in industrial economics and the economics of technological change. He's written far too many things to mention so just let me say this: When I was trying to convince Professor Scherer to join us, I tried to sweet talk him. My line was something like: But you have to come here, it's your fault that we're having these hearings. His response was, Don't blame me.

So I've gone back, and I've done research, and I think, in fact, a lot of the blame does lie with you

in terms of creating some of the intellectual foundation, which has shaped much of today's inquiry. Invariably, when people talk about seminal pieces dealing with the relationship between innovation, IP and competition, your works are mentioned.

Next, will be Gerry Sobel. I'm going to hold off introducing him until he joins us later today.

We also have Herb Wamsley, who has been the Executive Director for the Intellectual Property Owners Association since 1983. The IPO is a trade association that serves approximately a hundred large companies, along with small businesses, universities and individuals who own patents, trademarks, copyrights and trade secrets.

In 2001 he was named by Legal Times as one of the 22 individuals who are making a difference in the way intellectual property is protected today.

Two things characterize today's panelists. Obviously, one is their incredible caliber. We've really gotten the best of the nation's scholars and practitioners. The second thing, what really amazes me, is they were all willing to come to Washington, D.C., during the summer. I'm grateful for that.

Just let me say that I realize that the trip here was not easy for a lot of reasons, ranging from having newborn children at home, to people having to cut

vacations short, as well as just the rigors of travel, so I'm very grateful that you all took the time to be here.

With it clear that I'm grateful that you all are here, let me explain how we want to put you to work.

We've conducted more than I think it's 30 public hearings in the six months since our hearings first began back in February. What we need to do is continue on with the process of integrating what we have learned, and while that sounds a bit pat, it really speaks a lot to what we are seeking today.

What we hope to do today is to bring together two powerful themes which have been running throughout the hearings. One is looking at sort of the institutional dimension, typified by the Federal Circuit. The other of which is the role of social science, mainly economics.

To grossly oversimplify, what we need to do is systematically understand what the Federal Circuit has been doing. By that we mean identify the substantive trends, and then we want to normatively assess those trends, and economic analysis provides one mechanism for doing so, and that's what we have planned just for the morning.

Then in the afternoon, we're going to revisit these general themes, but within the context of several specific examples, and how the development of patent law and economic analysis fit together is exemplified by questions such as whether the placement and weight, the legal presumptions or burdens applied in granting or litigating patents, reflects proper assessments of the trade-offs that adhere in the patent system.

With that as a brief intro, I want to turn the floor over to Herb Wamsley, who will give a brief presentation laying out some of the trends.

MR. WAMSLEY: Thank you. I appreciate the opportunity to be here.

What we're talking about in this session is substantive trends and analysis. I'm going to be talking more about trends and less about analysis. But to get things started off, we thought it might be helpful to hear my perspective, at least, on what's been happening at the Federal Circuit recently. By recently, I'm using the period of about the past five years.

I'm not a professor. I have not written so widely as some of the others. I picked the past five years because, in our association, one of my advocations is to read all of the Federal Circuit cases as they come down and do a very brief one paragraph summary of each

case. I've been doing that for five years, and I have read about 750 precedential patent and trademark opinions of the Federal Circuit during that time.

Looking at those cases, I came up with five trends that I would like to go over with you as to what I see is happening in the court, in a general way, without getting into too many technical details. The first four of those, I will go through pretty quickly. The fifth one, I'll talk about a little bit more.

The five trends that I have discerned in the past five years of Federal Circuit cases are: One, the Federal Circuit has issued more antitrust opinions that have attracted attention. Two, the Federal Circuit has attempted to narrow the doctrine of equivalents. Three, the court has published a very large number of opinions on patent claim construction. That has been their most popular single topic recently. Fourth, the court has issued fewer fraud and inequitable misconduct opinions in the past five years than in the previous times. Finally, in a line of recent cases, perhaps still emerging, the court appears to be imposing a greater evidentiary burden on the U.S. Patent and Trademark Office to explain its finding of obviousness.

Deputy Commissioner Kunin may have more to talk about on that topic and others later, but let me briefly

run through the five trends.

More antitrust opinions that have attracted attention. Actually, the number of opinions in the antitrust area out of the Federal Circuit is a pretty small, when you compare it with their patent opinions and may be smaller after the very recent by the United States Supreme Court in the Holmes Group case having to do with jurisdiction, which is more of a topic for tomorrow, but the court has decided a number of cases that have attracted attention.

In '97, they decided the Virginia Panel Corporation case, which overruled a lower court finding of a Sherman 2 Act violation involving threats to enforce a patent. Also in '97, they decided a case having to do with post-sale restrictions and said those were not necessarily improper.

In '98, they decided en banc the Nobel Pharma case, which had to do with choice of law. In that case they also decided, under the facts of that case, that bringing a suit on an invalid patent that was invalid because of an intentional failure to disclose the best mode was not an antitrust violation.

In the Bard case, in 1998, they decided that there was an antitrust violation in the situation where the patent owner had redesigned a biopsy gun to prevent

competitors' needles being used with the gun.

Finally, it is the last two perhaps that attracted the most commentary. The Intergraph Corporation case in 1998 overturned a preliminary injunction preventing Intel Corporation from cutting off benefits to a customer that had sued it for patent infringement. The CSU versus Xerox case, decided in 2000, where the Federal Circuit, splitting with the 9th Circuit, held Xerox Corporation could refuse to sell patented parts used in servicing copying machines.

The trend there is that, while I'm not sure that the number of cases decided in this five-year period involving antitrust issues was larger than in some earlier five-year periods, these cases attracted more attention.

The narrowing of the doctrine of equivalents. It became apparent, at least as early as 1995, that a number of judges on the court felt that the doctrine of equivalents in patent cases was out of control. They felt that the doctrine was interpreted much too broadly. Some seemed to want to do away with the doctrine of equivalents, which has its basis in the line of Supreme Court cases. The 1950 Graver Tank case was the one most frequently cited before the recent cases.

In the Graver Tank case, it was the function-way-result formulation of the test they used. Basically, the cases had decided that if your patent is not literally infringed, you can still have an infringement under the doctrine of equivalents, if the differences between your claim and the accused your device are insubstantial.

Some of the judges of the court seemed to call that law into question in dissenting and concurring opinions. The Hilton Davis case in 1995, a little more than five years ago, was an en banc opinion with several dissents and concurrences. That case went to the Supreme Court, and it was decided in 1997 under the name of Warner-Jenkinson Corporation v. Hilton Davis Chemical Company. The Supreme Court confirmed the continued applicability of the Graver Tank case and, in my judgment, provided little new guidance.

Since the Warner-Jenkinson case by the Supreme Court, I believe there has continued to be a trend in Federal Circuit opinions to interpret the doctrine of equivalents narrowly. The case that recently has received a lot of publicity is the Festo case. It was decided by the Supreme Court this year, overruling the Federal Circuit and rejecting the so-called complete bar

rule that the Federal Circuit had formulated for a situation where the claims of a patent have been amended during the prosecution in the Patent and Trademark Office.

The Supreme Court instead has adopted a rule that the patent owner has the burden of proving that the amendment made in the Patent and Trademark Office did not surrender the full scope of the patent or the claim beyond the literal meaning.

I believe the Federal Circuit still is intending to interpret the doctrine of equivalents narrowly, and the very recent Cooper Cameron Corporation case this year, they took a strict interpretation of the all elements rule. That's the rule that doesn't allow elimination of a claim interpretation entirely when applying the doctrine of equivalents.

Another important case, again this year, is the Johnson & Johnston case. An en banc opinion by the Federal Circuit several weeks ago, in which the court held that there is no doctrine of equivalents for disclosed but unclaimed subject matter.

A third trend is the very large number of published opinions on patent claim construction. Patent claim construction, of course, has always been something that the Courts have struggled with. Patent owners and

businesses, competitors of patent owners are generally seeking certainty. They're seeking precise information on the coverage of patents.

I think the trend over the last five years started with the Markman decision by the United States Supreme Court in '97, in which they affirmed the Federal Circuit on the proposition that construction of patent claims is exclusively within the province of the court.

Since the Markman case in '97, the court seems to have made an effort to expound on claim construction rules in a large number of precedential opinions. I've seen many opinions where there seems to be nothing else about the case that's notable, and perhaps there is no new rule of law, but the court has elected to declare the opinion a precedential opinion rather than unpublished, non-precedential because the opinion goes into the facts of the case, explains at some length how the Federal Circuit arrived at its construction of the patent claims.

An important case was the Vitronics case in which the court, the Federal Circuit perhaps first laid down clearly the rule that in construing the claim, you have to look first to the so-called intrinsic evidence. That evidence is the language of the claim itself, the specification of the patent, the written description

that is, and the prosecution history in the Patent and Trademark Office that is of record. You look at the extrinsic evidence only if the intrinsic evidence doesn't give you clear guidance.

The court, even this year, has continued to publish a great many or quite a number of cases expounding on claim construction rules. For example, in the Beckson Marine case this year, they dealt with the issue of whether limitations from the specification patent had been improperly imported into the claim to narrow the claim beyond the ordinary language of the claim. This is an issue that's come up in a number of cases, and one in which some commentators have said that the court has not been entirely consistent.

In the Marketing International case, also this year, they dealt with the issue of whether a statement of intended use in the preamble of the patent claim is a limitation in the claim. In that case, they decided that the statement of intended use in the preamble was not a limitation that narrowed the claim.

Then in the CCS Fitness case this year, they dealt with the common issue of whether words in the claim are to be given their ordinary meaning or a specialized meaning that may be discerned from the evidence. In the CCS Fitness case they were dealing

with the claim term "member," and they stressed that a term in the claim will be presumed to have its ordinary meaning, and that's the rule they followed.

There are a number of other cases, but in order to keep moving along, my fourth trend, which I don't have very much to say about, is that there are fewer fraud and inequitable conduct opinions of the court in the past five years. If you go back to the time when the Federal Court was created in 1982, allegations of fraud and inequitable product in patent cases were rampant.

The most common type of fact situation in those cases would be where the accused infringer alleged that the owner of the patent had improperly withheld information, relevant prior art, from the Patent and Trademark Office during the prosecution of the patent application, and because of this inequitable conduct, the patent should be held unenforceable. In one early case in the Federal Circuit, the court called the allegations of fraud and inequitable conduct a plague on the patent system.

Many commentators agree it has become a practice to include boilerplate allegations of fraud and inequitable conduct by defendants in nearly every patent infringement case. Now, the trend that I perceive is

that there are noticeably fewer opinions by the Federal Circuit in the past five years even dealing with this issue.

There are still opinions. For example, in the Aptix Corporation case this year, the court, in a split panel opinion, decided that fraud by the inventor during one patent suit does not render the patent unenforceable in other litigation. They relied on an old Supreme Court case in 1933, the Keystone case.

In another fraud case this year, Semiconductor Energy Laboratory, the court found an inventor guilty of inequitable conduct for submitting misleading partial translations. Actually that case, the Semiconductor Energy Laboratory case, was in 2000, and there was another case this year on misleading partial translations going the other way.

So the cases are still coming up. I would speculate that the court, over the years, has clarified the law as far as the requirements for materiality and intent in fraud and inequitable conduct cases, and we don't see as many people raising complaints of that nature now, and that's not a hot issue.

My final trend, the greater evidentiary burden on the Patent and Trademark Office to explain findings of obviousness. Now, obviousness, of course, Section

103 of the Patent Act is really the heart of the patent law, the requirement that if the invention sought to be patented is different from the prior art, that you can only get a patent if the differences would not be obvious to one of ordinary skill in the art.

The seminal case is the Graham case, the Graham opinion of the Supreme Court in 1966. The Graham court said that decisions on obviousness and nonobviousness are to be based on factual findings. The Supreme Court said that the decision maker has to assess the scope and content of the prior art, determine the differences between the prior art and the claimed invention, and assess the level of ordinary skill of those in the art.

Now, I'll mention briefly three recent opinions of the Court that perhaps are evidence of a trend. In the In re. Kotzab case in 2000, the court overruled the U.S. Patent and Trademark Office Board of Appeals in a decision where the Board had rejected Kotzab's claims as obvious.

The invention there was that Kotzab used a single temperature sensor to control a number of valves. The prior art showed using more than one sensor. The Patent and Trademark Office rejected the claims as obvious. There was a single piece of prior art here. The Federal Circuit decided that there was

not sufficient evidence coming up to the Federal Circuit from the PTO of obviousness.

They approached the case from the requirement that they had enunciated in some earlier cases, that the obviousness standard has to include an assessment of whether there is a motivation, a motivation to modify the prior art reference or references to obtain the claimed invention.

The requirement for motivation was not new to the Kotzab cases. But, it appeared to me, that this perhaps was the beginning of a line of cases requiring more specific evidence in the Patent and Trademark Office, more specific evidence of what the motivation is for combining the references in order to sustain a Section 103 obviousness rejection.

The next case was the In re. Zurko case, which had returned, after being at the Supreme Court, on the issue of whether the Federal Circuit was using the proper deference standard in deciding appeals to the Patent and Trademark Office.

Before the Zurko case, which the Supreme Court opinion is Dickinson v. Zurko, before that case, the Federal Circuit had applied the clearly erroneous test, the Supreme Court ruled that the Federal Circuit was bound by the Administrative Procedure Act. The Zurko

case then came back to the Federal Circuit.

In the meantime in another case, the Federal Circuit had decided that they would interpret or that they would follow the APA by using a substantial evidence test.

Now, in the Zurko case, having to do with my emerging trend, the question was substantial evidence from the Patent and Trademark Office of whether a claim for a method of creating a more secure computer environment was obvious.

There were two prior art references in that case. According to the Federal Circuit, the US PTO misread the references, and the Patent and Trademark Office Board of Appeals failed to point to concrete evidence in the record of any motivation for one skilled in the art to combine the references to obtain the claimed invention.

This year, the very recent In re. Lee case in January, similar issue. Again, the Federal Circuit said that the PTO had not provided the necessary evidence of motivation. They rejected the Board's statement that it would have been common knowledge and common sense to combine the references. They said that the Patent and Trademark Office must set forth the rationale for why one would combine references to find the invention

obvious.

Now, I'm almost at the end of my dissertation. Mike, could we have my one slide?

The question I raise is: What is the meaning of this trend of requiring of a higher evidentiary bar, if you will, requiring more evidence from the Patent and Trademark Office, and is that having an affect on the Patent and Trademark Office?

Now, I don't know if you can all see this slide, but I plotted information that I obtained from the Patent and Trademark Office on the percentage of cases that the Patent and Trademark Office Board is affirming, the percentage of cases in which they affirm the examiners, over the period from 1980 to 2002, and the percentage of cases in which the Board reversed the examiner.

These numbers don't add up to 100 percent for a few reasons, but the lines show a dramatic drop in the number of cases in which the PTO Board affirmed the examiners, starting in around 1999.

Now, does this have anything to do with what's going on at the Federal Circuit? I'll leave that for possibly more discussion later in the day, but I think there possibly is a connection here between the Federal Circuit decisions and what's going on in the Patent and

Trademark Office.

One possible explanation is that the Board has begun applying the higher evidentiary standard of the Kotzab, Zurko and Lee cases, the examiners are not applying that standard yet, and a lot of them are being overruled by the Board. Very, very few of these cases actually go to the court. It's expensive to take ex parte cases to the court. It's hard to do a meaningful statistical analysis of appeals, I think, from the PTO to the court.

The number of cases at the Board, however, is much larger. We're talking about cases in the thousands per year, but there are other explanations. The Patent and Trademark Office has, in recent years, hired a great number of new and inexperienced examiners as a result of the explosion in patent filings.

Of course, there's the question of whether the Federal Circuit law is correct, if that is a new line of law. I think there are arguments pro and con there. By raising the evidentiary bar, the Federal Circuit has not necessarily made the obvious standard softer or weaker. The Federal Circuit perhaps is just trying to require the Patent and Trademark Office to put the evidence on the record, make a reviewable record, bring more certainty to this important decision making in the

obviousness area.

I won't speculate further on that because I have gone over my time. Thank you for listening to my perception of the trends.

MS. GREENE: Thank you very much, and sorry for having to start us off a bit late today, so in response to your five trends, which thank you very much for laying out for us, I know that there's lots of people that have lots of comments to make based on them, so I'm just going to throw out five general questions, and then I would like everybody just to just chime in as they see fit. First of which is obviously what, if any, additional trends do people want to be note as being most important?

You prefaced it by saying you were going to focus on the previous five years, and, of course, you actually went back further than that. But I'm curious as to whether there are any trends that emerged, particularly in the early days of the Federal Circuit, that are of particular importance and that we don't want to miss?

The second question is: To what extent, if at all, are these trends emerging in ways that are, in some way, industry specific? How do you figure in the fact that, in theory, you have a one-size-fits-all system with the fact that industries have different

characteristics?

Also, you alluded, at the end, that you had some statistics, and you said it's hard sometimes to get a full sense of what the statistics reveal because there's all kinds of gaps and that type of thing. So I just want to throw out: How do we know what we know in terms of gathering the empirical evidence and what can we do to better identify the trends?

Lastly, also you alluded to, at the end, the institutional dimension that we had touched on briefly at the beginning. You have the PTO and the Federal Circuit, and basically I'm just curious as to what is it about the institution of the Federal Circuit that results in these decisions coming out this way? Obviously, we want to focus on the obviousness test when discussing that.

Any initial comments?

PROFESSOR DREYFUSS: As you see the Federal Circuit basically making it easier to get a patent because of the changes in the standard of obviousness, do you see the court explaining why it's doing what it's doing at all?

MR. WAMSLEY: Well, I'm reverting to just being another panelist now. I think in the recent cases, the Federal Circuit has put it more in terms of needing to

have the evidence in the record. I don't think the court opinions are addressing whether they're trying to raise or lower the obviousness standard.

MS. DREYFUSS: I'm thinking about the biotech cases rather than the ones that you were talking about, the biotech cases.

MS. GREENE: Housekeeping. If you want to make a comment, just turn your table tent up and jump in. Steve?

MR. KUNIN: I think Rochelle does raise a good point. One of the clear trends, which I think we do see, is as you pointed out, Hillary, that there is a tendency to have some industry specific components.

It's my observation that what the court has done, especially in this interface between 112 requirements and 103, in the field of biotechnology, in particular, what they have done is they've made it fairly easy to pass muster under Section 103.

A couple cases, I'll name three cases in particular, which I think are representative of that trend: the In re. Bard case, In re. Dual and In re. Bell, where the requirements for showing obviousness is structural similarity as well as motivation. The reason I raise those cases is because our foreign counterparts have essentially just the opposite standard of

patentability on showing inventive step in those very similar type of fact patterns.

Conversely, with cases like Fiers vs. Revel, Regents of California and Eli Lily, and the most recent case, Enzo v. Gen-Probe, the Federal Circuit has created a very substantial 112 first paragraph requirement, particularly with respect to biotech cases. That has created essentially this whole new body of law as against original claims and has essentially, I think, made it more difficult for applicants, in preparing their cases, to meet the requirements of 112 first paragraph, whereas on the standard of showing what is patentable under Section 103, I think it is easier to establish that something is nonobvious, particularly in the biotech field.

I think we see a clear trend in that area of industry specific changes in the standard.

MS. GREENE: Dan?

PROFESSOR BURK: I wanted to follow-up on those comments by Rochelle and by Stephen and then come back and ask maybe a little bit different question of are Herb Wamsley.

I think the trends that they're talking about are correct. If you think about it, the Federal Circuit has a series of policy levers it can use to modulate

the scope of protection for a given industry. So, as Stephen has just described to you, for example, they have lowered the bar pretty clearly in biotech for the obviousness standard, making it relatively easy to get a patent. At the same time, they seem to be using section 112 to narrow the ability to get a patent. So that the rule seems to be, in biotech, everybody gets a patent, but nobody gets a very broad one.

(Discussion off the record.)

PROFESSOR BURK: So the rule seem to be in biotech, everybody gets a patent, but no one gets a very broad one.

In other industries, I'm going to suggest this afternoon talking more about 112 the trend seems to be different. I have mentioned in some of these hearings before, for example in software, the rule seems to be very few people get a patent, but if you get one it's an really extremely broad one.

We may be identifying a number of these policy levers as we're talking here. They can use the doctrine of equivalents to modulate scope. They can use contributory infringement, as Judge Rich pointed out many years ago, to modulate the scope of patents. So the question really is, are they using the right tools for any given industry for what they're going about doing?

So, I think those comments are correct, and part of the inquiry may be, is it good to use 103 in one case, or is it better to use 112, or is it better to use the doctrine of equivalents, or use something else for that given type of technology?

The other question that sort of struck me, as Herb was talking, and I wonder if he would mention this, I'm trying to think back what the five-year cut off would be for some cases. Since one of my current obsessions is patent misuse, I'm guessing that you're lumping patent misuse cases in with your antitrust cases. Because it seemed to me there was sort of a clear hostility to the misuse claim and quibbling away at it in the Federal Circuit, if I'm thinking about the right five years here.

MR. WAMSLEY: Well, on that, I think several commentators have perceived a hostility to the misuse claim. As to whether that is really a difference in law or trend in any way or whether it's some dicta that appeared in some cases, it was hard to tell.

MS. GREENE: All right. Glynn?

PROFESSOR LUNNEY: I'm going to be talking this afternoon about some of these trends as well, certainly on obviousness and some of the other issues. But let me just say that I think everyone agrees that the Federal

Circuit -- part of the reason it was created in 1982 was to render patents somewhat more enforceable than they had been before.

I think there was some perceived hostility among the circuit courts towards patents. I think there was one circuit that hadn't held a patent valid and upheld a patent as valid in something like 50 or 60 years. So the Courts were very suspicious of patents, and the Federal Circuit was created, in large part, to replace that suspicion with a forum that was at least neutral, if not somewhat in favor of patents. I think the Federal Circuit has lived up to that reputation, and we're seeing some of that.

Now, one of the themes I think that the Federal Circuit is trying to pursue in trying to make patents less of a monopoly right presumptively and desirable and more an ordinary property right is to maybe have a system where you have presumptive validity. So it's relatively easy to get a patent for your particular invention, whatever you contribute, but the scope of the patent is going to be narrow to your contribution. So I think that there are themes behind some of these trends that we need to be focusing on, and I think that may be one of them.

MS. GREENE: It's so nice of you to speak, even

though I didn't even bother to introduce you. Is that right? Glynn Lunney, Professor of Law, Tulane Law School. Anything else you can add?

PROFESSOR LUNNEY: I don't want to give my talk away, or else no one will come this afternoon.

MS. GREENE: I'm sorry for skipping over you. One of the things that I want to try to do, as we keep going, is to sort of tease out, what Herb did was very clearly describe what he perceives the trends to be. Then you have a second level of analysis, which we're clearly getting into which is to understand the trends, which goes to what Rochelle said, which is, to what extent is the court articulating the rationale behind why they are doing what they are doing.

Then we need to get into sort of the third level, which would be to normatively assess what we think of that. That's where we're going to try to integrate economics and see what that can bring to the mix, and on that note, Professor Scherer?

PROFESSOR SCHERER: I guess my formal statement will be later in the day, but let me take out a couple of pieces from it and give myself more time later on perhaps.

MS. GREENE: Absolutely.

PROFESSOR SCHERER: Trends that have happened.

One is, statistically it used to be, before the Federal Circuit came into existence, about two-thirds of patents that were litigated were found either invalid or not infringed or both. Two-thirds of the cases, the patent holder lost. That has nearly reversed since the Federal Circuit.

Second, the Federal Circuit imposed new standards for inferring damages, essentially an opportunity cost standard of damages, which has led to extremely high damage awards in a substantial number of cases. And, I guess I'll leave this out of my testimony this afternoon, but it has made inventing somewhat like dancing through a mine field, in which there are so many patents out there, and their validity is so uncertain and their power is so uncertain, that you run a very substantial risk of treading on one and having a leg blown off. This is a detriment to innovation, all else equal.

Now, why did this happen? Let me just take one other piece out of my testimony. First of all, I was told by a member of the Judiciary Committee Staff at the time that the Federal Circuit was created that the Congress had no intention, whatsoever, of changing the substance of patent law.

To be sure, they wanted more equality among the

various appellate courts by creating one, but they did not have in mind to change the substance of patent law. But in creating a court like this, Congress ignored one of the best known pieces of wisdom that had been accumulated over the years by political scientists:

Let me just quote from the classic book by Marver Bernstein, Regulating Business by Independent Commission, 1955, pages 116 to 117. "While technology is often needed for the adjudication of disputes, there are grave objections to giving judicial power into the hands of specialists, whose outlook is confined to a single field. The worst defect of our domestic tribunals is the opportunity they provide for narrow, professional instincts and group habits, to insert themselves without let or hindrance, and the main disadvantage of such tribunals is the domination of the judicial process by petty loyalties and outworn traditions, which predetermine the conclusion and render an impartial investigation impossible."

I think that in creating this kind of specialist court, Congress ignored this wisdom accumulated by political scientists and that led to changes in the substance of patent laws that could, I'll comment on this more later, be dangerous.

MS. GREENE: Steve?

MR. KUNIN: While I think you have a nice list of questions, I think that we might also, if we have the opportunity and the time to do so, want to explore a little bit on the subject of judicial activism.

MS. GREENE: Go right ahead.

MR. KUNIN: I think in part and I'll go back to Herb's use of referring to a lot of commentary that has occurred on the court in the development of some of the case law. I think to follow on what Professor Scherer had just said, in terms of the aspect of the expert court and what happens with an expert court, speaking a little bit parochially, I think we see that there's a very great tension between, for example, the Patent and Trademark Office and the Federal Circuit on matters of appeals because of the fact that you're dealing with issues such as deference.

You're dealing with issues in terms of questions, as Herb was raising, in terms of fact-finding and the extent to which you are required, like a district court judge, to do express fact-finding by having witnesses and developing a record. Or, whether for example, the prior art speaks for itself, together with the knowledge and level of skill in the art where people, who have at least ordinary skill in the art, are able to bring to bear certain amount of official notice

in terms of the technical line of reasoning and how things work in the real world, and adding that component to any kind of documentary evidence when one is doing the fact-finding to get, as Herb indicated, the substantial evidence requirement met, In re. Guard Side, in order for deference to be given on fact-finding.

I think what happens, a little bit, is that maybe we see a high amount of flipping of decisions, either from the Federal Circuit flipping the decision of the district court judge or flipping the decision of the three judge panel of the Board of Patent Appeals and Inferences. It's interesting, I think, that sometimes you have flipping of two kinds.

First, it has to do with independent fact-finding where the court is acting in the role of a district court judge in terms of making its own independent findings of fact and not acting strictly as an appellate court; and it's done that even with respect to cases that have come out of our Board of Patent Appeals and Inferences. I think maybe Ed knows the name of the case, I think it's In re. Ruberson which is the case where, actually, astonishingly the court went out and did its own prior art search at a review of a Board decision in making a patentability determination.

So you've got that component of the independent

fact-finding, and, in fact, I think you have the other component, which I think was mentioned by Herb, is maybe the Supreme Court got it wrong in Markman, because when you make claim construction a matter of law, it seems very nice when you're thinking about taking certain decisions out of the hands of juries and leaving it in the hands of judges.

But then if you get into situations where claim construction is the name of the game and you don't know what the claim means until the Federal Circuit tells you what it means, it's, I think, a fairly disruptive process in terms of having to get to summary judgment and having to get the case in the hands of the Fed Circuit to know whether you win or lose. And it forces, I think, a problem from the standpoint of lessening the authority of the district court judges.

So I think there's probably, within the aspect of the trends here is a trend, at least I would put on the table for the panelists, as to whether they agree or disagree with the fact there seems to be an increased judicial activism.

MS. GREENE: Do you have a question?

MR. POLK: No. Actually Steve took the point I was going to raise, and probably getting back to what Herb said about the Sang Su Lee case, I agree the

Federal Circuit has required a lot more express, on the record fact-finding, but the question is: Is that a wise decision as where the Board of Examiner could not take their own knowledge and combine it with a piece of prior reference and say: Yes, this is based on my knowledge as a skilled artisan. It would be easy to take this reference and combine it to get this particular invention that the person is trying to patent.

So again the question would be: Should there be some more deference to the knowledge of the examiner of the Board without having to go find the prior reference that says something that they would already know in and of itself?

MR. COHEN: Ed, just a reminder to Ed and everybody else to speak into the mikes for the benefit of our transcript.

MS. GREENE: Glynn?

PROFESSOR LUNNEY: I was just going to make the point when we're talking about judicial activism, that I think there's also a distinct trend of the Federal Circuit seeing itself as perhaps somewhat less restrained by Supreme Court decision-making than the other circuit courts around the country.

I think stakes were set fairly in the evolution from Parker v. Fluke to Diamond v. Deere. The Federal

Circuit seems to have the sense that if it just sticks with a position long enough, the Supreme Court will eventually tire of taking cases on cert. and reversing summarily, and will finally decide that -- maybe the Federal Circuit wasn't so wrong to begin with.

So we've seen a lot of decisions recently where the Federal Circuit has been reversed by the Supreme Court. And I think there's a real question of how willing or, certainly I don't think there's any eagerness on the part of the Federal Circuit, but whether there's even a willingness to actually implement the Supreme Court's directive according to not only its strict holding but the spirit as well.

MS. GREENE: Dan?

PROFESSOR BURK: There's a lot on the table. I wanted to, I guess, start by going back to the earlier discussion about the Federal Circuit as having been given this mandate to sort of either improve patent law or harmonize patent law. That's certainly the conventional wisdom, and Rochelle wrote the classic article many years ago about the dangers of specialty courts.

It's an evolving institution, and it's a maturing institution, and it's not entirely clear to me that what we might have said 10 or 15 years ago about

the court is necessarily true today.

Certainly, the judges that I've talked to don't like to see themselves as specialists, and they'll quickly remind you of all the other things that the Federal Circuit does besides patent law. There's been a fair amount of personnel turnover on the court, and the newer judges are not necessarily from the culture of the patent bar.

So if you look particularly at some of the empirical work that's been done, looking at Federal Circuit decisions, in fact by Mark Lemley and John Allison, it may not necessarily be true, sort of our conventional view of the Federal Circuit and the judges in the Federal Circuit, as to how they're going to decide things today as opposed to say 20 years ago. So that's something we might question or something we might think about a little bit.

To the extent that they do have this feeling that they need to harmonize or uphold patents, if you're in that position and you're aware that you're creating this mine field that Professor Scherer was talking about, one of the things that you might think about is: Well, if I have to create more patents or uphold more patents, how can I do that without creating such a dangerous mine field or stifling innovation?

That brings me back to your comment about different industries, whether you can use different policy levers and different industries to either make the mines less explosive or space them farther apart or otherwise adapt what you feel you've been asked to do to a particular industry, which is part of the reason I asked about misuse. Because at the same time as we've seen the sort of whittling away of patent misuse in the Federal Circuit, there's been a renaissance of misuse in the other circuits with regard to copyright law to apparently cut back on certain trends and expansion of copyright.

If we're not using misuse as a policy lever to do that in patent law anymore, which was done for many years, then what's playing in that role -- if anything? Is some other policy lever used to play that role? So, that's another thing we might think about.

Finally, this question about claims interpretation. One of the things that struck me for many years is the, I guess, very underdeveloped, almost naive analysis and approach to claims interpretation and patent law as opposed to other types of textual interpretation of the law.

There's very robust case law and very robust

analysis of interpretation of contracts, interpretation of statutes. I get a lot of this from my colleagues at University of Minnesota, like Dan Farber, who are very involved in constitutional interpretation, and we haven't had much of that in patent law, and we haven't drawn on that body of experience in patent law.

I think it may partly be because we haven't had sort of a unified court we could look at. It seems sort of easy to do this for constitutional law because you sort of look at the Supreme Court and say, Well, what does Justice Scalia do, what does Justice Breyer do and so on.

For a long time we couldn't do that in patent law. Now we have a unified court, and we're beginning to see the beginning of emergence of not only this trend towards articulating some ideas about patent interpretation but also some analysis. People like Craig Nard and John Thomas here at Georgetown University are starting to think about, Well, what are the predilections of certain judges on the Federal Circuit towards interpretation? What kind of canons of construction are being used and what type of interpretive methods are being used?

So I think that's still in its infancy, but I think Herb's right, we're beginning to see more of that

from the court. I think we'll see that develop, and that seems to me to be a positive thing actually because we've been sort of doing it for a long time without thinking about it very much or articulating what we were doing, and I think it's good to have it out in the open.

MS. GREENE: John?

PROFESSOR DUFFY: Yes. I just wanted to say one of the key questions I think was identified by Professor Scherer, which is the question of whether the court does suffer from some sort of institutional bias? Indeed, that actually made it into the Supreme Court. The concurring opinion of Justice Stevens actually talked about the new rule of jurisdiction as perhaps actually serving as a salutary check on an institutional bias in the Federal Circuit.

I think that there's something to be said about that, but there's also something else that's going on here because a lot of what we're talking about this morning or one of the trends that was identified by Herb Wamsley is that the PTO is getting reversed. The PTO is a specialized agency. If you believe in the theory of agency capture, which is the theory, which has generally agency capture has been brought out against specialized agencies like the ICC, the former ICC, the FCC.

You would think that a court would be less likely to be captured, perhaps. Because the judges there are insulated much more completely from political influence and from further career aspirations. Maybe that's not true, but you would at least the PTO to be captured too. Sorry Mr. Steve Kunin, but, at least under the theory, you would expect that the PTO would be captured. And here we have the PTO trying to deny applicant patents and the Federal Circuit reversing, so I think maybe something else is going on there.

Part of it might be an accretion of power towards the Federal Circuit. If you look at the Markman decision and you look at the decisions, a lot of what the Federal Circuit is trying to do is turn a lot of issues into legal issues, which, of course, then get de novo review at the Federal Circuit. Strengthening record requirements at the PTO also pushes decisional power up to the Federal Circuit, which might be, I think, part of a more subtle bias of a specialized appellate court.

The other trend, you asked about trends that we should consider here. I think it is important to look, not just at the Federal Circuit, but at the Federal Circuit's relationship to the Supreme Court.

In the first decade of the Federal Circuit's

existence, depending upon how you count decisions, there were either two or three cases, depending upon what you count as a patent case, that the Supreme Court granted cert. on, and one of those was summarily reversed, which means that there was no argument, no oral argument in the case. It was just done on the cert. petition, highly unusual thing for the Supreme Court to do, and they basically said to the Federal Circuit: We're not sure what you did, go back and take a look at this. So, anyway, two to three cases.

In the next decade, there were 9 to 10 cases, again depending on how you actually count what constitutes a patent case, and in the last term, there were three cases.

So in fact we've seen an acceleration of Supreme Court review over this. I actually think the Supreme Court is getting back into the business of the patent. If you look at the cases that the Supreme Court is taking, they often deal with process issues. It's not just like Markman where you're dealing with the allocation of power between judges and juries.

It's not just Zurko, which explicitly deals with the allocation of power between the PTO and the standard of review that will be used for the Federal Circuit. It also includes all the doctrine of equivalents cases, too,

I think, which really do deal with the allocation of power ultimately between a jury -- which gets much more freedom than doctrine of equivalents cases -- and the courts, meaning especially the Federal Circuit, which get more power in literal infringement interpretation issues.

So, I think that this is a very significant trend, and it remains to be seen how the Supreme Court is going to -- or how the relationship between the Supreme Court, a generalist entity -- is going to play out with the Federal Circuit. But, I think the Supreme Court is actually taking more attention.

In some of the comments I'll have later, I'll actually suggest areas where I think the Supreme Court's jurisdiction could be successfully invoked and usefully invoked, too.

MS. GREENE: Why don't we turn to Rochelle, and then we'll have Professor Scherer give his presentation.

PROFESSOR DREYFUSS: I want to endorse the previous comment. I think it is very important to ask the question: why does the Federal Circuit seem to be suffering some of these specialization problems? And it is important to separate courts from Commissions because there is not the revolving door problem.

The people who are appointed in the first place do not necessarily have the same kind of expertise or

sort of industry expertise. They come from a variety of walks of life, but there are problems with specialization. I think it is worth pointing out how the problems that might be there play out in the cases because that's how you could correct the problem.

One, I think, is this notion of not seeing the area of patent law in a broader context. I think part of what Dan Burk was asking about misuse and this trend about the antitrust cases really shows you that the Federal Circuit isn't really seeing patent law as part of a whole panoply of tools that are used to promote innovation. So, that sort of contextual problem, I think, is something that needs to be thought about.

The second is the problem of the self-consciousness about adjudication. I think because the court very rarely has to justify itself to its sister regional circuits, there is less of a tendency to explain what it's doing. It says what it's doing, but it doesn't explain what it's doing. So we've got lots of theories about what's going on, public policy levers and stuff like that. That's great. And if the court were really doing that. Then we could debate the question of whether, as Dan said, they're using the right policy lever for the right industry, but they don't ever talk about it.

Other courts have to talk about it because

they're in an interchange. Maybe John's right that as the Supreme Court starts granting cert. on more issues, including more substantive issues, they'll feel the need to do that even without having the kind of percolation and cross pollination from other courts.

But I doubt it. I think it's very hard to have to explain yourself or very unlikely that you're going to explain yourself if you don't have other courts to do it.

I think there's an interesting little irony that came up. Here we have the Federal Circuit saying that the PTO has to provide more evidence of what they're doing and, yet, the Federal Circuit itself takes judicial notice of anything it feels like taking judicial notice of. So there's a certain lack of self-consciousness in the way that they're thinking about their decisions and also a lack of self-consciousness in the way that they think about how their decisions impact the lower courts.

So you see a lot of courts of appeals actually thinking about the question: How is this decision going to play out at trial? You rarely see the Federal Circuit doing that. That might, in part, have to do with the fact that there is no hierarchically related court, so there aren't judges in the elevator saying, Hey, this Markman thing is a real problem, why don't you take interlocutory appeal on some of these issues?

Because they don't see trial courts the way that other courts of appeals do, so I think lack of self-consciousness.

The third thing is kind of out of the mainstream. I mean, they are not in sort of the mainstream of thinking about issues of law. I thought the remedies point that Mike made was such an important point, I really never thought about the fact that the Federal Circuit almost never talks about these remedy questions.

Rite-Hite had a whole huge en banc on it, and you have seen very little repercussions of all of those questions coming through the court. Yet, remedies is a big issue in a lot of areas. Other Courts talk about remedies all the time. And here the Federal Circuit has rarely done it.

The language interpretation point I thought also was an important point, but notice who Dan was quoting as talking about language, Craig Nard, other law professors, not the Federal Circuit itself. Whereas in other courts, again, the courts themselves talk about these questions, cite to things that deal with these issues of plain meaning, legislative intent. All of those questions do come up in other circuits, and this court rarely mentions them.

Having academia do it is great, but having the court do it is a lot more important.

MS. GREENE: Professor Scherer?

PROFESSOR SCHERER: Could we take a three-minute break before we start?

MS. GREENE: We can take a five-minute break.

PROFESSOR SCHERER: All I want is three.

(Whereupon, a brief recess was taken.)

MS. GREENE: We're going to start up again. Dan, until they fix your mike, you're just going to have to yell. Let's proceed with Professor Scherer. Thank you.

PROFESSOR SCHERER: Thank you. Being at these hearings reminds me of the testimony of Judge Learned Hand before the Senate's O'Mahoney committee hearings in 1956. Let me quote Judge Hand:

"You can find -- I have been at the job nearly fifty years -- there are two schools, and the one school beats the air and says without the patent system, the whole of American industry would never have been developed.... and the other says it is nothing but a beastly method..... No one really knows. Each side is beating the air."

I, too, have been at the job nearly 50 years,

having written my senior thesis at the University of Michigan in 1954 on the atomic energy patent laws. What I want to say first is that a lot has changed since the O'Mahoney committee hearings took place during the late 1950s. We know infinitely more about the patent system's operation now than we did a half-century ago. We don't have to beat the air anymore.

But something else has changed. Congress has become much less responsive to the emerging knowledge about the patent system. It has had nothing like the O'Mahoney committee hearings since then. But, despite closing its ears to what we have learned, it has passed important legislation affecting the patent system, and the Courts have done similarly.

So let me try to summarize. What have we actually learned? Let me hit some of the highlights.

Perhaps most important, a solid body of evidence, based on five major surveys, has accumulated, showing that patent protection is unnecessary and unimportant as an incentive to investment in corporate research and development in a wide-array of cases.

Alternative stimuli to such investment are: the natural time lag an innovator enjoys, the brand image advantage firms known as innovators enjoy. This is a

phenomena first illuminated by Federal Trade Commission researchers Ron Bond and David Lean in 1977. A third stimulus is the possibility of keeping important deals of an innovation secret; a fourth, the need for imitators to invest nearly as much in R&D as the first mover; the fifth and very, very important emphasized in the new book by William Bavmol, among others, the fact that in many oligopolistic industries, firms find themselves on the treadmill. They must either innovate or lose ground. A final, not the only one, but my final stimulus is the advantages firms with well-established marketing channels have over rivals who are less well-positioned.

This does not mean that non-patent stimuli are always sufficient to induce investment. We have also identified cases in which the protection of patents is important to investment in research and development. The most important such case occurs when required R&D outlays are high relative to the size of the potential market, but imitation can be quick and easy, that is, with imitator R&D costs much lower than those incurred by the innovator.

The classic examples are pharmaceuticals, with their huge clinical testing costs, and perhaps also software. Although it must be recognized that much

software innovation does not require huge R&D costs, and many software innovators are willing to write programs for the sheer creative joy of the activity.

Patent protection may also be important to small, new firms without reliable internal cash flow and lacking well-developed channels of distribution. Much of the American economy's recent dynamism is attributable to such newcomer enterprises. Although it must be recognized that the successful ones, the minority, one in five, one in ten, morph rapidly into the kind of larger enterprise that must innovate or atrophy even without patent protection.

We know from reading the weekly Patent Gazette and from research by Cecil Quillen who's here, among others, that the inventive content of the average U.S. patent is quite low. Much lower, it would appear from Cecil's work, than the quality of comparable German patents.

To see how standards have been relaxed, I would recommend as remedial reading the letters indexed under the word "patents" by the first U.S. patent examiner, Thomas Jefferson. Those letters, especially those to Oliver Evans, can be found in the Jefferson encyclopedia. You would see Jefferson imposed a high standard of invention.

There's no recognition, whatsoever, in patent law of a large body of social science research that shows that under certain conditions, inventions become literally inevitable. Indeed, if opposite, the law has gone off in a direction contrary to this insight over obviousness. That is to say, an index of inventiveness is viewed as the fact that an invention has commercial value. When it has commercial value, that's a stimulus to inventors, and sooner or later they're going to invent with or without the patent.

We know that -- and I'm repeating now a point I made earlier, and I'll just shorten it -- the consequences of infringing a patent that is determined to be valid have skyrocketed, increasing substantially the risks of bringing a new product to market.

We know that innovation has become more complex and more science-based and that the time lags between basic discovery and practical implementation have shortened. Therefore, the sequencing of patented inventions over time, what Suzanne Scotchmer has called the standing on giants' shoulders phenomenon, has accrued much greater importance than it had in the past.

In particular, one or more early basic patents can retard or bar innovation by a downstream inventor or developer, slowing down the pace of technological

advance, instead of accelerating it, as was the original intent of patent systems. Those are some things we know.

The FTC is to be commended for holding these hearings, which should make it clear what is known about the patent system's functioning. The question remains, What next? Let me make a few suggestions.

First, it would be useful for the FTC to exercise its traditional sunlight role, which is the reason why President Wilson recommended its creation in the first place, informing Congress of what it has learned through this investigation. That will require some lobbying. You have to induce Congress to open its ears, but I think the Commission is capable of doing that.

Second, I do not believe it is possible without significant procedural changes to upgrade the quality of the average issued patent. To move in that direction, I strongly recommend that Congress enact into law an opposition system that will allow those who have better information than Patent Office examiners to challenge patents at an early, pre-litigation stage, that is to say, shortly after publication of application for those applications now subject to publication, shortly after issue for the remainder.

Congress should address explicitly the court-made law encompassed by the doctrine of equivalents. That's a very technical subject, and I'll just leave it at that. A lot is happening, as we've seen, with the Supreme Court entering into the picture.

A particularly pressing problem is the possibility that technological progress can be impeded when one patent, or a whole cluster of patents, perhaps held by different assignees, are essential precursors to the commercialization of a technology. I have analyzed such cases at length in my paper, "The Economics of Human Genome Patents," of which the Commission staff has a copy.

Stalemates can develop in such cases in two ways. First, when a basic patent has little commercial value in its own right, for example, a sequence of the human genome, but can block a downstream's commercial innovation, bargaining stalemates can emerge. Especially, as my recent research with Dietmar Harhoff and others has shown, when technological and especially market uncertainty leads to widely varying estimates of the upstream blocking patent's value.

Second, many inventions may depend upon numerous upstream patents, each of whose assignees attempts to collect his or her little royalty. The problem here is

like the problem Germany faced during the 18th and early 19th Century, when dozens of robber-barons attempted to collect tolls on passage along the Rhine River past their particular collection points.

This sounds like a trivial little instance, but as a matter of fact, as a result of the pyramided tolls, passage through the Rhine was severely impeded, holding back the economic development of Germany until the logjam was cleared away by a treaty in 1831. It's from that period on that German economic development starts and the opening up of the Rhine was a major contributor.

To break such patent logjams, compulsory arbitration provisions should be provided in the patent law, to be invoked when negotiations over patent licenses are stalemated for more than six months. The law should specify that the benefit of the doubt is to be resolved in favor of rapid technological progress with no more than reasonable compensation to be paid.

These days at least, since many blocking patents stem from basic research supported by federal government funds, the law should specify that in breaking any such blockages, the prior role of public funds should be given heavy emphasis in the determination of appropriate compensation.

Finally, the Federal Trade Commission can

contribute to minimizing such blockages on a case-by-case basis. The consent settlement reached in the Intel case is one example, and I might note that the Commission, in this instance, proceeded in a quite different way than the appellate court for the Federal Circuit proceeded in the Intergraph case.

Intergraph's case, viewed in a narrow way, was a bad case. It should have been thrown out, even though Intergraph has been shown since then to hold patents for which Intel appears to have been willing to pay about $170 million. But it's clear in the semiconductor industry that there were huge blockages of patents that were retarding innovation, and the FTC's settlement of that case opened up the way to continuing innovation, without giving special preference to one powerful firm.

The required licensing of key biotech patents in the settlement of the Ciba-Geigy-Sandoz merger filing is another example of what the FTC can do to prevent logjams.

Well, these are some ideas I have, and with that, I'll conclude my formal testimony.

MS. GREENE: Thank you very much. I greatly appreciate that and you've put a lot on the table. You've discussed this before and your articulation previously was -- you talked about this gulf between

the analytical findings between social science and policy-making.

So I'm curious as to what do we do now to reduce that gulf further, and what are the biggest impediments?

PROFESSOR SCHERER: By we, you mean the Federal Trade Commission?

MS. GREENE: For starters, yes.

PROFESSOR SCHERER: Yeah. The FTC has great respect on Capitol Hill. And it also has people that know how to talk to the members of staff on Capitol Hill and get their interest. It should make clear that it has useful things to say to the Congress and try to get some hearings started, like those that the O'Mahoney Committee held in the late 1950s.

Those hearings produced a set of documents roughly a foot wide on a shelf of books -- the state of the art was very primitive now. You, the FTC, have to get Congress to open up its ears and listen to the problems.

MS. GREENE: Fantastic. One other idea I'll just throw out that's been mentioned in other sessions is the role of the agencies and amicus briefs, so I'll just add that to the mix and turn to Glynn.

PROFESSOR LUNNEY: I wanted to open up sort of an avenue of discussion generally with a specific question about one of your proposals about compulsory arbitration, either under the FTC or outside, within the formal structure of the patent law itself. I wanted you to address, if you could, whether you thought that would be consistent with the provision Article 31 of the TRIPS Accord, limiting the situations where compulsory licenses are available. I think the semiconductor industry is excluded altogether from a compulsory license provision under Article 31 of TRIPS. Then if you can maybe address a little more generally how we've ceded perhaps a bit of our own jurisdiction within the United States by virtue of this and other treaties in terms of modifying the patent law as we see fit, and if you think there are any potential issues there we need to focus on.

PROFESSOR SCHERER: Actually, I had Article 31 in mind when I made this suggestion. My suggestion is not quite the same as Article 31, because Article 31 allows a government to mandate licensing when negotiations have stalemated.

My proposal would go more broadly and allow private parties to ask for arbitration when negotiations have stalemated. So what I have suggested goes beyond

Article 31 of TRIPS but certainly was influenced by the fact that it exists.

There is an extension also to Article 31 when it's a matter of national interest, a national health emergency, for example, the failure of negotiations clause can be waived, and this is the kind of situation into which a government agency could intervene and indeed has recently in the Cipro case.

We were threatening to invoke Article 31 of TRIPS to get Bayer to make available either larger quantities of Cipro at lower prices in response to the Anthrax scare, or to take on additional licensees who could increase what appeared to be a restricted supply.

Using TRIPS Accord generally, I really run into difficulties here because I become a two armed economist, on the one hand and on the other hand. This is real torture. We're worried about the high prices of pharmaceuticals.

On the one hand, the federal government has the power to invoke compulsory licensing in national health emergency cases, and it could use that power.

On the other hand, I'm very well aware that the flow of profits into the drug industry, the more profits flow in, the more R&D you get, and the more new drug chemical and biological entities you have coming out of

this horn of plenty. These two directions are conflicting with one another.

All I can say is one needs to do it carefully and judiciously.

MS. GREENE: Rochelle?

MS. DREYFUSS: I was struck by your point about stacking patents and questions of uncertainty in evaluating upstream patents. Everybody has said that that's a problem from a theoretical viewpoint. Becky Eisenberg has some anecdotal evidence that it's a problem, but every social scientist that's actually looked for examples of it has run into a wall.

Wesley Cohen tried to do a study. I think he started off thinking this was a problem, and he was just going to document the size of it. He couldn't find the problem, and I'm curious whether you have any theories on why it is that people are having such a hard time actually finding this problem in the genetics area?

PROFESSOR SCHERER: In the genetics area specifically?

PROFESSOR DREYFUSS: That's what people have been specifically looking for. Wesley Cohen and a couple of other people also, Dan might know, have really been looking to try to evaluate it, scope it out and figure out exactly where it's happening. Individual people will say, yes, who

are having problems, but nobody has been able to document it.

PROFESSOR SCHERER: Well, in genetics specifically, I guess there are two answers. Number 1, a lot of the basic patents in this area are held by universities. Those universities have fairly strong incentives to see their essentially still not-yet-useful patented technology get into commercial utilization.

They do that sometimes through nonexclusive licenses. There were several hundred licenses of the Cohen-Bayer patents issued. They do it in a lot of cases through exclusive licenses. The new -- I take the drug, I can't think of its name now -- but the anti-inflammatory, the Vioxin like drugs. The basic patents on those drugs are held by the University of Rochester which has then licensed them out and is taking substantial royalties.

So there are incentives for the upstream patent holders to reach deals. They're perhaps more inclined to strike a deal than the private holder may be. So that's one answer.

The second answer is, my daughter is a microbiologist, and running her labs costs an awful lot of money because she is paying toll to the owners of a lot of upstream method patents and vector patents, and

so the cost of the research she does are increased. The people are quite willing to license her, either sell the stuff to her at high prices or license it to her at a price. But there is a price, and that price does, I don't know how much, but it does slow down biological research.

MS. GREENE: Herb?

MR. WAMSLEY: I would like to comment on two or three of the points that Mike made.

First of all, on the O'Mahoney hearings long ago, I'm almost old enough to have been there for those, but I have seen the voluminous records of those hearings and the very scholarly nature of them and the great amount of statistical evidence that was brought forth.

I think that the Congress does deal with intellectual property matters in a different way today. Clearly times have changed I think as you indicated, but I think today, one thing that has changed is that there's a great deal more lobbying by the private sector interests on intellectual property issues than I believe was the case at the time of the O'Mahoney hearings, and I'll review that I represent those interests or some of them.

I think the way it works today, Congress often makes changes in intellectual property law that are

urged on by those who are doing the lobbying, and that gets to what kind of changes they've been making. Generally speaking, they've been strengthening IP protection, including patent protection, over the last decade or two in response to the lobbying.

I think that's because many of the companies and the industries who are doing the lobbying perceive that stronger patent rights are in their economic interest, and with respect to compulsory licensing, of course, the drug industry and other industries, who are doing the lobbying, don't perceive that compulsory licensing would be in their interest.

Now, on the question of patent oppositions that you mentioned -- which is something that is under more discussion right now, I believe, in Congress and the government and the industry than it has been in several years -- there appears to be a lot of support for that. Various degrees of various kinds of opposition bills are now pending in Congress.

There's one bill that has been already passed by both Houses of Congress in different forms and could become law this year that could have a noticeable affect on the Court of Appeals for the Federal Circuit, getting back to the heart of what we're discussing today, and that bill that may pass creates a right of appeal to the

Federal Circuit and the inter partes option proceedings that were set up in '99 under the American Inventors Protection Act.

If we have these appeals going to the Federal Circuit by opposers of patents, people who are not asking the Federal Circuit to approve the patent but people who are asking the Federal Circuit to invalidate the patent, you may see a substantial number of those appeals that may give the Federal Circuit more exposure to a different set of customers, if you will, that they don't hear quite so much today. That could have an effect perhaps on the Federal Circuit.

Now, finally, we talked about mine fields that are out there and all the patents that are being issued, all the narrow patents. I think you can find quite a bit of support for that among companies that are large patent holders today because those companies that are large patent holders are also manufacturers. They tend to look at the patenting system from both sides, depending on the situation they're in.

So I think you can find a lot of agreement about too many patent mine fields being out there. I think it's a subject for a lot of discussion as to how much the Federal Circuit has had to do with cleaning those mine fields. There are so many other factors.

There's the Patent and Trademark Office, my good friend Steve Kunin, who has the responsibility for issuing the patents. There are many things that can be done in the way of better training, more resources at the Patent and Trademark Office, improvements in legislation, and so I would say, Mike, you've covered some very important issues. I don't think the Federal Circuit necessarily has been responsible for some of the things.

PROFESSOR SCHERER: Let me just address two of those points. First lobbying in Washington? I feel like the French police commissioner in Casablanca, I'm shocked, shocked, shocked.

Oliver Evans, two and a half centuries ago, inventor Oliver Evans had Thomas Jefferson's ear. He was lobbying Jefferson, but Jefferson didn't take any guff. He was his own man. He made an independent judgment on the claims that Oliver Evans was presenting. I think we need somehow to get some balance here.

Let me give an example. I was working for Pfizer back in the late 1950s and following things very closely. At that time, the Department of Defense was procuring large quantities of tetracycline and other drugs from Italian vendors, using its right to

essentially ignore the patents existing on those drugs and getting a lower price.

All of a sudden it stopped, and I had wondered for decades why it did stop. A little bit of research finally gave me the answer. Proceeding through several different statutes, I finally found that there had been an appropriations or foreign aid act amendment put on saying that, from now on, the government will not buy any drugs in contravention of existing U.S. patents.

How did it get there? It was introduced as an amendment by a congressman from Indianapolis, one that you might call the Eli Lilly amendment, in House of Representatives that seemed to have about 30 people on the floor at the time. There was just a tiny bit of debate. The conference committee didn't address the issue. All of a sudden the basic national policy gets changed in an extremely obscure way, unless you track what actually happened.

Now, on opposition, let me give another anecdote. I worked for Dell Computer about a decade ago. Texas Instruments had succeeded against several smaller firms and was now going on to Dell, which they thought was a weak firm, but they made a mistake. Dell mounted a substantial opposition effort when Texas Instruments claimed that Dell was infringing a submarine

patent that Texas Instruments had received that defined the concept of a personal computer. That patent had been issued and gone through the process.

What Dell, by investing a substantial amount of money, found was that two years before Texas Instruments filed its patent, which covered the basic concept of a personal computer, an electronics engineer had filed a full description of this same invention in an electronics industry magazine.

Now, there's almost no way a patent examiner under the existing system is going to know about that prior literature unless the patent applicant is stupid enough to put that prior reference to the literature in the patent specifications. But, when you have an opposition procedure, those people who have information that is not within the domain of the patent examiner will bring that information forward and get the job done properly.

That's where I think its great possibilities lie.

MS. GREENE: Steve?

MR. KUNIN: I had a couple of comments, principally directed to some of the points that Professor Scherer made and also to follow on with some of the observations on Herb Wamsley's comments.

I'm sure many of you are quite aware that at the early part of last month, we published our 21st Century strategic plan. one component of that strategic plan is our intent to introduce, in the next Congress, a piece of legislation to establish a post-grant review system.

We also believe that the current post-grant system that exists, principally the inter partes reexamination system that was created in the American Vendors Protection Act, since we've only had four requests filed under that act, shows that it does have as many probably traps in it as any other kind of mine field that makes it somewhat unappetizing to use.

I would observe, however, that under the American Inventors Protection Act, in the area dealing with 18-month publication, Congress did look at the question of pre-grant opposition and specifically chose to legislate against pre-grant opposition after publication.

I believe that history has shown, in other countries that had pre-grant opposition, that it was a form of applicant harassment. Especially in an environment where patent term adjustment is available for delays in the grant of the patent, that it, I think, produces the most undesirable outcomes in terms of

harassing applicants. Then, even if they survive the harassment, they end up with very long patents, 25, 30 year, 35 year, 40 year patents, which I don't think is good for society.

As far as the aspect of patents, more patents, there are many elements in our 21st Century strategic plan, which we believe, should we get the resources to be able to implement them, will substantially enhance the ability of us to issue quality patents in a timely manner.

There's a large number of initiatives dealing with the quality of the people hired, their training, development, supervision, review of cases and the like. We do believe that that is important consideration in terms of having more reliable patents, regardless of how many do get granted in any particular year.

The final point that I would like to make is that it's interesting from the standpoint of quality and standards of patentability that, unlike the European Patent Office, where there is no right to judicial review of decisions from the EPO. In the EPO, essentially the examiner's decision can be appealed to a Technical Board of Appeals, and in a very unusual circumstance, there's an enlarged board that might reconsider the Technical Board's decision, but after

that, you're just out of luck.

I mean, basically if the EPO says it doesn't like your application, you don't get a patent. Whereas, in the United States, as you've seen from the perspective of Herb's chart, you get this kind of ripple effect where if the Fed Circuit says that won't pass muster, then the Board adopts that standard, and they apply to the Examiner's cases, and then you have that ripple effect from the standpoint of impact on standard of patentability.

I think there's an interesting aspect going back to the kind of authority that we have. Certainly the Federal Circuit in the Merck v. Kessler case has indicated that Congress has not given the Patent and Trademark Office substantive rulemaking authority. We only have interpretive rulemaking authority.

So, for example, we can't write a standard for determining whether the nonobviousness standard has been met. Writing that kind of rule, which in essence says: This is must you do to satisfy the requirement for patentability under nonobviousness, is a substantial rulemaking type of authority, which would be under notice and comment type of rulemaking, but we don't have that kind of authority.

In fact, what we can do is write procedural rules, and what we also do is we use notice and comment for producing what we call examination guidelines. Of course it's interesting when we produce examination guidelines is that sometimes the court decides that when they like them, they use them as part of the reasons for deciding a case. Sometimes the court decides that since they don't have force and effective law, they can ignore them. Sometimes the court, in a majority and a dissenting view, both take the guidelines and select different parts of our guidelines to support their position.

So, in essence, I think getting back to sort of this increased certainty, if Congress perhaps were to give the Patent and Trademark Office substantive rulemaking authority and we were to exercise that appropriately, I think that also would have a substantial impact on standard setting, norm setting and the implications of what happens in terms of the number and breadth of patents that issue.

MS. GREEN: Yes.

PROFESSOR SCHERER: Let me just say one word about opposition in foreign jurisdictions. Germany, for example, has an opposition system, and Dietmar Harhoff, Katrin Vopel and I have done a study of a large number,

about a thousand, German patents. We have determined the economic value of each one, and then we have found, in subsequent analyses, that the single most powerful explainer of a patent's value is the fact, if true, that the patent has come successfully through a patent opposition procedure.

Now, what is that statistical result telling us? It's telling us, first of all, that the oppositions are focused on the potentially economically important patents. You don't oppose every patent. You oppose only those patents that are going to be economically important. Number 2, it's telling us that once a patent has successfully gone through opposition, it has, in effect, reached the gold standard. It now does exactly what patents are supposed to do, exclude competitors from imitating the invention.

MS. GREENE: I'm trying to tie in all of our themes of the economic analysis and the trends in the Federal Circuit. I actually wanted to reintroduce a quote that Rochelle Dreyfuss had written a half a dozen years ago. "Despite the fact that economics is equally pertinent to patent law," and she's referring to in contrast to antitrust law, "the judges of the Federal Circuit, with some exceptions, have displayed little inclination to keep abreast of developments in economic

theory."

I was curious as to whether or not that remains equally as true today?

PROFESSOR DREYFUSS: I'm being called on?

MS. GREENE: No, you haven't been called on. What was I thinking?

PROFESSOR DREYFUSS: At the time that I wrote that article, I did what Herb did, which was read every single case that came out in the first ten years. I have not done that in the last ten years. I did it for about two more years.

MS. GREENE: You had other things to do, right?

PROFESSOR DREYFUSS: Yes, so I think it's a really interesting question of how much the Federal Circuit really is keeping abreast of those things.

I've been trying to nail down the question of how much the Federal Circuit relies on non-case law things, law review articles and such. The anecdotal evidence is that they're not looking at that stuff very much. I'm having a hard time trying to actually do it empirically, although we talked about this, I've been trying.

The raw numbers look like they don't look at this kind of material very much, and from time to time the Federal Circuit Judges have said that they don't

understand why people cite this material. They're just citing cases. They're not making policy, which goes into my point of sort of this lack of self-consciousness about the role of courts and what courts do.

So my guess is it hasn't changed very much, but Herb can probably speak to it more because he actually has read the cases.

MR. WAMSLEY: Reading them was one thing. Remembering them all is another. I think that in recent cases you don't see many citations to things other than court cases. You don't see many citations to economic journals, law review articles or whatever.

At the risk of pronouncing another trend, I think there probably has been a trend toward shorter opinions by the Federal Circuit in the last five years. At the time when the Federal Circuit was established, and Chief Judge Markey was a dominant figure who was writing a lot of lengthy opinions, maybe not citing things other than case law so much, but certainly in lengthy citation filled cases opinions expounding on the broad areas of law, going way beyond what needed to be decided.

Now, this perceived trend toward shorter opinions today could be bad or good. We don't know what the court is reading because they aren't telling

us if they're reading things beyond what they're citing.

On the other hand, the courts I believe are doing a good job today of deciding the cases quickly. They have a lot of cases, and they publish more than, I think, about a 120 precedential patent and trademark cases today, not counting all their other jurisdiction. And, the average case right now is being decided in less than a year.

MS. GREENE: It seems that what we're seeing then emerging is the trend, to use that loaded word, that there's not a lot of nor does there seem to be an increasing amount of sort of self-conscious inclusion of economic analysis within the Federal Circuit. So here we are, in theory we can then impose some kind of economic analysis on what is being done, even if that is not explicitly taken in account by the court.

I'm just curious, in setting up for the afternoon session, what are the limitations of imposing that kind of critique on the court's decisions and what are potential pitfalls. Dan is smirking.

PROFESSOR BURK: I just remembered, and I'm sure Professor Scherer knows the old story about the drunk searching for his car keys under the street light, and someone comes along and says, Can I help you? They

look for awhile, and they don't find the car keys, he says, well, can you remember sort of where you lost them? He said, yes, down the street. Then he says, Well, why are you looking here? And he says, Because the light is better.

PROFESSOR SCHERER: That's no drunk. That's a drunk economist.

PROFESSOR BURK: Exactly. Over the years, I'm actually looking at something right now: when you have something that's not traded in markets so you can't really look at how people value it by the price they pay to market, you go to other sorts of attempts to measure it like contingent valuation and so on. Economists will tell you, and we all agree that economics just kind of breaks down because we don't really know how people value that. We don't really know what kind of policy we ought to have for that.

So one of the clear limitations is if what you're looking at isn't traded in a market and you're going to try and measure what it is worth some other way, most of what we have right now in terms of economic theory is not going to be terribly helpful. If it is traded in market, then I'm as much an amateur economist as any law professor. But a lot of things we're probably going to want to think about are not going to be

necessarily amenable to the kinds of analysis that are readily available.

MR. SOBEL: I would like to take a step back to earlier discussion.

MS. GREENE: Absolutely. Hello, Gerry. How are you?

MR. SOBEL: Hi. How are you doing?

MS. GREENE: We now have been joined by our last panelist, Gerry Sobel, who cut short his vacation to join us and I'm grateful. I'll just say real fast before your comment: chairman of the patent group at Kaye Scholer and a partner in the litigation department. He's tried and litigated many complex cases in over 30 years of practice.

What can I say, lots of landmark jury trials, member of the Advisory Committee of the Engelberg IP Institute at NYU and an Adjunct Associate Professor.

Yes, your comment.

MR. SOBEL: I didn't think my comment was going to elicit that very kind introduction.

You asked about the extent of economic analysis in Federal Circuit cases, and why don't I say what I've observed is there, and we can decide later if that's economic analysis.

What is there is a discussion, and I've written

a little bit about this and hope to speak a little bit about it this afternoon, is an assessment of what's good for competitors and to that extent what's good for competition and discussion of the notice function of patents. For example, to make it easier for competitors to design around if they know the precise boundaries, the idea goes they can operate very close to the lawful scope of the patent.

And there's discussion, a little bit of discussion, not much, of the incentive to invent that the patent reward provides. In Festo, where each judge almost wrote his own opinion, there was more discussion than unusual of this kind of thing. Some of the judges said: Well, we like the idea that competitors is the better word, that competitors can design around more easily and they'll operate in places where they wouldn't, for example, if the doctrine of equivalents in that case was more obscure, more uncertain.

Other judges said: Well, we'll be deterring innovation. The most ambitious opinion in this regard was from Judge Newman where she did look at the economic literature, but the economic literature that exists is approximately what is in Mike's book, and it says approximately -- well, innovation is a great thing. Robert Solo got the Nobel Prize for his paper

showing that innovation is the most important source of growth, contrary to what had been believed about intensifying capital and using less labor, but that's old news, and then it's improved on that. It doesn't go much beyond that, and you won't find that except from Judge Newman. So that is where it stands.

The Supreme Court, I might say, when it got the issue pointed out that the Supreme Court itself had always preferred the incentive to invent in considering the doctrine of equivalents rather than insisting on a literal reading of claims which would be better for competitors, and it comes back to that in Festo, but very cryptically and says: We're not going to abolish the doctrine of equivalents because we still think it's a good thing in terms of the incentive to invent and the patent award that promotes that, to have some protection -- it didn't use this word, some protection of the essence of the invention of substance over form and then it proceeded, and we can discuss this later, to circumscribe the doctrine of equivalents any way.

The Supreme Court's reference to competition was a paragraph or two, and I don't remember any citation of economic papers.

MS. GREENE: Dan?

PROFESSOR BURK: I should qualify this by saying

that I'm like Rochelle, I have not done a systematic reading of the last five years of cases the way that Gerry has or I mean that Herb has.

I see the kinds of things that are being talked about. The references in Federal Circuit cases that I have looked at to inventing around an innovation, but it all seems to be folk wisdom, with the notable exception of Judge Newman, who takes an active interest in the outside literature.

So my sense is that this is not sort of looking at the growing by even empirical evidence or looking at the sort of rigorous theoretical models that are available. To the extent there is a concern about this, it seems to be, as I say, folk wisdom.

The real cipher here is, of course, the clerks because the majority of federal judges and probably state judges sort of rely on the revolving door of clerks coming out of law school to bring new ideas into their chambers. I have to assume some of that is going on law in the Federal Circuit, but if the Judges aren't receptive to what the clerks are bringing in, then it may never appear in opinions.

So maybe what we really need to do is take a poll of Federal Circuit clerks to see what they're bringing in to chambers.

MS. GREENE: Rochelle?

PROFESSOR DREYFUSS: Just to add on to Gerry's discussion of Festo, what's interesting with the Supreme Court opinion is the Supreme Court does not use economic evidence, but they do think about linguistics. They talk about how language is used and what's the capacity of language to capture actual meaning, and that's actually a really stark contrast to the Federal Circuit.

With all of those opinions in Festo, there was very little discussion of what we can really expect people to be able to talk about, their cutting edge technology at the time that they apply for their patent and capture that in language. So it's a different social science, and do you call linguistics social science, but it's a different field, which the Federal Circuit is also apparently ignoring.

It's useful I think to compare what the Federal Circuit is doing to the odd case that Judge Posner decides or Judge Easterbrook decides, and they don't get a lot of patent cases anymore, but Easterbrook in particular has sat as a district court judge a few times. You see immediately in those cases, I don't actually agree with a lot of what they do, but an attempt to bring economic analysis to it, so I think

there's sort of a useful analogy there or useful comparison there on what's going on.

Dan just made a point, what did you say at the end?

PROFESSOR BURK: Something about maybe we need to poll federal clerks.

PROFESSOR DREYFUSS: Yes, I think there's another body of crowd that needs to be looked at, and that's the bar. I think that the Supreme Court tends to look at things that the lawyers in the case tell them to look at. Maybe it's the law clerks that are doing it first, but the law clerks aren't sort of finding things. They're just looking at what is cited in the briefs.

I have a feeling that the briefs of the Federal Circuit cases aren't providing this material. I have not done that study. It would be useful to do it, but I don't think you see it even in the briefs. If that's because the Federal Circuit isn't amenable to it and so it's a waste of time to put it into your brief or whether it's not in the briefs, therefore, the Federal Circuit is not looking at it -- is sort of this chicken and egg problem, but I think it's also in the way that these cases are framed for the court.

MS. GREENE: Glynn?

PROFESSOR LUNNEY: I actually was going to make a very similar point. Maybe I'll expand on Rochelle's point about what's in the briefs I think is incredibly important. I think that for an attorney who gets a case and has a relatively short time to actually brief a case and a rather severe page limitation -- to actually go into detail into the economics, having litigated many or a fair number of cases myself, it's just impossible.

Indeed, it makes your case look weaker because if the judge pens up the case and the brief and the first thing they see is some discussion of the economics literature, they'll think: Well, this person has no case law support, so they clearly had to resort to the last refuge of the desperate, which is the economics literature.

I think that's a very serious consideration. It's in part why an executive branch body, whether it be the PTO, the Department of Justice or the Federal Trade Commission, with better access to longer hearings, with voluminous transcripts, might be the better forum for a kind of discussion of the economics than some sort of policy recommendation, whether that be a study that then could be cited, an authoritative study, some sort of policy decision.

I'm familiar with the Merck case that Steve

Kunin mentioned. Actually I was one of the litigators in that case. But I actually think that that does leave some room for to the PTO still to get some deference on certain issues, including issues that might be considered issues of law.

That is a more hospitable forum for the economics than the case law. I agree with you that if you look at those briefs, certainly the briefs that I wrote when I was ligating and that the other sides wrote, you won't see a lot of the citations. Maybe antitrust is a very, I think, rare area because there are few decided cases. Cases decided tend to be rare, and everybody knows that there are very few constraints of statute, very few limitations, and the judges really are policy makers.

The last point I'll just say is that, of course, it is actually a good thing that the judge's instincts are not to look too much at the economics literature because they're not experts in economics. Judge Posner and Judge Easterbrook are exceptions to the rule, and I think that actually a court, as an institution, would have a great deal of problem actually understanding the economics literature in the time frame that cases are brought before it and in the adversary context.

MS. GREENE: Well, it seems that the gulf

between analytical findings and policy making that Professor Scherer pointed out continues to exist. I hope that we've begun to tease out some of the contours of why that gulf exists as an institutional matter. This afternoon we're going to look at ways in which, perhaps, we can begin to bridge that gulf within specific contexts. What we'll do now is actually break for lunch, and then we will resume at 1:30 p.m.

(Whereupon, a lunch recess was taken at 12:05 p.m.)

AFTERNOON SESSION

(Resumed at 1:30 p.m.)

PANEL ON PATENT LAW ANALYSIS IN FEDERAL CIRCUIT JURISPRUDENCE

PANELISTS:

DAN L. BURK, Julius E. Davis Professor of Law, University of Minnesota Law School

ROCHELLE C. DREYFUSS, Pauline Newman Professor of Law, New York University School of Law

JOHN F. DUFFY, Associate Professor of Law, William and Mary School of Law

STEPHEN G. KUNIN, Deputy Commissioner for Patent Examination Policy, United States PTO

GLYNN S. LUNNEY, JR., Professor of Law, Tulane Law School

F. M. SCHERER, Roy E. Larson Professor of Public Policy and Management, Harvard University

GERALD SOBEL, Kaye Scholer LLP

HERBERT C. WAMSLEY, Executive Director, Intellectual Property Owners Association

P R O C E E D I N G S

MR. COHEN: I assume we'll be joined by everybody as we move forward.

This morning our discussion was designed to be fairly global in nature. We heard discussion regarding some of the overall trends in Federal Circuit jurisprudence, and we considered, in general terms, the extent that economic and policy considerations have played in the Federal Circuit's thinking.

This afternoon what we'll do is we're going to shift from the general to the specific. And what I would like to do is proceed factor by factor through some of the key patentability criteria to see where the Federal Circuit has taken the doctrines and where economic policy considerations might suggest possibilities for further development.

We'll devote most of our time to obviousness, description and enablement, claim interpretation and equivalents, and I would hope at the end to pick up some of your thoughts on the Federal Circuit's role in shaping some of the evidentiary practices, the clear and convincing evidence standard and perhaps the patent applicant's duty of candor.

We have the good fortune to have retained the same set of panelists -- although they're not all seated

at the moment -- who participated in our morning session, and that permits me to jump right in without further introductions.

I think that Herb this morning referred to Section 103 and its obviousness inquiry as "the heart of patent law," so let's begin by going right to that heart. We're going to start with two presentations focusing on the obviousness inquiry.

Let's start with Glynn Lunney, author of an intriguing article on the topic, that he will help lead us through with the magic of some slides.

PROFESSOR LUNNEY: Thank you. My name is Glynn Lunney. This discussion today is based largely on an article, "E-Obviousness," that I presented at George Washington University a couple years ago. It's in published form at the Michigan Journal of Telecommunications and Technology.

It concerned, at the time I initially presented it, principally the obviousness issue, where is it, where did it start, where are we now and why are we there. And what I'm going to do in the presentation is, I hope, try to walk through all three of the issues that Hillary has identified for us today, that is, what are the trends in the area, give a positive or descriptive account of why the trends are what they are, what has

the Federal Circuit done, and then third try to give an economic analysis that may cast a light on whether we're at the right place on the obviousness issue.

The first thing I did in setting up the presentation is I went back through patent cases for the last 60 years, not all of them but a lot of them, and came across different issues to try and get a sense for how patent jurisprudence has changed at the appellate level.

This quote is something I came across in that research, and it's something certainly that suggests what a lot of current commentators and attorneys feel has become the Federal Circuit's practice. "Appealing from a decree adjudging the patent valid, but not infringed, plaintiffs are here... [complaining] of the decree as another in that long and growing list of judgments in patent infringement suits which, finding the patent valid but not infringed, keep the promise of the patent to the ear while they break it to the hope...."

Certainly one theme that emerged from my research is that the Federal Circuit seems to have a strong presumption that a patent is going to be valid but has a very narrow infringement doctrine, so it was interesting to me that I found this not in a Federal Circuit case but in a Fifth Circuit case from 1946.

I think that it's a useful reminder that not everything that we think of as new is necessarily new. These may be cycles that we've seen before, issues that we've seen before, and so certainly it bears looking at how things have gone, not only over the last four or five years, but over the last 50 to 60 years.

So I looked at cases, taking six time periods from the pre-Federal-Circuit era. You can see on the slide they start in 1944 and then range up until 1981-'82. I realize, of course, that the Federal Circuit was created in 1982, but it didn't actually start rendering any patent infringement decisions until 1983 and really got into the groove in 1984.

So we have six time periods from 1982 and before, the pre-Federal-Circuit era, and then five time periods from 1984 on, where I read all of the cases involving litigated patents. These are infringement cases. So not appeals from USPTO denials. Moreover, they're utility patents, so anything about plants or designs has been excluded.

This is what I found. In the pre-Federal-Circuit era, patents were held invalid, where invalidity was addressed in the opinion at the appellate level, between say 46 and 62 percent of the time.

Now, keep in mind that these are appealed cases,

and there's a self-selection bias that's going on. Not many patent attorneys are going to take cases on appeal where they're certain to lose. Not many patent attorneys are going to take appeals where they're certain to win. You would expect in those cases some type of settlement to be reached.

So you would expect this number to hover around 50 percent. And then after the Federal Circuit came on board, we have a range in 1984-'85, starting about 40 percent and falling off sharply in '94-'95, only 25 percent in that year held invalid, up to 62 percent in '96-'97 and then going from there.

I went ahead and averaged the numbers for the samples I chose. On average 56 percent of the patents were held invalid before the advent of the Federal Circuit in the time period I looked at; after the Federal Circuit came on board, about 49 percent.

Now, this doesn't really tell us very much about patent litigation, as I said, because you can expect patent attorneys to decide to take patent appeals only in close cases or typically only in close cases. We should expect about a 50 percent validity rate, and that's about what we get. The 56 percent is plus or minus essentially indistinguishable, statistically indistinguishable from the 49 percent.

One thing that was interesting to me here is that a second thing we're looking for in patent litigation is certainty. We want parties to be able to predict how the court is going to come out based upon the legal rules, and there's a lot more variability in the outcomes in the post-Federal-Circuit era. In the pre-Federal-Circuit era, the invalidity rate ranged from 46 to 62 percent, so plus or minus 10 percent of the average.

In contrast in the post-Federal-Circuit era it ranged from 25 percent to 62 percent, plus or minus 24 percent from the average, so a lot more variability suggests a lot less predictability. Part of that may be a new court, but I think part of that is something more.

The second issue I wanted to look at is what role does obviousness play. It's been described as the heart of the patent system in one sense, the real bar, if you will, in terms of getting a patent.

In the pre-Federal-Circuit era, that was clearly true. Between 66 and 80 percent of those patents that were held invalid were held invalid because of obviousness. In contrast in the Federal Circuit era, only between 20 and 50 percent of those patents held invalid were held invalid because of obviousness.

So this is not telling us about the pro-patent

bias of the Federal Circuit or anything of that sort. These are the patents that were held invalid, how important was obviousness as a means for invalidating the patent? Its importance is certainly diminished, dropping from an average of roughly 73 percent in the pre-Federal-Circuit era as a basis for holding a patent invalid to 33 percent, after the advent of the Federal Circuit.

Moreover, this doesn't really tell the whole story because in the pre-Federal-Circuit era, another thing that became clear was invalidity was almost always addressed. If you look at the number of cases in which invalidity was not addressed in the pre-Federal-Circuit era, let me just skip over to the averages slide here, roughly 20 percent of the cases did not address validity at all.

There were a couple reasons that came to light for this. First, sometimes a defendant chose not to challenge the validity of the patent for some reason or another, admitted its validity. Second, sometimes it was an appellate reversal of a summary judgment, and the court said something, "Well, there are fact issues with regard to validity," reversed the summary judgment, but did not itself rule on the validity of the patent.

Third, in some of the cases, the court said

"Well, it's so clearly non-infringing that we won't bother to discuss the validity of the patent," but that was a fairly rare result. Only 20 percent of the cases, for all of those various reasons, was invalidity not addressed.

In contrast, with the advent of the Federal Circuit, that average shot up quite high. In 60 percent of the appellate cases that were decided since 1984 for the sample periods I looked at, invalidity was simply not addressed, and the predominant reason among that was because the patent was found to be not infringed as a matter of law.

So those were my initial results. So the question came to mind, Well, why has obviousness diminished and why is invalidity not being addressed in the cases? And in thinking about that, some of the reasons are clear. In terms of the obviousness standard itself, the Federal Circuit has certainly changed that in two important respects: One, increasing the importance of so-called secondary considerations, or as the Federal Circuit prefers, objective evidence of non-obviousness, and second, it's changed the rules with respect to combination patents, requiring some suggestion or motivation in the prior art for combining elements from different prior art before you can find a patent to be

invalid because of obviousness.

Those two doctrinal changes have certainly been important, but I think something more is going on, and what I have called it is the "simply property perspective." It was articulated first by Chief Judge Markey in 1983, April 1983, at a speech at the University of Chicago and subsequently made its way into Federal Circuit jurisprudence very early on.

"A patent, under the statute, is property. Nowhere in any statute is a patent described as a monopoly. The patent right is but the right to exclude others, the very definition of 'property.'"

So by taking patents outside the rubric of monopoly and putting them into the rubric of property, you've not only changed the names -- and unlike Juliet I think names matter a great deal, so what you call a thing will influence how we perceive it -- it seemed to shift the court's perspective on the desirability of patents altogether.

Under the traditional perspective, historical perspective, patents were monopoly, but they are monopolies we tolerate because of the incentives they supposedly create for desirable innovation. So it's a matter of balancing the deadweight loss from the monopoly versus the incentives for innovation.

Under that approach, obviousness has a very sensible meaning and purpose. What you want to do is weed out those inventions which would not be disclosed or devised but for the inducement of a patent, as the court explained in the Graham versus John Deere case.

In contrast, under the simply property perspective, there is no monopoly. There is no deadweight loss. The higher prices that a patent holder for a valuable patent can charge is nothing more than the higher prices that a New York property owner can charge for land in New York. It's simply a reflection that some property is more valuable than others. It's not a monopoly at all.

In the absence of any deadweight loss, the cost/benefit balance shifts dramatically in favor of patents. There would be then no cost in a sense to granting patents, except perhaps some transition costs arising from blocking patents, perhaps some things of that sort.

In the absence of the deadweight loss, you end up with something like a presumptive entitlement to a patent. If your contribution is new, even if it's only a slight advance, well, you're entitled to a patent, but you're entitled only to a patent with respect to your contribution.

So in terms of the trend, it looks like non-obviousness has become important. In a positive or descriptive sense, it looks like the simply property perspective may have played some role in that. And then the third step that I took is to look at an economic model to see if we can make any sense of that as a normative decision or choice.

Here I'm a little more skeptical than my share about how much help economics can be in this area. If you ask an economist what's the interest rate going to be in six months, and you gave them a hundred million dollars to figure that out, they would spend the hundred million dollars and they would come back to you and say, "Well, my best estimate of what the interest rate will be in six months is for you to look in the paper and see what the interest rate is today, and that's my best guess."

That would be the best that economics could do today. The best that we could do is tell you to look at the paper today, same interest rate in six months. So to think that economics can tell us very much over any sort of long-term period about what the effects of having a patent system or having a particular element, pulling a particular policy lever within the patent system, is I think asking a bit more than maybe what economics is

capable of today.

Nevertheless, I tried to set up an economic model. And I think economics is useful today as a story, as a parable, telling us something we may not otherwise see, and if it holds together and makes sense, then maybe we should put weight to it. But we should not be quick to leap on to economic analysis simply because a model can be developed that generates a certain result because I can tell you that almost any model can be developed to generate almost any result.

So it's a question of whether the model and its assumptions are plausible, a good story. So here's the story I told.

Let's say that we have two sets of investments that people are considering investing resources in. We have Set 1. We have Set 2. We have five choices in each, and obviously a profit-motivated person is going to invest in the more valuable choices. But we have what we might think of as the social value, what's the invention worth to the society as a whole, and then we also have a private value, the private return. So those are one thing we need to keep in mind.

Second, if we're going to talk about a property system allocating resources, what we should be thinking about is constrained resources. We only have so much.

That's why we have to allocate it among the available investments. So here the resource constraint is we only have enough of this creativity, whatever it might be, to do four of these investments. So the question is, which ones should we do?

Well, from a social perspective it's clear. We want to pick 1A, 1B, 2A and 2B. Those are the most valuable social uses of the resources.

But what happens in the real world? In the real world, there might well be differences between the Set 1 private returns and the Set 2 private returns. If for one reason or another, Set 2 investments are easier to copy, have a shorter natural lead time or things of that sort, they're not going to be able to capture all of the social value. So I put up some numbers suggesting slightly lower returns for the Set 2 investments.

On the other hand, Set 1 may be slightly more difficult to copy or imitate. It might have a slightly longer natural lead time period. And so again you don't capture the full social value, but you get a little more of it than you would with a Set 2 investment.

So then the question is: Now we have enough resources for four of these investments, where are private, profit-motivated firms going to invest in? Well, the highest private return is by investing in 1A,

1B, 1C and 1D. 1D, even though it had a much lower social value than 2A, has a higher private return. So that's where the resources would go in the absence of any patent protection for either Set 1 or Set 2 investments.

What if we gave a patent to the Set 2 investments only? Well, a patent would give you a slightly longer lead time period, make it slightly more difficult to work around and come up with a competitive substitute, so the private return is going to get bumped up a little bit, again not up to the full social value, we're not going to get close to that, but we might get bumped up a little bit. And here I suggest that we're going to bump it up, make it essentially equivalent to the Set 1 investments.

Now when our private firms, acting for themselves, profit-motivated, decide where to invest their resources, it's going to be in 1A, 2A, 1B and 2B, the social optimum. That's where we want the resources to be granted.

Now, the question we need to know in terms of obviousness is -- this is a type of weeding out approach, as Graham put it. Here we're giving patents only to the Set 2 investments because they're the set of investments that would not be devised but for the inducement of a

patent.

Well, what if we go with a low standard of obviousness and give patents for both? They're all inventions. They're all socially desirable. Well, I don't know if they're inventions. They're all new. They're all socially desirable.

If we give patents to both, the Set 2 returns remain the same as they were in case 2, same return because same situation. But now the Set 1 investments have a little bit longer lead time period, a little more expensive to work around because they have patents too now, so we bump up their private returns again by an arbitrary amount. And what's a private, profit-motivated firm going to do now?

Well, the profit-maximizing set of investments here are again 1A through 1D, and so by giving patents to both by having a low standard of obviousness, we're going to recreate the very misallocation of resources the patent system was meant to solve.

So the question is: Which patent standard should we have, a high or low standard for obviousness? It seems clear to me that this economic model, as simple as it is, suggests that Graham was right. We should try and weed out and give a patent only to those inventions that would not have been devised but for the

inducement of a patent.

Now, how do we do that? Well, I think as Professor Scherer did say, we do know some of the things that suggest when invention is not likely in the absence of a patent. And one of those things, let's see if I can get to it, is the creative investment fraction. That is, where you have a large R&D investment in the product or process that you've invented relative to the market price of the invention, and if you combine that with sort of ease of copying by copying competitors, those are the types of factual situations that together suggest that the innovation would not likely occur, it may occur, but not likely to occur in the absence of a patent. And that might be a more useful approach to the obviousness issue: Look directly at whether the circumstances present are those that suggest that a patent is, if not absolutely necessary, at least we're in the range of inventions where a patent is likely to be necessary to ensure the invention, the innovation, the disclosure at issue.

So that's my presentation. I'm trying to keep within the time limits.

MR. COHEN: We're going to follow this with a second presentation. This one from John Duffy, who will give us a few additional perspectives on the obviousness

issue.

PROFESSOR DUFFY: Well, I'm going to talk a little bit about what I think the economics of the nonobviousness doctrine are and a little bit more about the legal process, and I think you'll find that some of what I say very much complements what Professor Lunney has already said.

The first point I want to make is I actually think one way to think about innovation, particularly from the FTC standpoint, an agency that deals with regulated industries and antitrust all the time, is to try and actually think of it very similar to other industries that are afflicted with natural monopoly tendencies.

Like a traditional natural monopoly, innovation has a high fixed cost -- that's the cost of producing the relevant information -- and, at least in some industries, a low marginal cost. As Professor Scherer mentioned, one good example is the pharmaceutical industry. Low marginal cost, that's the cost of using the information each additional time. You could say it can vary somewhat. It can be the cost of transmitting the information or using it a second or third time. I think it's low. It may in some cases be equivalent to a zero marginal cost.

So again innovation is a natural monopoly. It looks a lot like a traditional natural monopoly because it has this feature of declining average cost, continuously declining average cost. I must note here that, first of all, these are actual uses of the information. They're not the products that are produced.

You can think of a firm that is, let's say, producing widgets. And into that firm, one factor of production is electricity, which might be a declining cost industry. Another product that is flowing into that firm is information, and it is separate from, I think you can think of it as separate from the actual widgets that are coming out the other end of it. So these are the actual uses.

I want to make this one point clear: A lot of times in the intellectual property literature, we see the term non-rival consumption, and I think that's really equivalent and should be made equivalent to a zero marginal cost. In other words, using the information another time has a zero marginal or zero or close to zero marginal cost each additional time. And I think that at least builds a bridge between the standard academic literature or the standard terminology in the intellectual property literature versus the regulated

industries or maybe the antitrust literature that maybe some of the regulators at the FTC might be more familiar with.

Let me go to my next slide here. The reasons to regulate I think are very much the same. Like a natural monopoly, production by a single firm is optimal. Also we have the theory of destructive competition, which is also in our natural monopoly literature.

In the natural monopoly literature, we often see the theory of destructive competition, that if there was not government regulation, competition would drive price to marginal cost so that the fixed cost could never be recovered by firms. And that would be destructive of the firms of the industry, and as a result firms would no longer invest in that industry.

I think that that is the same theory in intellectual property law. For a variety of reasons I think it is more plausible in intellectual property law, certainly in some industries, that without regulation people just will not invest in innovation because they know that after they innovate, the price will be pushed down to marginal cost, and they'll never be able to recover their research and development cost.

The regulatory technique is a temporally limited exclusive franchise, which is very similar actually to

the way we regulated -- the way this country and other countries regulated natural monopoly in, for example, the 18th and 19th Century bridge regulation. And actually Professor Lunney and some judges on the Federal Circuit have drawn this distinction between property and exclusive franchises.

I don't think there's as much riding on that as maybe some of the judges on the Federal Circuit think. In fact, actually one of the interesting features of the 19th Century bridge regulation is you got this exclusive franchise to build this natural monopoly good, a large bridge that had large sunk costs and very, very low or zero marginal cost. You've got an exclusive franchise. You could charge the tolls during that.

One thing is that after your 30 or 40 year exclusive franchise expired, one interesting thing is not only did you lose your exclusive franchise, actually if you go back and look at these franchises, you lost your bridge. The bridge was no longer yours. The physical property actually became part of the state. So to the extent that we think there's something radically different between physical property and intellectual property, I don't think that that's necessarily true.

Now, what's the role of the nonobviousness doctrine? I think this very much complements what

Professor Lunney has already said. I think it assures that the fixed costs of producing the relevant innovation are, in fact, substantial. In other words, it's assuring that this industry that we're going to give an exclusive franchise is in fact a natural monopoly industry.

So you could say what's a nonobviousness doctrine doing? It's making sure that the innovation, the relevant innovation is more like something like, I don't know what you would say is a natural monopoly, maybe something like local telephone service rather than long distance telephone service.

Now, it can be considered, it's oftentimes called a non-triviality requirement. But the key here, and let me go to my next slide, is that it's technical triviality that we're measuring here. The key question for nonobviousness to me has always been, Why not permit trivial patents?

I think that's an important question to answer because in another area of law, the utility doctrine in patent law, the courts have long adopted a stance in most areas that simply says, "We don't care if something is more or less useful than what is out there. We'll let the market decide that." If something is an utter triviality, if it's worthless -- as an example to my

students I always give the cooking chickens with a cyclotron, which is a very expensive machine used for research -- you can get a patent on that. It's useful because it cooks chicken, but whether it will succeed in the marketplace, we don't know and we don't care.

So why don't we take that approach with the nonobviousness doctrine? I think there are two answers, and they're quite different in terms of effect of what we think the doctrine should look like.

One is a profusion of paltry patents. In other words, you just have thousands and thousands of these patents, a swarm of patents out there. Each patent individually does not impose significant output constraints, but collectively they're very expensive to search and license, and as Professor Scherer said, they may be a mine field. They generate a great deal of litigation due to accidental infringements. You're trying to manufacture something. You step on a patent. You blow your leg off. That's, I think, one reason.

I think another reason is, and I think this may actually be at least as significant and sometimes overlooked, are the really economically significant patents. And the key here to realize is that technical triviality does not at all equal economic triviality. You can have an extraordinarily valuable patent that is

technically trivial, so that a patent on an obvious development can impose significant output constraints.

Now, I have what I think is a poster child for this branch of the nonobviousness doctrine. It's a very important historical case. It didn't generate a really great appellate opinion, so it's not in the case books very often, but it's the case of the Selden patent. This is a patent on the automobile. It was filed by an inventor who was an amateur tinkerer in automobiles, but the gentleman's real skill was he was a patent attorney.

He actually got this patent through the Patent Office, and this is the claim language. Actually I cut and pasted the claim language here. It's a combination with a road locomotive. I'm just thinking about my car that I drove up here from Williamsburg to Washington. I have a road locomotive. It has running gear, propelling wheels, steering wheel. It's a liquid hydrocarbon gas engine of the compression type, which means my cylinders compress the gas before ignition. I have a fuel tank. I have a power shaft. I have a clutch, and I have a carriage that conveys me up here.

This claim covers my car. It covers almost every car that's on the road. Indeed I think the only type of car and truck it wouldn't cover is -- I don't

think it covers the rotary engine cars because it requires cylinders, but every other car it covers.

I'm not sure whether it covers diesel engines. I'm not sure about that, but anyway, it covers a lot of cars. I thought here I would throw in a drawing. My car doesn't look like that at all, I promise, but the claim language does cover my car, even though this is an expired patent.

The points from the Selden experience is, first, to recognize quite frankly that Selden's combination may very well have been novel at the time he made it. That's debatable, but gasoline engines were relatively new at the time, and he might have been the first one to mount one on a car.

If he wasn't the first one to mount one on a car, then there clearly was somebody else who was the first person to mount one on a car, and if that person were just as sophisticated with the patent law or willing to game the patent system as much, we would have the same problem presented.

Nonetheless, we can think it's novel and still think the development itself was trivial. We know this, I think, for many reasons. Many individuals independently thought to use gasoline engines for cars as soon as the gasoline engine was developed. Of

course, you might think it's trivial that any new form of engine that's output is measured in horsepower, is one of the things you might think of doing with it is replacing a horse with it. This patent does impose an unnecessary output constraint, which I think is one bad effect of it.

Another key point to recognize about the nonobviousness doctrine is that it is not pro-inventor -- a lax nonobviousness doctrine -- because it can decrease the royalties to other inventors, to people who really did invent. Selden did demand substantial royalties, in the hundreds of thousands of dollars, before his patent was narrowed to the effect of declaring it invalid, although it had only one year left to go. That meant to some extent he was raising prices and perhaps depriving other people who had patents on various pieces of new car technology from some of their rightful royalties.

Now, I think that the non-obviousness or the obviousness inquiry has to, in each case, answer the question, Why does a valuable novelty appear? Again we're dealing with valuable novelties, not trivial novelties, and I think the car is a valuable novelty. I think in each case there are two possible explanations. One is the inventor's intellectual contribution. The second is exogenous forces, technological change I think

being I think the most important thing for a court to consider.

The Selden case: The reason the car with a gasoline engine first appeared at around the time Selden was doing his work was not because Selden was a brilliant individual. It was because the gasoline engine was new. Similarly for one rather famous patent, the so-called One Click patent that's owned by Amazon.com, you might say why is that? If that's such a valuable commercial device, why is it that it appeared right around 1995?

The answer might very well be, well, the Internet really took off at that time, and businesses came onto the Internet at that time, and then you have an explanation.

Another possibility is a regulatory change. Actually the case that I cite there I think is a case where the Federal Circuit got the right answer, did declare a patent obvious, and they had a basic reason. Actually it was a combination of a common cold drug with ibuprofen in a single tablet, and that had never been done before. And it was very successful commercially, combining ibuprofen with a common cold remedy.

Why? Why did it happen in the late 1980s? The case arose later but the patent was in the 1980s. Why

did it happen? It was a regulatory change. Ibuprofen became an over-the-counter drug, and as soon as that happened, some firm decided it would be a good time to actually combine in a single tablet the over-the-counter cold drug with ibuprofen.

Another possibility is market change, for example, changed costs of materials, which I think can explain one of the most famous cases, Hotchkiss versus Greenwood, or perhaps increased labor cost, Sakraida versus Ag Pro. For those of you that are familiar with that opinion, it looks a lot like this is a patent on simply increased uses of capital in the farming industry, rather than any technical insight.

I won't go through the historical development of the obviousness doctrine. I think the only important thing to recognize here is that it is relatively recent. It wasn't codified until a half century ago, and it took a century to develop. In part actually this historical development, I think, reinforces the reasons why novelties appear.

If you're in a relatively static society, then if a novelty -- if somebody comes up with something that's really valuable and very new, it might very well be because of the intellectual efforts of that individual. Where society is not static, where

there's constantly new technologies arising, then it may be the case that these exogenous changes are accounting for the formation of new combinations, rather than intellectual effort.

I want to switch gears now slightly to the legal process. The main case, as Herb Wamsley said in the morning, is Graham versus John Deere. It has three primary factors, which courts and the Patent and Trademark Office are required to make findings on before they rule on obviousness, and then the secondary factors, or objective evidence, as the Federal Circuit says. The other important part about Graham is that it did hold that obviousness is a question of law.

The important thing to recognize about Graham is that if you look through these primary factors, they sort of leave you off at the very point you think the analysis should start. You make the finding about what's in the prior art, you identify the differences, and you identify what the level of skill is in the art. But then the decision in Graham really doesn't tell you what to do.

You've got this gap. In every case you've identified a gap between what's in the prior art and this invention, this claimed invention. And Graham, you can read the opinion time and time again, it doesn't

tell you how to judge whether the gap is sufficient for a patent.

So they identify the relevant question, but they don't really tell you how to answer that question, except perhaps with the secondary factors. Except the Court says that these are subtests; they're not the primary tests of patentability -- that's what the Supreme Court has said -- and they may tip the scales of patentability. So one of the key problems with Graham versus John Deere is that it does not give guidance to the lower courts as to how they're to evaluate this.

The Federal Circuit has supplied a metric for evaluating this question. I think the key policy issue is whether it's the right metric. To establish a prima facie case of obviousness, the decision maker, either the Patent Office or the judges in a lower court or at the Federal Circuit, have to identify some suggestion, teaching or motivation to combine references.

The PTO at the agency level bears the burden of establishing this, although it does receive or it supposedly, at least according to case law, receives deference in interpreting what the references teach.

Secondary considerations I think are important. The Federal Circuit may have made them more important, but they're still I think less important than this

suggestion test, which has become extremely important.

Now, here are the features that I think really favor findings of nonobviousness, in other words, favor or tip the scales in favor of nonobviousness. First, putting the burden on the PTO. That's not in the Supreme Court's jurisprudence. That's a feature of Federal Circuit jurisprudence. The suggestion test, again not in the Supreme Court's jurisprudence, only a feature of the Federal Circuit's jurisprudence. An increased importance of the secondary factors, especially commercial success, another feature of the Federal Circuit.

And then I think this is one more factor, which is the strong presumption of validity for issued patents. Clear and convincing evidence is required to overcome an issued patent, even if the PTO did not consider the relevant prior art. The presumption of validity continues even if the PTO didn't find the right prior art.

Now, of course to those points, I think there are some counterpoints in the case law. One is that the Federal Circuit has allowed for implicit suggestions in the case law. In other words, the motivation can come not from any particular documentary evidence, but from the nature of the problem to be solved as well as other articulations of this feature of the doctrine.

In a way, this could be extremely powerful

because supposedly the Federal Circuit says it will defer to the PTO in interpreting the prior art. I'm sure Steve Kunin will say that that's not really true, but at least you might think that you could imagine perhaps a different court applying the exact same precedents and the exact same case law and deferring to the PTO quite a bit because the PTO would come up and say, "There's an implicit suggestion to combine in this case law," and the Federal Circuit saying, "We defer to the PTO in interpreting the prior art, that's a question of fact," and affirming the judgment.

So I think it's a point in the case law. I think it's fair to say that that's not perhaps the feel of the case law, but nonetheless, this is a way -- if the case law were to shift in favor of more findings of obviousness, this is one way to do it.

Another way is the commercial success nexus. One of the key features of commercial success, which is an objective criterion of patent validity, many people have noted, including Professor Lunney and others, that if you say commercial success weighs in favor of patent validity, you effectively eliminate the application of obviousness doctrine to situations like the Selden patent, things where in fact actually the patent has commercial value, which tend to be all

litigated cases.

There is a counterpoint in the Federal Circuit case law. The Federal Circuit says that in fact a nexus is required between the invention, in other words, the inventive contribution of the inventor in the case, and the commercial success.

Finally, as a counterpoint to the prior point, the Federal Circuit has said the failure of the PTO to find relevant prior art, while not removing the presumption of validity, does weaken issued patents. It partially discharges the burden on the party challenging a patent.

If we were looking for suggested changes in this case law, I think that, first of all, the Federal Circuit case law, which has several novelties in it, and the Supreme Court itself has not looked at this issue in over a quarter century -- there are several issues that could be appealed to the Supreme Court. And that would just take Executive Branch action, action by the Department of Justice and the Patent and Trademark Office in actually seeking certiorari.

One is the suggestion test. The entire test, not even the levels of deference, but the entire test is not in Supreme Court precedent. And indeed if you look at Supreme Court cases, there's no doubt in my mind that

most Supreme Court opinions that had a finding of obviousness would fail the suggestion test, that in fact the Supreme Court did not identify any suggested combination in the prior art when it did its analysis.

Commercial success: I think one way to limit commercial success as a secondary factor is to try to limit commercial success to situations where the patentee can prove that no exogenous changes account for success and perhaps putting some burden on the patentee to prove that exogenous changes like other technological changes or market changes are not responsible for the appearance of the novelty in the market.

The final is the presumption of validity. I think again the Supreme Court has not said that the presumption of validity continues even when the PTO has not considered the relevant prior art. And that would be something that I think the Supreme Court would probably be open to that kind of argument.

Greater use of reexamination: We've talked about that. That's equivalent to an opposition, a post-grant opposition procedure.

Finally, a sort of change, which no one will like, but this is sort of an idea that I have, which is instead of having the PTO have a monopoly on the examination system, instead actually authorize private

firms to examine the prior art. They would have to be paid by the inventor. Some firms, as long as you tied the presumption that the patent was entitled to in litigation, tied to the degree or the integrity of the examination, there wouldn't necessarily have to be a problem, and you might actually get more rigorous examinations.

It would be at least interesting to see how the market would shake out. You might have some firms that just issue patents on a registration basis. Those patents might have a presumption of -- with no presumption or even a presumption of invalidity, on the theory that you've just gotten your patent registered, you've done nothing so far, so if you're going to bring this into litigation, you have a heavy burden to prove that you are entitled to a patent.

On the other hand, some firms might actually have a gold standard. In other words, they actually might base their reputation and their business model on examining patents very rigorously and making it clear that once they've examined a patent, it's really a great patent. And that could actually be something that could come into evidence in the future of litigation.

Less promising avenues I think are to seek a Supreme Court ruling that requires greater deference to

the PTO's obviousness determinations. As much as I'm a fan of administrative law, and I've written in that area, and I think these rules with deference sometimes make a difference, I really think it's going to be to some extent hard for it to make a difference, to make a Supreme Court ruling that just tweaks the level of deference to the PTO make a difference on the ground in the real world, in part because I think the Supreme Court already did this in the Zurko case, and on remand the Federal Circuit was still able to overturn the PTO in Zurko.

This is my final point, relying on patent scope doctrines: Maybe we can talk about this in the question-and-answer period. I think that this is a less promising avenue than the nonobviousness doctrine to try and limit economically significant patents that have little technical merit, in part because you still need to have an inquiry into technical merit. You still need the tools in your litigation or your legal process to evaluate whether something has technical merit.

The legal tools for limiting patent scope, I think, are actually not as well developed as the tools for limiting the obviousness inquiry. But I can talk a little bit more about why I think that's so.

Thank you. I think that's the last slide.

Yes.

MR. COHEN: I would like to thank both of you, outstanding presentations. Let's open this up to some discussion. And perhaps we can again start with the general and then move on with the more specific.

Let's start with the principles that we heard articulated first. I think I heard from both of you a bit of a recognition of the significance of a "but for" test here as an underlying principle. Maybe we can get some comments from people whether this really ought to be the yardstick against which we're measuring obviousness determinations, and if so, if it is, some comments on how Federal Circuit thinking has applied this yardstick.

Anybody want to begin?

MR. SOBEL: I would like to make a comment which I think relates to the first thing you said.

Both Professor Lunney and Professor Duffy I think said that we want patents, this certainly from Professor Lunney, to induce inventions that wouldn't otherwise be made. And then that was explained further, so if you have a large R&D expenditure in making the invention, we need a patent in order to induce that effort and that expenditure.

And the way Professor Duffy put it, if I heard

it correctly, is that we had a high fixed cost -- in making his analogy to a natural monopoly -- we had a high fixed cost in the patented invention and a low cost for use of the information, slight. And I wanted to observe that if I heard those two comments, which are about the same, correctly, that it sometimes happens that the cost of discovery is small, and what then often happens is you need a very large expenditure to develop it into something useful, something saleable, a product.

So to take an example that was involved in xerography, which is a case that I tried in SCM v. Xerox and that example, also I mentioned Mike's book before, for whatever reason Mike chose to put that in his chapter on patents: Chester Carlson invented dry printing or xerography pretty much in his kitchen, between the New York public library where he did his thinking and reading and his kitchen. Very primitive. It didn't cost much. Quite ingenious.

Yet to make that useful, there were a few years when there wasn't a lot of development activity, but he did this work in 1936. There was some time lost in the war. And it took until 1960 to develop a saleable product. And there had to be a lot of other inventions made, and a lot of technological development that was not patentable, but there was a lot of it that was

patentable. So that you could think of the development process, using that as an example, and I used this at the trial, as an inverted funnel.

So there may be great ingenuity at the bottom of the funnel, but it didn't cost much. But as you progress towards what was called the 914 copier, the first office dry copier, plain paper copier, the expenses got greater and greater. While this may not be inconsistent with what was said, I think it supplements what was said. If you didn't have patents, that investment would not have been made.

The Haloid Company, to choose that example again -- and this was part of our defense against Section 2 claims -- the Haloid Company wouldn't have made the investment without the patents. That exclusivity was necessary to encourage that work, so I think that kind of amplifies what was said.

MR. COHEN: Let's try Mike Scherer on this.

PROFESSOR SCHERER: Let me come directly to Gerry's point. That's quite general. That kind of phenomena happens very commonly. In the book a bunch of us did in 1958, we give the case of nylon. And if my memory is roughly correct, DuPont had the basic nylon polymer after an expenditure of about $200,000, but before you actually had a product that could be used in

garments, in fabrics, it was about $10 million research and development.

There's a further complication along the same line which would lead me to go to the bottom line and say, you cannot decide these costs-of-development questions in the context of a specific patent application. You must look at it in terms of a general technological field.

Pharmaceuticals, about which I think Gerry knows something, a lot in fact, is an example of the molecule. When you get an interesting molecule, you patent it, and then about that time you start going into clinical trials. And of the molecules that go in the clinical trials, 23 percent on average emerge as approved new drugs. 77 percent drop out for one reason or another.

So then you've already had an attrition process during the clinical trials, which are very, very expensive. Then you get the product on the market, and Henry Grabowski's work shows that only about 33 percent of the products that go onto the market cover their average R&D costs, including the prorated costs of failures. And so here is more attrition.

If you look at a particular drug, you might conclude, Hey, this particular drug costs very little.

You put in 15 million for clinical tests, and, wow, they're making a billion dollars of profits a year. But you have to look at the larger picture of the many failures. And therefore you can only proceed general technological class by general technological class, if you were to try to devise some such standard of inventiveness and obviousness.

Let me just make a very small second point. I was shocked, shocked, shocked to learn that the appellate court for the Federal Circuit is drawing this distinction between property, which is innocuous, and monopoly, which has all these bad effects. I think they should be chained and drawn into a classroom to study the economics of company towns in the 19th Century, where all the property was owned by a company. Transportation was very expensive. The distance to the next general store might be a five mile walk, ten mile walk.

The company owned the general store. It owned all the other facilities, simply owned them, that's all, property. And yet they had tremendous monopoly power over the lives of those who lived in the company town.

MR. COHEN: Let's try Dan and then Stephen.

PROFESSOR BURK: What I really want to ask John Duffy is whether he thinks there's a new line of business for Arthur Andersen in intellectual property

examinations, but I won't ask that.

PROFESSOR DUFFY: You're right, that I've chosen the word "audit." It's probably not the right word to choose.

PROFESSOR BURK: Anyway, I may end up sort of restating what Gerry Sobel said in different terminology. But I guess the thing that's surprising about both presentations, which I liked very much the presentations, but typically the economic analysis of obviousness, as done by Rob Merges and Karen Boyd and a number of other people say more or less what we've been hearing, which is that it's about risk, and it's about the risk of innovation rather than the risk of invention, that invention happens anyway or may not need much stimulus. But the question then becomes, Do we have some very mechanistic type of incentive to get people to overcome the risk of development, of bringing the thing to market. And the suggestion again being that, as Professor Scherer just said, that may go by industry or that may go by technology, which means that you may have differential approaches to obviousness by technology or by industrial sector.

Maybe I missed it, but I didn't really hear the discussion of innovation or risk or incentive to develop in the presentations. Maybe that's what was meant by

technical complexity versus economic importance, but I didn't hear that, so I would be curious to hear whether that was part of the presentation and I missed it or if it's a different approach.

MR. COHEN: Let's hold, Steve, and give Glynn and John an opportunity to answer briefly.

PROFESSOR LUNNEY: I won't speak for John, but I'm pretty sure he probably had the same perspective I did. Whenever you give presentations, things you spell out in a lot more detail in your article get shortened. And certainly I'm not considering the creative investment fraction when I talked about that invention cost. I was focusing not just on the moment of invention, if you will, but the innovation costs involved as well.

The question really is whether we should have an obviousness standard that tries to limit patents to those things that would not otherwise have been devised or introduced.

I think certainly that type of standard, however you may phrase it in particular cases, is going to want to think about risk, is going to want to think about innovation. But on the other hand if we don't want an obviousness standard that serves to weed out and limit patents to those things that would not have otherwise

been created or induced, then we don't need to worry about those things because we're going to give it as long as it's essentially new anyhow.

So I guess my point was if we can all agree that we need a standard that serves to weed out, then we can get down to the details of working out what a standard like that would look like, but it doesn't seem to me that the Federal Circuit right now is worrying too much about weeding out patents that would have been created in any event.

MR. COHEN: John, did you respond to directly?

PROFESSOR DUFFY: I do have a small response probably on the basis of all three comments, and I think there's two important caveats. One is the risk factor, which is no doubt very important when you're trying to figure out what the cost of an innovation is.

It's not the cost of the particular person who invented it because after all, you could have someone like Chester Carlson who was out there, who actually was looking for a better way to reproduce papers. And actually he choose a very unpromising technology because he actually knew, I'm sure you're more familiar with the facts than I am, but he actually said that he didn't look into photographic mechanisms because he knew Kodak was looking into that.

So he went into an unpromising field and put his resources in that because it was very risky that anything would be uncovered of value. And indeed even on the eve of the 914 copier, you can go back and you can look at Fortune Magazine and say there is this new company called Haloid in New York that's coming out with this crazy thing, and it's incredibly risky and they hope to be able to fit into this very competitive market, and it seems extremely risky that they'll actually make money. Of course, within a couple years profits were raining into the firm.

So I think you do have to take into account risk. And you also have to recognize that thousands of investigators might be looking into a problem, many of whom will be unsuccessful, and you have to include the cost of reaching the one innovation. You have to include all the failures in figuring out that cost, and that is a very important caveat in determining what you think the cost is, whereas I don't think the cost of developing the car, of actually putting the gasoline engine on the carriage with the running gears, was subject to the potential of failure or subject to much risk.

Everybody seemed to know that if you got a new engine of any kind, you would put on a carriage. That's the first thing that people did with just about any kind

of engine, put it on a carriage with some gears and see how it works. So the first point is risk. I totally agree that that should be included in the calculus.

The second point I think really goes to what your theory of the patent system is. Whether you think the patent system is to encourage investment prior to the granting of the patent or after the granting of the patent. Prior to the investment of the patent is traditionally the reward or incentive theory. After the granting of the patent is traditionally known as the prospect theory and named by Edmund Kitch of Chicago and Virginia law schools.

I think that there's something to be said for that, but I don't think it's the standard theory of the patent system, that what we really want to do is grant a patent and then encourage investment afterwards, that that's the main function of the patent system. If you really did believe that, you would say the nonobviousness doctrine doesn't make any sense because that's what Kitch said.

Kitch said if you believe in my theory, you don't want an obviousness doctrine. And I think that that's right, if you really believe it's to make investments afterwards. You just want to basically give a patent out to any new technological prospect with no

filter for obviousness. And then you could say, well, maybe what's wrong with the Selden patent is not that he got the patent but maybe some other games that he played with the patent system, rather than the fact that he got a patent. And maybe he should have been able to monopolize the car industry. He might have led to greater development of cars.

So anyway, I think that's a very fundamental question about whether you think it's before or after that we want to encourage the investment. Specifically with the Xerox case, a lot of the investment was after the initial patents, the pioneering patents, were granted. And it's true that the pioneering patents expired about a year after the 914 copier was put on the market, so what really kept things off the market were the follow-on patents. And that investment, the follow-on investment, can be protected by the follow-on patents.

MR. COHEN: Steve, you've been patient. Let me turn to you, and I'll also throw out to you and to anyone else who wants to comment, the suggestion test. Has this been a problem, or is it an advance? Any reactions on that as well?

MR. KUNIN: Good segue, Bill. I wanted to provide some observations on the presentations that were

made. I think it's interesting, as it was already mentioned, that in a limited time in making a presentation, you have to take your best shots, and you leave a lot on the sideline, but I think it's important since we're talking about standards of nonobviousness to kind of take a little bit more of an historical perspective to show that over the history of our patent system, there's been a lot of experimentation.

Way back in the early days of the patent system, we had the chicanery of the Flash of Genius Test. And of course subsequent to that, we had, as was mentioned, Hotchkiss versus Greenwood, which was more of a stabilizing influence. And of course we had in 1952 a codification of the case law to really include specifically a Section 103.

So there was this history of having a novelty standard, then sort of a common law standard of nonobviousness, but in 1952 we had a codification of nonobviousness as a condition of patentability. And, yes, the Supreme Court in Graham v. John Deere laid out some tests, but I do agree that, in fact, the important aspect of the glue of 103 was really missing from Graham v. John Deere.

I think we saw a bit of the problem with that in

going back in terms of the experimentation with cases like Anderson's-Black Rock, which reached back to the old A&P/Supermarket case. And I think what that did during the period of at least the 1970s and before the Federal Circuit occurred, and this I think in terms of some of the graphs showing invalidity in circuit courts or district courts, there was a lot of invalidity. Why? Because the test was synergism. If you couldn't show synergism, you couldn't meet the nonobviousness standard.

And of course like Flash of Genius, that was also considered to be a form of chicanery and an inappropriate standard. And there was then sort of an evolution, if you will, back to I think you would say more objectivity, and of course this kind of goes through a line of cases.

One of my favorite historical cases is In re. Winslow. This, for those of you who don't remember, Winslow is the inventor who has the patents on the walls around him, and then sees that there's two documents that provide an indication of what the way to solve a particular problem that exists in the prior art would be. And it's the "Aha" test.

Then later I think we found, even in the early genesis of the Federal Circuit, that in cases like In

re Keller in the early '80s that once again did reach back to cases like In re McLaughlin, there was this suggestion, but it was, What would be the collective suggestions based upon what would be presumed to be familiar to a person of ordinary skill in the art?

Once again, this would permit one to look at documents themselves and look at the information from the perspective of one of ordinary skill in the art, whether the suggestions might be express, implicit or inherent. But you would glean the level of skill in the art, and you would glean the information principally from the reference documents, but also with some level of technical knowledge and skill.

But I think what we find now is that not only must there be a suggestion, it seems like there must be an express motivation. It's almost that if you don't have the glue expressly leading you all the way, there isn't any basis to establish something would have been obvious.

You have to connect the dots I think very, very clearly from what is in the prior art. Or obviously from a standpoint of when you're in litigation, you have the opportunity to have some expert testimony on the science, which is I think helpful to district court judges, but is not available in the ex parte types of

proceedings that are in front of the Office.

I would say that some of the suggestions in terms of corrective mechanisms are ones that I think many authors have written about. One I think is, as opposed to eliminating a presumption of validity, to change the clear and convincing evidence standard to, let's say, a preponderance of the evidence, perhaps being, let's say, a little bit more realistic from the standpoint of permitting the presumption to be rebutted. And then there also have been some authors who have indicated that if there was a really effective patent correction mechanism, whether it's inter partes reexam or post grant, or the like, that maybe if your real effect is to provide a filter so that only the important patents are the ones that need to be dealt with, then you would essentially say no presumption of validity until they went through some kind of a reexamination. So that you would have sort of the gold seal or the gold standard of approval since you went through two gauntlets to get the patent confirmed and reconfirmed, and then you would get a presumption of validity, recognizing that that second type of gauntlet, if it's inter partes in nature, provides an opportunity to have a greater richness in the consideration.

MR. COHEN: Herb?

MR. WAMSLEY: I agree that the presentations by Professor Lunney and Professor Duffy were excellent. I think there was a great deal there that I would judge everybody on the panel could agree on.

Now, these hearings are grappling with the questions about how to improve a system that's been around for a long time. Somebody said this morning a lot of these questions are not new.

Professor Duffy, the example of the Selden patent in 1895 is an interesting one. According to Ford Motor Company at least, that patent was what in recent times has been called a submarine patent, which is another problem with the patent system that's maybe beyond what we have time to talk about today. But as I understand it, Mr. Selden was a very clever patent attorney, and he kept his invention bottled up for something like ten years. Then after manufacturers had started investing, he sprung the patent on them. The litigation went on for years.

You know, I suspect everybody on this panel agrees that we should have a reasonably high obviousness test, one that finds nonobvious only inventions that wouldn't have been made otherwise or for which there's some incentive needed. I think we're grappling with what a standard should be, and as a part of this question is whether the Federal Circuit has really

changed things much.

Now, another thing that's not new, and I would like to read a couple of sentences from the Graham v. Deere opinion of the Supreme Court in 1966. The Court said: "While we have focused attention on the appropriate standard to be applied by the courts, it must be remembered that the primary responsibility for sifting out unpatentable material lies in the Patent Office. To await litigation is -- for all practical purposes -- to debilitate the patent system."

Now, Professor Duffy, I think you said some of us would hate a couple of the ideas you put up there, and you're right. I for one hate the one about different kinds of examination by different authorities some of which would be --

PROFESSOR DUFFY: That's just a free market statement.

MR. WAMSLEY: It would be a very weak system. We have to remember the interest of the stakeholders who are the competitors of the patent owners and their interest in having certainty at an early stage about what the patent rights are in their industry. And if you don't have a system where the Patent and Trademark Office is doing a full examination of every case and applying an appropriate obviousness

standard, you don't get the unpatentable material sifted out, and you leave uncertainty.

MR. COHEN: Rochelle?

PROFESSOR DREYFUSS: A couple things. I really like the discussion on technological advances versus the risk of development, and I liked both of your presentations too, but I was little bit surprised by the last thing you said, John, where you said well, if you really were worried about the risk of development, then you would just get rid of the nonobviousness standard entirely. And I wonder why that would be the case.

Why wouldn't we just have a different kind of method of weeding out? Why wouldn't we perhaps use a standard that doesn't look at the particular technological advance, which in actual fact is only a proxy for this other question of what are the risks of development, and why not look directly at the risk of development?

I think a lot of the watering down on nonobviousness has come in the chemical field. And the reason it has come in the chemical field is because chemistry, speaking as a chemist, is a very mature field, theoretically. So that as a matter of fact, as a theoretical matter, there's nothing that's going to be nonobvious because as a theoretical matter, you can kind

of figure out what an awful lot of molecules are going to do based upon their structure. And there's enough synthetic chemistry out that that once you figure out the structure, it's not all that hard to build the molecule.

So you see the court sort of creating these new tests in order to keep chemical molecules patentable. And the reason that they're doing that is because of the risk of development problem that Mike brought up, that a molecule might be easy to create, but it's awfully hard to get it to market, especially if it's subject to some kind of a clearance procedure.

So I wonder whether we shouldn't be thinking bigger and thinking about whether or not we have the right test for obviousness rather than simply discarding it, if you kind of believe as I do, that Ed Kitch had a lot going for what he said in his article.

Then the second thing, to speak directly to Bill's questions on suggestion tests and on secondary considerations, and I hate to sound like a broken record, there are institutional considerations in that too. I think part of the reason the Federal Circuit likes the secondary considerations is because they think it's easier for the district court to apply, or they think it will sort of stop the district court from

automatically saying, "Hey, cool, I could have done that."

So the question is partly whether or not we put expertise at the right level. We put expertise at the appellate level, but that means that you've got to have all of these drivers to get questions up to the Court of Appeals. So you make things questions of law so that the court can review them de novo. And things that you can't make questions of law, you have to make into such simple fact questions that even a district judge who is very technologically illiterate will be able to answer them.

So to the extent you see problems on the suggestion test or the secondary consideration test, it might have a little bit of something to do with institutional design and not merely a question of what the court actually thinks is right.

MR. COHEN: I wonder about the secondary factors test, in particular, the commercial success test, where one element seems to be that there be a nexus between the commercial success and what was invented, the inventiveness of that. That seems like a fairly difficult thing to establish. How has the Federal Circuit, or the District Courts to begin with, gone about trying to -- how successful have they been?

PROFESSOR DREYFUSS: That was actually my last question, which was to John again on his idea of

putting a burden on the patentee to rule out exogenous developments. It's always hard to prove something that is not true, so I think the nexus test is kind of a way of having you prove a positive rather than having you disprove a negative.

PROFESSOR DUFFY: If I can just comment on that last point.

MR. COHEN: Go ahead.

PROFESSOR DUFFY: I'm not sure it's hard to prove a negative in this case actually. One thing you could prove is that the starting materials had been available for a decade.

PROFESSOR DREYFUSS: You're putting the burden on the patentee. The patentee has to prove that certain materials weren't available for a decade.

PROFESSOR DUFFY: No, I think the burden on the patentee, you would have to say, is the starting materials were available and no one else did it. In other words, actually a really good case, the case I really like and actually is in the new case book I have, is I put in the whole A&P case because I think it's a wonderful case. And I think it is a case where the Supreme Court got it wrong, because if you actually look at the facts which were in the lower court opinion, the starting materials, the fact that this was an incredibly

simple invention actually cuts very much in favor of the patentee.

The Supreme Court seemed to be impressed that this was a piece of wood that anybody could create, and that in fact makes it look more like it's nonobvious. The lower court detailed not only is this a very simple invention, it's basically the precursor to a modern conveyer belt at a supermarket. This was just a wooden frame that the checker would pull down towards the checkout spot. But the lower court said that the self-serve store had been in existence for two decades, since the Piggly Wiggly first was created, and that was uncontested, and that this had been a problem, the sort of bunching up of people at the checkout counter had been a problem for those two decades, it had recently intensified, but that it was a problem for about two decades.

There was this one inventor who came up with a solution using absolutely common materials, pieces of wood and nails, which are around for centuries, and instantaneously that's copied by everybody else, and it solves the problem. It allows the substitution of this device for more checkers essentially.

So I think there are many cases where in fact you would be able to prove that in fact the materials were

common materials. There wasn't an exogenous change.

In many cases I think you won't. Price Line's patent on the reverse auction on the Internet. I think you could say, Well, what has caused that to be patented now? Well, maybe it's the Internet. Same thing with the One Click patent.

So I'm not sure that you can't prove this, because it's not really proving a negative. It's proving whether the problem existed for a long time and whether the materials to solve that problem were in existence, but for the intellectual component.

PROFESSOR DREYFUSS: I agree with you on the A&P case. They also thought we didn't like gadgets, and in fact we love gadgets.

PROFESSOR DUFFY: Right, right.

MR. COHEN: We have two signs up here. Let's take Dan and then Glynn and then a short break.

PROFESSOR BURK: I wanted to come first back around to the innovation versus invention question that has been floating around. One of the things that John Duffy said in response to my earlier comment was that one of the breaking points might be whether you think it's important to calibrate your nonobviousness standard before getting the patent versus after getting a patent, which I agree is Ed Kitch's focus and one place you

might look.

I think what I was really talking about and I think Gerry Sobel was talking about was a different breaking point, which is before invention versus after invention. And again my bias, like Rochelle's, might be the fact that I'm from biotechnology and from the chemical area where you can very easily generate new or novel creations, but then figuring out what they do and getting them in the market is the expensive point.

So at the point where you have the invention in hand and the persons then say, now is it worth getting a patent on, let alone trying to take it to market, you may want to lower the bar or modulate the bar of nonobviousness to make that anticipated value different depending on what industry you're in.

Now, that goes back to Professor Scherer's point about creating blanket rules for different industries, which is a version of what we call the rules versus standards problem, which may be what we're talking about. In other words, there's a certain cost of creating a different rule for every industry or every different situation on a case-by-case basis, so we tend to avoid that cost by creating broadly applicable standards. But then the cost is that it's not going to fit the various cases very well.

So you have to balance off the cost of having a standard that doesn't fit your situation very well and generates some social disutility versus the cost of continually going back to somewhere -- the court, the Patent Office, or Congress -- to create a different rule for every new technology that comes along. And part of the problem you're going to see in nonobviousness is trying to figure out those two different standards or having a broad standard versus a lot of individual little rules.

MR. COHEN: We can develop that a little bit further after we throw in description and enablement. Let's have Glynn have the last word before the break.

PROFESSOR LUNNEY: The last word, I always look forward to that. I want to say two things. One is on this nexus between commercial success and nonobviousness. The standard before the Federal Circuit was somewhat tighter. You had to show causation, that the causation was due to the technological advance. Under the nexus test that the Federal Circuit has applied, it's much looser. As long as the patented invention is incorporated into a successful product, that seems to be enough. Even historically for example, if you could show a very heavy marketing effort, heavy advertising, a large company with good distribution, you would mitigate the claimed causation, but under the Federal Circuit those

factors are not enough to eliminate a nexus.

The second is this notion of risk, and I think we need to be careful about cause and effect here. The level of risk in the pharmaceutical industry, in any industry, the level of failure that is funded, that is tolerated in the industry, is not determined in the abstract. It is a function of the patent protection provided.

If you provide more protection, the successes will pay for a greater deal of research and a larger number of failures. So more patent protection means a lower success rate. So we need to be very careful how we approach those issues because if you say, "Well, a low success rates means you need more patent protection," the more patent protection you get, the more research you're going to fund, and the more the success rate is going to fall because you're going to have a larger funding of failures that you can afford.

PROFESSOR BURK: A success rate, you're saying looking at the industry as a whole.

PROFESSOR LUNNEY: At the industry as a whole, yes.

MR. COHEN: Let's break until 3:10. That gives us about eight or nine minutes or so.

(Whereupon, a brief recess was taken.)

MR. COHEN: We're going to Dan Burk who will be talking about description and enablement.

PROFESSOR BURK: I was asked to say a word or three about some of the Section 112 doctrines that we have been making reference to off and on during the day. So this presentation is part tutorial, since those are sometimes less well known than the obviousness standard that we've been talking about. And I'm going to use the T word, the trend word, towards the end of the presentation to try and point out what I think are some trends in Federal Circuit jurisprudence.

Hopefully I've kept this short enough that we'll have mostly time for discussion since that seems to be the most productive part of what we've been doing today, I think so far.

So first a few words about the enablement doctrine. We typically think of this as being part of the bargain, the quid pro quo, between the inventor and the public, the idea being that we'll give you an exclusive right if you will disclose to the public how to make and use your invention. And then after 20 years or so, the patent will expire, and that information will become part of the public domain for anyone who wants to use.

So what we're talking about, when we talk about

the Section 112 doctrines, enablement and then written description, which I'll get to in a moment, is not so much a characteristic of the invention such as we've been talking about with obviousness or we might talk about with novelty or some of the other patentability requirements that are actually part of the invention characteristics, but has a lot to do with the document, with the actual patent application and later published patent that is filed by the inventor.

It needs to reveal in that document how to make and use the invention. And the catch phrase that comes up is that the person of ordinary skill in the art should be able to make and use the invention without "undue experimentation," quote, unquote, by looking at this document that the inventor has provided us with.

And there's a relationship between this disclosure that takes place and how much the inventor can claim. Since this is part of the bargain with the public, the more you disclose to us, the more we'll allow you to claim under your exclusive right. The less you tell us, the less you disclose to us, the less we're going to allow you to claim as part of your invention.

Now, there are some areas where, in order to make this disclosure, how to make and use the invention, text just doesn't work well. We talked earlier today

about the inadequacy of language in some situations. And the classic example here is when Congress decided to create a new form of intellectual property back in the '30s called the plant patent. It's awfully hard to describe a new variety of a plant, of asexually reproducing plant, well enough to meet the requirements of disclosure in the patent statute.

So Congress said, "Fine, you can put a picture of the plant in the patent instead, and that will be your disclosure." And so plant patents as a consequence are a lot of fun to look at because most of them are ornamental varieties of plants, and you get to see lots of pictures of pretty flowers and so on.

We have a similar problem that developed after the Chakrabarty case, particularly when biotechnology entered the mainstream of patent law subject matter, that when dealing with biological materials and microorganisms and even multi-cellular organisms, again, it's awfully difficult in many cases to tell someone how to make and use those materials, which may be quite unique. And so the alternative was developed that you could publicly deposit samples of those materials in order to enable those of ordinary skill to make and use your invention.

Even if you couldn't tell them how to make it or

how to get the materials, you could make it available to them through public repositories, and those are both aspects of enablement that I will come back to in a minute as being important as part of the trends in the Federal Circuit.

Now, enablement also shows up in a number of other odd places or unusual but important places in the patent law besides simply the disclosure made by the inventor. We've talked about the inventor's obligation, but enablement also shows up in helping us to define what is relevant prior art in cases.

So, for example, if a piece of prior art might prevent you from getting a patent, part of the standard is that the disclosure in that prior art has to be enabling, so that the public already has the invention in their possession, and what you're giving us is not anything that the public didn't already have.

The Federal Circuit has increasingly used enablement as an important part of the invention standard, particularly conception. There are a number of cases now talking about the importance that if an inventor has fully conceived of the invention, that the enablement standard is part of that, that you should be able to enable somebody to make and use an invention that you fully conceived of.

So the standard has been exported into some other parts of patent law, and that also is important in thinking about some of what has happened in recent trends.

The enablement is measured, as I said a moment ago, with regard to this mythical person, sometimes called the PHOSITA, a person having ordinary skill in the art, who is envisioned as a common user of the technology, someone who is not very imaginative. So the legal standard then is, have you enabled this imaginary, legally fictional person to make and use the technology, a little bit like fictional people we see in other parts of law, the reasonably prudent person. And that standard has also been exported to other parts of patent law, and as we'll see in a moment, it's important to some trends in the Federal Circuit.

Let me suggest one of the places where these trends seem to come together and which goes back a little bit to a discussion we had a few minutes ago about certain industrial sectors or certain technological sectors and whether you create a rule specific for that type of technology or whether you have a wider blanket standard that covers many areas of technology.

If we look at the computer software cases the

Federal Circuit has been dealing with in the past few years, with regard to the enablement standard, the Federal Circuit keeps telling us that very little disclosure is necessary for computer software. And so when we look at these patents, the Federal Circuit has told us you don't need to give us the code that goes with the software. You don't need to give us a flow chart. You just need to tell us what the software does, just give us a functional disclosure, tell us what it does.

Then the Federal Circuit has said pretty much anybody of ordinary skill could then write that program. So the assumption seems to be in the area of computer software, that the PHOSITA, the person having ordinary skill, is a person of extraordinary skill or someone who simple having been told what a piece of software is supposed to do can very quickly go in and write that code, without being told very much more, that they would be able to do that.

We can have a discussion about whether that's really true. If you've done any coding, there tend to be bugs and other problems that maybe that the Federal Circuit doesn't fully appreciate what goes on. But there seems to be a legal standard evolving here of what constitutes ordinary skill and what would need to be

disclosed that is unique to computer software and is a relatively low standard for disclosure.

This is in contrast to another area that we've mentioned a couple times today, the biotechnology area. And I think it was Stephen Kunin who mentioned some cases earlier today like Fiers v. Revel, where the Federal Circuit is telling us, No, we need to see code. We need to see the sequence of a DNA molecule or the structure of another molecule.

Apparently the presumption here is that the PHOSITA, the person having ordinary skill in the art, is extraordinarily dense, that they cannot come up with this on their own having been told only the function of the particular molecule, and so you really need to literally spell it out for them in the patent, which is quite a contrast to the software area. And so we may be seeing evolving standards in different areas of technology with regard to enablement.

How about written description? Related to enablement but distinctly different, especially in recent years, it's actually sort of a historical artifact. There was a time before we came up with the idea of having claims in patents when the description provided by the inventor in disclosing the invention told you what was being claimed. And so rather than

having separate claims, the written description served functions that we would today say are served in the claims portion of a patent, putting the public on notice as to what they should avoid so as not to step on one of these land mines that we talked about.

At one time the written description told the public what was off limits, what they should avoid in order not to infringe, and what the metes and bounds of the patent rights were, the invention that the inventor was going to have rights in.

These things we would tend to think now are covered in the function of the claims in the patent document, so there's some question as to what the written description requirement really does anymore. And we've been given a number of justifications by the Federal Circuit and by its predecessor court.

One thing that clearly is done by the written description requirement is that it curtails so-called new matter problems, that if you're relying on a previously filed application and a continuation situation or a continuation in part situation, that we know what it was you were talking about in that earlier application by the description that's there. And if you want to rely on that for a filing date or rely on that disclosure later on, if you vary from that, we assume

you're now talking about a new invention, and you need to start over.

So it prevents sort of the changing or metamorphosis of the discussion of the invention happening as these documents are filed with the patent office.

It's also been suggested that the written description requirement sort of keeps the inventor honest, that we know that the inventor really did invent this because they're able to give us this detailed description. And the underlying assumption here seems to be that if you hadn't actually invented this, you wouldn't be able to describe it in enough detail to meet this requirement.

Now, note that I say "has the invention in hand" in quotation marks because you don't have to actually build the invention in order to get a patent on it. If you sufficiently envision the invention so that you can give us an enabling and working written description, you can file a so-called "paper patent" without having to ever build it.

Again, the conception of the invention has to be sufficiently detailed to meet this requirement, so we know that you really did invent it, whether it's a paper patent or whether it's a patent that you actually reduce

to practice in the physical manner.

What a number of commentators have noted is that by retaining this written description requirement, it may do these things. It may curtail new matter. It may keep the inventor honest. It may make sure the inventor really has invented what she says that she has. But it really acts as a sort of super-enablement requirement that not only do you have to enable somebody of ordinary skill to make and use the invention, but you have to give us this detailed description on top of that, so that we're doing something a little bit beyond enablement in putting this into the hands of the public in this document.

Now, for a long time or for various periods of time, no one paid all that much attention to the written description requirement after we developed the idea of having claims. It was sort of there in the statute and in a lot of cases was not paid much attention to.

But it became very popular in the chemical arts. Again going back to something Rochelle Dreyfuss said earlier, it's had this much more vigorous history in chemistry of being important than elsewhere and seems to have been reinvigorated recently by the Federal Circuit, certainly in the chemical and biotechnological arts, and maybe outside of that as well.

One thing, one trend, using the T word, that the Federal Circuit seems to be using this for, is as a tool to limit claim scope. And we have some cases where the Federal Circuit says, "Well, you have claimed some embodiments of the invention that you didn't describe, and so we're going to limit your claims or even invalidate your claims in some situations because you didn't give us a description. Even though you enabled them, you're claiming too broadly to be commensurate with your written description requirement, so we can use that to kind of check your ability to claim broadly."

In biotechnology, again, this seems to have been taken to an extreme. There was some mention of this this morning where the Federal Circuit seems to be saying, "Well, you need to give us a very detailed description of the structure of the molecule, and in the case of genomic types of patents, DNA, that means the nucleotide sequence, not only to enable one of ordinary skill, but even when one of ordinary skill would be enabled, you haven't properly described the molecule unless you've given us this detailed sequence."

This shows up especially in cases where people have found and have characterized DNA sequences that might be fairly common, perhaps with slight variations, in other species, and are trying to claim not only the

particular molecule that they found but also other similar molecules, a genus of molecules. And the Federal Circuit has said, "Well, we're not going to allow you to do that because you haven't described all of these molecules. You have one of them or a few of them. You've told us how to get more of them, and you told us that the others would be very similar to the one that you have, but you haven't given us a description of them."

The sort of pinnacle of this trend was also mentioned by Stephen Kunin this morning, the Enzo case, going back to the practice that I mentioned before of depositing biological materials, which has been the practice for some time now in order to enable people to have the starting materials to practice certain inventions.

We now have a case where, following this trend in written description, the Federal Circuit has said, "Well, it's fine to deposit materials for purposes of enablement, you might be enabling people to practice the invention by making the materials available. But you haven't described them, and so deposit will not suffice for written description."

I think that was a rude shock to people holding quite a number of biotechnology patents who thought that

by depositing materials, they were okay under Section 112, and now we learn that, no, they failed the written description requirement.

So that's my round-up of where I think the Federal Circuit has been going with written description, with enablement, and I look forward to some questions and discussion about the policy and the economics behind it.

MR. COHEN: Before we proceed with that discussion and questioning, let's take our final presentation of the day, which comes from Gerry Sobel.

MR. SOBEL: Thank you, a lot of wonderful presentations. I'm delighted to be here. I have to say that my comments do not represent the views of my law firm or any clients. And I have to mention that I wrote a paper that touches on the subject of my remarks today, and it's in the University of Virginia Journal of Law and Technology spring '02 issue.

My topic is the development of the doctrine of equivalents at the Federal Circuit, and a subject that came up this morning, its relationship to economic policy and, more precisely here, competition policy. So a word about where we came from on the doctrine of equivalents and the trend, a word that was mentioned a few times, and what the bias is or the way the Federal

Circuit thinks about this issue is.

So the doctrine of equivalents started in the 19th Century. And just to be absolutely clear what we're talking about, I can give you the simple facts of the Winans case. It was a coal railroad car, and the claim talked about a conical shape. And the accused railroad car was an octagonal shape. And the Supreme Court said, "Well, yeah, it isn't conical but it infringes because we're going to look through the form to the substance."

We can jump forward to the Graver Tank case in 1950, where the Supreme Court told us a little more about the doctrine of equivalents. It said you look for substantially the same way, function and result in the accused thing, same that is, of course, as the claim. And there were some strong statements of policy in Graver Tank, where the Supreme Court said that we're going to favor the patentee over the interest of accused infringers in clear notice of what's covered by the patent.

In fact, the Supreme Court talked about unscrupulous copyists, fraud on the patent. They used strong language. And that's the setting in which the Federal Circuit is created in 1982. And what did the Federal Circuit do? Very quickly, it started out in sync with Graver Tank, and even more so. It said, "We're

going to look at the claims a whole. We're going to look at the accused device and consider whether it's enough like the claim as a whole to infringe by equivalency, even though, of course, there is no literal infringement."

That view prevailed for a few years in the first half of the '80s. And then in 1987, in PennWalt and Perkin-Elmer, the Federal Circuit got on the track that it's been on since then. It said, "We're going to narrow this doctrine." It didn't use those words, but that's what it did. And it did that by saying, "We need an equivalent for every element of the claim, so we're not going to look at it as a whole anymore. That's gone. We have to find an equivalent for every element. We have to start, of course, by figuring out what the elements are, but it's every limitation essentially in the claim."

There was another notion expressed that recurred in Perkin-Elmer in '87. We're concerned about erasing claim limitations, reaching people who would infringe by the doctrine of equivalents but ignoring some claim limitation. That all-elements test was mitigated in a couple of decisions.

It said, "Well, you can have two features of an accused device doing the job of one claim element or you

could have one for two or you could change the location." And the element didn't have to be in exactly the same place in the claim and the accused device.

The next major step was an effort to largely do away with the doctrine of equivalents. And the vehicle was what the Federal Circuit said in a couple of cases was the specific exclusion doctrine. If it's somehow necessary to the claim and it isn't in the accused device, it is specifically excluded by the claim, and there can't be infringement under the doctrine of equivalents.

This proved to be a dead end, actually in a case I argued, and the Federal Circuit abandoned it in an Ethicon Endo-Surgery case, where they said, "Well, we can't distinguish something that's specifically excluded from everything that's omitted by the literal language of the claim."

In other words, they couldn't tell which was which, and if you treated everything that wasn't literally claimed as specifically excluded, obviously there would be no doctrine of equivalents. And that was inconsistent with the court's own precedent, not to mention the Supreme Court.

Warner-Jenkinson came along, another effort to chop down the doctrine of equivalents. This time it was

the en banc questions that said, Well, maybe this should be a judge issue, not a jury issue. Maybe this should be equitable. Maybe it should be limited to intentional copying, another avenue for limiting the doctrine.

The Federal Circuit majority kept the same rules as before; in other words, the movers for the change in the doctrine of equivalents couldn't muster a majority, and Graver Tank was pretty much affirmed. They said, "We're not going to take it away from the jury. It's not limited to intentional copying." And I'll say a word about prosecution estoppel separately in that case and otherwise.

The Supreme Court got the case, and it pretty much started out by saying that we decline the invitation to speak the death of the doctrine of equivalents. And they said we recognize that the doctrine conflicts with the notice function of being precise about what is claimed so that the competitors and the public can know what's covered and what's not covered. But they said we're going to follow in substance Graver Tank.

The Federal Circuit had said, in struggling with the test, you look for substantial or insubstantial differences to find equivalents infringement. And the Supreme Court said pretty much the same thing, but

that's not the only test. And it didn't say what other test might exist. It endorsed the all-elements rule, which, as I said, the Federal Circuit had been applying by then for many years.

There's another notion in the Federal Circuit cases that just became important in Festo. And that is this notion of foreseeability. If the applicant for patent could foresee the embodiment that later turns out to be the accused device, he should have claimed it, she should have claimed it. They didn't claim it, tough luck.

That's what foreseeability is. And the Federal Circuit in 1995, the Pall case, said that is not the rule, that's not the law, it's not controlling. And then in the Sage case in 1997, it appears as dictum: Shouldn't the doctrine of equivalents be limited to things that are not foreseeable at the time of the prosecution? And I should note that that would have conflicted -- it was dictum but it would have conflicted with Graver Tank, where the accused equivalent was actually mentioned in the patent specification, so obviously it was foreseeable. Yet it wasn't claimed, and in fact that was a plus in finding infringement in equivalents according to the Supreme Court. But there's that dictum in Sage.

Now to turn to prosecution history estoppel, foreseeability has become very important in the last few months in the Festo case. Prosecution estoppel is an integral part of the equivalency doctrine and of course says, and I'm going to try to explain these terms, that when an applicant for patent has narrowed his claims in the course of prosecution, he or she may have abandoned what was surrendered.

I should mention that that interestingly comes from Supreme Court law also in the same year as Winans. There's a Shepard case that says you can't capture in arguing an infringement case what you gave up in prosecution. And then it was applied to the doctrine of equivalents by the Supreme Court in 1942 in Exhibit Supply.

To get to the Federal Circuit, one issue that was presented to it was, Is estoppel limited to overcoming prior art rejections or does it apply to the subjects of the talk, the excellent talk we just heard about Section 112 enablement and written description issues also?

The Federal Circuit at first held, "No, there's no estoppel if you make a change in your claim for 112 reasons," and that persisted for some time. The Federal Circuit did narrow equivalents by broadening estoppel

when it said that there isn't estoppel, prior art rejection or no, if there's an unmistakable assertion of a position, whatever that is, and they found it sometime.

Then there was a debate of the Federal Circuit beginning in the '80s that continued for a long time on whether, as the court called it in the Hughes case, you applied estoppel in a wooden application, as it said, and just said, "Well, if the claim was narrowed, whatever ground was surrendered is gone," or, later on, and the debate continued right into the Festo case, is there a flexible bar? Do you do a close examination to see -- even if the applicant gave up more ground than was absolutely required or if it gave up more ground than was absolutely required to overcome the prior art, perhaps it could recapture some of that ground in equivalents.

And the formulations of the Federal Circuit, for example, in the Litton case in the late '90s, said, and this was a remand, "Go back and see what was covered by the prior art, and we're going to find an estoppel for that plus trivial variations and not more, even though it was technically given up" -- I don't want to use the word abandoned -- "given up and not claimed after the claim was narrowed."

In the Supreme Court in Warner-Jenkinson in

1995 -- well, why don't I start with the Federal Circuit. The Federal Circuit is applying a flexible bar, and when that gets to the Supreme Court, the Supreme Court doesn't dispute that, and in fact remands to see what the reasons were for amending the claim and whether they give rise to estoppel.

The Supreme Court was not clear on whether these estoppels were limited to prior art or indeed extended to Section 112. And the new thing the Supreme Court did was to create a rebuttable presumption that if there is an amendment, a narrowing amendment, it's for reasons relating to patentability and that invokes an estoppel. And it's up to the applicant, according to the Warner-Jenkinson presumption, to overcome that.

Then comes the very interesting Festo case. Again the Federal Circuit is struggling with equivalency and, I submit, how to narrow it. This time the avenue is estoppel, and they hold if a claim has been narrowed for any reason relating to patentability, it's a complete bar to equivalents for the element that was narrowed, and remember we're doing an element by element analysis still, but you don't do a close examination at what had to be surrendered to overcome the rejections. You don't look at reasons.

The discussion is over if there has been a

narrowing for that element. And you might say that what was done was to adopt what the Federal Circuit had called a wooden rule in 1985 or so in the Hughes case.

What effect did this have? Pretty dramatic because, as some of the opinions pointed out, there are comparatively few claims that are not narrowed in prosecution, so one or more elements in each of those patent claims was disqualified as a candidate for coverage including in equivalents.

So the Supreme Court gets this and disagrees with the Federal Circuit. And I'll come back to this morning's question about the extent of economic analysis and competition in a moment, but the Supreme Court said, "No, there is a flexible bar, it's not a complete bar. We don't agree with the Federal Circuit."

The Supreme Court did look at the interest of competitors in the clearly defined claim scope and the fact that they like to design around and said, however, looking at Winans and looking at Graver Tank and looking at Warner-Jenkinson, each time the Court considered the doctrine, it said, "We're going to keep it. We're not going to abolish it because of the notice function."

That's what it did here. And the Supreme Court quoted and rejected Justice Black's dissent in Graver

Tank, where he expressed his unhappiness with the doctrine of equivalents, so we're not going to follow that.

The Supreme Court did circumscribe equivalents in its own way, and I think Rochelle Dreyfuss mentioned that it adopted another branch of sociology. It looked at the difficulty language has in expressing new technology, the difficulty in describing in claims what the invention actually is, and it said, "We're going to give the patent applicant a break for that, and if the equivalents are unforeseeable at the time of the application, you can cover them."

If a person of ordinary skill, and you heard a lot about him or her in the last talk, could not be expected to include that in the claim, then it's covered. You can cover it with equivalents. And then they had a couple of more categories that would be okay: if it bears no more than a tangential relationship to the equivalent in question, it's hard to know exactly what that means, or if there's some other reason suggesting that the patentee could not reasonably be expected to describe the substantial substitute.

So there's a few opportunities to avoid an estoppel where there has been a narrowing and the ground was actually surrendered, but if you don't fit these,

the Supreme Court says, you are estopped. And that of course circumscribes when you can get infringement coverage by equivalent.

The Supreme Court said again there's a rebuttable presumption that the patentee is estopped, and it's up to the patentee to overcome that.

Why don't I say something about a hypothesis I have, and I'll close with that. Before I do that, I want to answer Hillary Greene's comment about the extent of Federal Circuit consideration of economics. And I covered it this morning a little bit, but the most discussion of competition and a little bit of economics that the Federal Circuit has done is in the Festo opinions. And there are two views, to oversimplify a little bit.

One, the majority's view in the Federal Circuit, no longer the majority after the Supreme Court or no longer the prevailing view after the Supreme Court. I'll just read you a few words here and there: ". . .technological advances that would have lain in the unknown, undefined zone around the literal terms of a narrowed claim. . . will not go wasted and undeveloped due to fear of litigation."

So that's the Federal Circuit's point of view. They're looking at competitors, and this is good for

competitors because there's less of a deterrent to operate at the edge of the literal patent claim.

Judge Michel said in dissent, well, there was a comment about biotechnology, if you change one nucleotide and there's been a narrowing, it's very easy to make a therapeutically equivalent DNA sequence sometimes, and easily avoid the claim. And the same thing could be said about amino acid sequences and was said by Judge Michel.

He was critical, calling that and other such changes trivial changes to attempt to get outside the literal meaning. The idea is you look at the prosecution. You look at what element was changed in the prosecution, and you make a small change in that, and then you, according to the now reversed Federal Circuit decision, can't cover that with equivalents.

Judge Rader in dissent talked about his concern for free riding and discouraging breakthrough advances and said equivalents should at least cover after-arising technique, meaning new developments, the transistors compared to the vacuum tube.

Finally, Judge Newman in dissent, as I said earlier, was more ambitious in talking about this and talked about the difference in risk-taking between the innovator and the imitator, her words, the risk of

commercial success in the case of the innovator, the risk of failure, unfulfilled expectations, obsolescence, regulation, technological failure -- those are the words in the decision -- and the imitator bears none of these risks.

There was a mention, just to use Chester Carlson because it's such a good illustration, Professor Duffy talked about Carlson avoiding photography, really silver halide photography. Because Carlson was a smart guy -- in fact, he was a patent attorney -- he didn't want to run into Kodak's presumably dominant patent position. I think that's what Professor Duffy meant.

So what Judge Newman said, not about that particular thing, but she talked about encouraging leapfrogging advances. In other words, if you can't operate at the edge of the patent claim, you have to move to a more unknown field, and you're likely to do something, either fail or do something dramatically different. So you're encouraging that kind of invention and innovation instead of close imitation and what someone would call and some of the dissenters in Festo called free riding. And that's what Carlson accomplished.

To push the metaphor, even after Haloid had developed the machine, the 914, it was so concerned about

its ability to market it that it offered it to IBM. And IBM turned it down because it misread the market opportunity. It wasn't thought that people would want to make copies. But as soon as they introduced the machine, everybody learned that people loved to make copies, and it was a fantastic success. But market success is one of the things that Judge Newman identified.

What the Federal Circuit is concerned with, the majority anyway, in Festo, and it comes up in Markman and the cases after that, Vitronics, it's concerned about the accused infringer. It's concerned about improving the situation of those who would closely, why don't I say, design around the patent by giving them notice. And it doesn't ever mention, except in these dissents, but before that it didn't mention, say in Markman and Vitronics, the function that patents have to promote competition. When you have an innovation like, to use xerography again, the plain paper copier, to take this phrase, it sweeps away everything else, carbon paper, wet copying, thermofax. It's all gone.

I mean, it's the most dramatic kind of competition. And somebody said, Professor Lunney said, there's no deadweight loss from things that are new, so the argument is that social welfare is greatly improved

when you have a whole new copier industry that didn't exist before.

MR. COHEN: Gerry, to give us a chance to have some discussion, I'll ask you to wrap up in the next couple minutes.

MR. SOBEL: Thank you. I'll wrap up now. The short of the matter is that this view of competition is something like the Black/Douglas view that was applied in antitrust and also in patent matters. Patents are a special exception to a general scheme of competition. You have to limit them. Black and Douglas were the origins of the Flash of Creative Genius test. Black and Douglas dissented in Graver Tank.

Well, Black and Douglas had the same view of competition. They didn't look at the incentive to create new innovations. And antitrust has gone way beyond that. The Antitrust Division rejected that view in the '80s. It reversed its position that the so-called no-nos were not permissible. Those were ways of restricting licenses typically. GTE was decided, which was critical of free riding and allowed vertical restrictions where they had been barred before in the Schwinn case.

The Federal Circuit has liberalized patent misuse and some of the antitrust rules. And that is an analogy, I submit, for the Federal Circuit to change its

calculus and give some thought at least for the majority to the pro-competitive function of innovation.

Thanks.

MR. COHEN: Thank you. We've tied together two presentations here, one involving description and enablement, and one involving equivalents. They're really not as disparate as that may seem, from one perspective at least. And what I would like to do is, I would like to start the discussion with a very general point drawn from one of our earlier sessions.

Suzanne Scotchmer, when she was here, talked about two types of issues, one being the patentability step, which she saw as arising out of the obviousness inquiry -- how far you have to go ahead to get your own new patent -- and on the other hand, the issue of breadth, leading breadth, which both could come from description and enablement, be affected by that; it could be affected by claims interpretation; it could be affected by equivalents -- everything that goes into how broad the initial patent is and its ability to exclude others, where you fall within infringement.

What we heard from her was the view that as a competition agency, we perhaps may be more interested in the breadth issues, which could lead directly to market power, as opposed to the obviousness issues, which would

tend to lead to a proliferation of patents if done incorrectly.

I'm wondering if any of you would like to comment on this. You're not all antitrust lawyers, but some of you may have some thoughts on competition. And I see Mike Scherer's sign is up, and he obviously has much to say on competition issues.

PROFESSOR SCHERER: Well, I think breadth is more than a question of a single patent. Breadth can actually be a portfolio of patents, each narrow but together encompassing a field. And that raises the competition policy issues of the Xerox case, which has come up twice now.

The FTC's Xerox case, not the SCM versus Xerox, but the FTC's case, which was a case for curious historical reasons that basically I had to decide whether to recommend the settlement that we had negotiated with Xerox to the Commission or not. And I must say it was the scariest decision I've ever made in my life, including the decision to get married. Here we go on one hand versus on the other hand.

On one hand, especially as an academic, I considered xerography one of the greatest inventions of the 20th Century. It ranks right next to spell check, on which IBM by the way had a very successful patent. A

really great invention. And Chester Carlson did all the kinds of things for which the patent system was designed. Just did not want to interfere with this rewarding process. So that was one aspect of it.

On the other hand, the 914 copier had come out in 1959, and we are now into, as I recall, that case was settled in 1975, 16 years later. In one more year, the statutory life of a patent expires. And here is Xerox with a portfolio of one or two thousand patents on every imaginable variant of plain paper xerographic copying. And it just appeared from the situation that by amassing this continuing portfolio of improvement patents, Xerox was going to monopolize the industry, not for 17 years, but forever.

That was, it seemed to me, the reason why the FTC had to or should act. It didn't have to act, but it should act and approve the compulsory licensing settlement that Xerox agreed to. As I say, that trade-off decision, and it was a trade-off type decision, was the hardest I've ever had to make.

I frequently think about it in hindsight and ask, "Was it the right decision?" And the more evidence I see, the more convinced I am that this was the right decision. Because while the best evidence is a book by the subsequent CEO of Xerox, his name was Kerns, K E R N

S -- the book was entitled Prophets in the Dark, P R O P H E T S, not I T S. And what Kerns says essentially is that, "Wow, with our monopoly position we had grown fat and happy and complacent. And it was only when those Japanese entered the market with all their newfangled, lightweight copiers that we learned (A) that it was possible greatly to increase the reliability of our copiers, which is a source of considerable concern to consumers, and (B) that we could improve our production processes greatly and reduce the cost of making copiers."

So it seems to me that opening this up to new ideas, fresh ideas was the right thing to do. The tough trade-off question is when. And at least in my view, given that we have had a 17 year statutory patent life, it seemed to be around 17 years was the time to open up the windows, not Microsoft's Windows.

MR. COHEN: Glynn.

MR. LUNNEY: Dan, it struck me when you were doing your presentation when you put historical artifact up next to description, I was thinking to myself, that may have been true up to about three years ago, but with the provisional patent application, the description in a sense can serve as the claims at least for some limited purposes. So I was curious if you would address that.

Then in terms of the doctrine of equivalents, I guess my question here is: Are we talking about the substantive scope of the patent? That is, are we trying to use the doctrine of equivalents to make the patent broader or make it narrower in a substantive sense? Or are we using the doctrine of equivalents simply as a procedural tool, that is, that there is a given scope to the patent that you would be entitled to and if you knew or had a perfect handle on the language that you could use to describe that scope, we would have given you that patent to begin with, so it's simply a procedural device to give you the scope of the patent to which you were entitled if your language had been perfect? I think historically the doctrine of equivalents has been broadened or narrowed as a substantive device designed to govern the breadth of the patent statute. I fear, or my concern is, it's increasingly become simply a procedural question of what are the limits of patent prosecution.

To that extent, I would share Mike Scherer's worry that what's going to happen is instead of just having patents that are valid but narrow -- that's good on an individual patent basis, but once you get hundreds or thousands of patents put together, you end up with the same breadth again, but now they're all going to be presumptively valid in a very strong way rather than the

older approach in that sense.

I guess in that light, Gerry, my recollection of Graver Tank is a little different than yours. My recollection was that the patent did originally have a claim that covered the earth metal silicate welding flux, but that the earth metal silicate welding flux claim got knocked out at the district court because it failed the enablement doctrine.

Some earth metal silicates would work as a welding flux, some would not, and so that claim was struck out. They were left with the alkaline earth metal silicate claim, and, I forget which one it was, the manganese silicate or the magnesium silicate, which was not an alkaline earth metal, was therefore outside its literal scope.

So you had a claim that went through the Patent Office. They got a claim that would have covered the infringing device literally, and then that claim is struck for lack of enablement, even though the specific -- I think it was the manganese earth metal, the manganese silicate was in the description. And so it was a curious case in that way, sort of taking it away with one hand, and the claim was struck down, but then giving it back at least by making the equivalent alkaline.

MR. SOBEL: I don't remember the basis of the

rejection. Otherwise you're right.

MR. COHEN: Let's get John's comments.

PROFESSOR DUFFY: Well, one thing I think is interesting about the afternoon presentations is these are areas that the Court of Appeals for the Federal Circuit has actually not been favorable to patentees. Both the written description requirement, as Dan said, was the reinvigoration, that was a surprise to many patentees and not a welcome surprise, and the narrowing of the doctrine of equivalents for the last few years has also not been something that patentees as a whole have embraced warmly.

So I think it does show that the Federal Circuit, while it may have some institutional biases, its institutional biases are much more complex than simply saying they're pro-inventor or pro-patentee biases.

One possible thing to unify this, unify nonobviousness and later this afternoon's presentations, is it really does come down to a vision of what the patent system should be about. If you really believe the patent system is mainly about broad pioneering inventions like Alexandria Graham Bell's patent or the Wright brothers' patent on the stabilization system for aircraft, then you probably don't think that you should

worry about written description requirements very much, as long as the inventors have enabled it. And you probably do believe in a broad doctrine of equivalents and a relatively stringent nonobviousness standard, a relatively high standard for actually getting these patents. When you get them, they'll be generously interpreted, but it's hard to get them.

The path that the court seems to be pursuing is coherent if you think of patents as being rather small. If you think of the nonobviousness requirement as very modest, patents can issue, but when they do issue, we try and hold them to fairly technical rules. We enforce the written description requirement quite vigorously, and we also enforce the literal claim language. So I think in that sense there's a coherence to the case law that we're seeing.

I actually in the earlier presentation said that I don't think that the limitations on patent scope are enough. I think it's important to think about the limitations on patent scope, but I wanted to elaborate on this. The legal tools for limiting patents through the nonobviousness doctrine I think are better developed, and that that is a more fruitful way for an agency concerned with competition policy to evaluate the patent system, or at least it's a first cut. It's something that should be done because, this

is the main problem, with the claim scope doctrines, you still have to evaluate the technical merit.

That's part of Scotchmer's proposals too. You still have to try to evaluate how meritorious is the relevant invention in order to adjust claims, in order to adjust patent scope to fit the relevant contribution. And that is the hardest problem in the nonobviousness doctrine, to figure out whether it meets some sort of substantial nonobviousness in order to grant a patent.

So I think that the claim scope, patent scope doctrines are useful to think about, but in many cases, I think you first have to think about nonobviousness doctrine.

And also many of the doctrines -- if you take the Selden patent for example, many of the doctrines that might limit patent scope don't really seem to be able to limit that. You could try doctrine of equivalents. It wouldn't work. You could try interpreting the language fairly narrowly. That doesn't really work because the language is drafted so broadly and so capaciously. You could try the written description requirement. Maybe you could argue that would work, but I think even that, given current precedent, would be quite hard.

MR. COHEN: Let's give Dan a chance to respond. And perhaps let me throw on the table the further issue of the inter-industry or inter-technology differences -- to what extent these are inevitable as the patent law evolves, to what extent they're desirable, and to what extent we ought actively to be thinking about them in one way or in one direction or another in order to try to get an optimal result.

PROFESSOR BURK: I think that's actually a part of what concerned me about John's comments, which is that I don't think that, particularly from a technological sector standpoint, that cases are nearly as coherent as he's suggesting.

He gave a description of one sector, which was really biotechnology. But if you look at software, as I mentioned very briefly before, the situation was exactly the opposite. There's no enforcement of written description. There's no enforcement of enablement. And although we don't have any very good nonobviousness cases, the Federal Circuit has hinted several times that the flipside of not requiring much enablement or written description is that most of these things are going to be considered obvious.

One of ordinary skill can easily write this program just being having been told what the functions

should be. The flipside of that is, the person of ordinary skill doesn't need very much to combine the prior art references in order to come up with the same thing.

(Whereupon, a brief recess was taken.)

(Pause in the proceedings.)

MR. COHEN: We can continue.

PROFESSOR BURK: So at least in certain areas the description that John is giving us doesn't match what the Federal Circuit has been doing.

What concerned me about that is something Rochelle mentioned, which is maybe that hard cases are bringing bad patent law or that the outlying or unusual technologies are driving the development of certain doctrines. And I agree with her that that's clearly been the case in nonobviousness.

I think it's becoming the case in the Section 112 area. It's not clear to what extent the Federal Circuit is going to take its written description jurisprudence from biotechnology and try to apply it to other technologies, but certainly they haven't done that yet to software so far.

So we're seeing evolving, I think sort of sector-specific application of these doctrines. And the

question then is whether they've got the right cocktail of approaches in those particular sections, which brings me to your question.

I think I'm going to both agree and disagree with Suzanne Scotchmer. I do think that the FTC ought to be concerned with questions of scope, patent scope, but I'm not sure that you can cabin it as neatly as Suzanne did. And John again has pointed to that.

If you look at a very traditional patent issue that the FTC would be interested in, which we mentioned a couple times today, misuse, that has traditionally been a constraint on licensing and in particular the contributory infringement doctrine, which is a question of patent scope. We add these additional rights in unpatented items, related items, onto the patent grant and effectively expand the rights of the patent holder. To avoid expanding them too far we created doctrines like misuse to hold that in.

Well, Gerry Sobel has described something very similar going on when we're talking about the doctrine of equivalents. We've added on some additional rights to the patent holder by equivalents beyond what would be supported by the literal language of the patent. Is there anything that sort of holds that in check?

Well, prosecution history estoppel is one thing

that holds it in check. We've also been told by the Federal Circuit in Wilson Sporting Goods and some other cases that the nonobviousness doctrine is something that helps to hold doctrine of equivalents in check.

We can look at some other areas of patent law where we would modulate the scope of the patent holder's rights either by sort of a positive grant of new rights outside of the primary rights that the patent holder is given, but there are other doctrines that try to contain that within some sort of reasonable bounds.

So when you're thinking about questions of scope, you can't limit yourself simply to things that are obviously questions of scope, like Section 112. Nonobviousness helps to define the scope of patents. Doctrine of equivalents, as you pointed out, helps define scope of patents. But there are a number of other things that are involved in scope that you might not initially think are. And so I don't think you can ignore those other doctrines.

MR. COHEN: Steve?

MR. KUNIN: I too take issue with the notion that patents should be easy to obtain but difficult to enforce. I think it's the appropriate role of the Patent and Trademark Office to be a gate keeper and that in fact as part of being a gate keeper, it's important

for us to be able to have a very strong role in the norm setting process.

I also take, I guess, some issue with the notion that it's good for our system to have different standards in different industry sectors. I think it's really more desirable to have one patent law that's applicable to all technologies, including written description.

In fact, we have been very careful in fashioning our examination guidelines on utility and written description and even providing training examples to recognize the fact that there isn't anything specifically written into the statutes that says, "For this area of technology, 103 is to be applied this way; for this area of technology, 112, first paragraph, is to be applied in a different way."

I do feel that there is, however, certainly a difference when you look at the way software patents are handled in the court, as against biotechnology. As it was mentioned, there are many cases -- the Fonar case, Hayes Microcomputer, Robotic Vision, are all good examples -- where mere functional description was adequate, not only for enablement but also to meet best mode requirements, which indicates that there's even a suggestion that providing program listings for software

cases really is not desirable when, in fact, in the past there was a concern before Fonar that you had to do it to meet best mode requirements.

So we have a situation now where we have things like genomic material is being deposited, and then we've got cases like Enzo that throw into some question, but on the other hand, in the software area, there's not a requirement to submit program listings. And these both are coding types of inventions.

So I think this at some point will probably sort itself out as the law develops. But I think we'll find interestingly that there has been sort of this historical aspect in the law from the standpoint of predictable versus unpredictable technologies, and based upon that, the way in which the standards are applied are applied with that bias in mind.

I mean, when we look, for example, in terms of enablement and we look at the In re Wands factors, you look at things like whether it would require undue experimentation because of the unpredictability of the technology. And I think we find, as software inventions become more complicated, that it's not so ready a situation where just because you know the function you necessarily know how to write the code and how to make the code interoperate in a way that you actually can

produce the requisite functionality.

So I think we'll see to some degree the fact that maybe there will be more of a convergence as the law continues to evolve. But it seems as though that each time this comes out, it seems to come out to some degree in enforcement proceedings which then sends some signals in terms of whether these issues actually should be handled on a more antecedent basis in the patent-granting process.

It's our view that it should be done that way, and that it is really our gate-keeping function to deal with all those conditions of patentability before patents are granted.

MR. COHEN: I'm going to take Herb next. But as we do so, I think maybe the rest of you might think about a follow-up question, which is how do the courts, or how does the PTO in its initial assessment, go about determining what's undue with regard to experimentation, and how could this perhaps be shaped in ways that might lead to a more optimal result in enablement?

Why don't we get Herb's comments on what's come to this point first, though?

MR. WAMSLEY: I was just going to comment on a few comments made around the table and sort of sum up a few things said today. I have to think about your last

question. I don't know if I can answer that one now.

I wanted to highlight what John Duffy said a while ago, that the Federal Circuit has not been the patent owner's court, at least in recent years. I think if we stand back and look at what the Federal Circuit has been doing as a whole in recent years, it has not been particularly favorable to patent owners.

Now, that doesn't mean that they have things right exactly. I don't particularly think there's a problem with the court being a specialist court. The majority of the 12 judges don't come from the patent field. Ironically, perhaps, some of the judges who have been trying to narrow the doctrine of equivalents, for example, have been ones who did come from the patent field. So it's not the patent court.

Now, I think what the Federal Trade Commission and the Department of Justice obviously are going to do, when you write your report, you're going to try to recommend the proper balance of a lot of things. Or, as Dan said, you have to get the cocktail right, and there's a mix of things here.

Personally I think the things I would emphasize as being important in that mix, a whole bunch of things that were mentioned here, is maybe a little tightening up of the obviousness test. The Federal Circuit may not

have that quite right, but I think it's a question of clarification or modification, particularly of the suggestion test.

I think that in this cocktail mix, legal certainty, certainty for the competitors, is something that's always got to be kept in mind. If you have a cocktail that has more legal certainty to it, you're going to have less litigation, and less litigation is consistent with competition policy and innovation policy.

The way I look at it, patents should be fairly hard to get. But I think it does make sense to look at the patent rights as property rights and exclusive rights, and I don't like the compulsory licensing philosophy.

That's how I would sum up the cocktail.

MR. COHEN: We're at 4:30. What I would like to do is if anybody has reactions to the undue experimentation question, go ahead and give them, or if anybody has any closing thoughts that they would like to be sure to get in before we're done for the day. Steve?

MR. KUNIN: I'll be very quick on the undue experimentation. Basically within the Office, typically finding non-patent literature or patents that, say non-

patent literatures typically, that don't qualify as prior art because they relate to things that occurred sometime after the date of the invention, you get indications of what people tried to do and failed to do. And therefore there's actually documentary evidence that can be found that is used in the process of determining whether some things are undue experimentation.

MR. COHEN: Rochelle?

PROFESSOR DREYFUSS: Yeah. I think as you're thinking about recommendations to make, it's also important to keep in mind the dynamic nature of the patent system. So, for example, on Suzanne's suggestion that you think about scope, it's not going to do any good to just narrow scope because patent people will just get more patents, and you'll just have a lot of patents that are going to cover the same area, which was, I think, Mike's point about sort of a thicket of patents or a portfolio of patents.

So the question then is would you rather see one patent or would you rather have people looking through a bunch of patents to decide whether or not they have freedom of operation? I think probably looking at one is better than looking at many.

So the obviousness question and the scope question are just totally, intimately related. I think

they're related in the way that John said, what's the system for, but I also think they're related to the question of what is an economically viable, useful property right to own. And I think the economically useful right to own is a somewhat broader patent, but on a bigger advance, rather than lots of tiny little patents on not very much advances.

I think that's better both for competitors and for the patentee, and I think it's exactly the opposite from the direction which the Federal Circuit has been moving. So sort of making that case I think would be a really important case to make.

On undue experimentation, I don't know how much that has to do with competition questions frankly, so I don't know whether you need to worry about that.

The other thing is also the trade-off between patents and trade secrets, which we haven't talked about at all. If you make it really hard to get a patent, then people are going to go to the trade secrecy system, and the effect is, what's the effect of that going to be?

MR. COHEN: Dan?

PROFESSOR BURK: Rochelle talked about the dynamic nature of the patent system. I want to put in a word for the dynamic nature of technology, because

someone said a moment ago that undue experimentation is in the cases intimately linked to the idea of inherently unpredictable arts, that there's certain areas of technology that are sort of so mysterious and unpredictable that we're going to treat them differently.

The thing that concerns me here is enshrining certain findings of fact from one period of time as a legal standard, so that it carries forward even after the technology has changed.

I suspect, for example, that that's something that's happened in biotechnology and maybe in certain chemical areas, that at one time when those industries were immature, the courts looked at them and they said, "Oh, well, it's very hard to predict what's going to happen with this sort of wet stuff, and so there might be a lot of experimentation required if you don't give us a lot of information."

That then turns into a legal standard, that we're going to treat these as inherently unpredictable. Meanwhile the technology matures. People who practice in that art know very well how to find a molecule, an antibody, or how to extract a DNA molecule or whatever, and yet the courts continue to treat this as something that we have to be careful about for undue

experimentation purposes because of a finding that was made when the technology was immature.

MR. COHEN: Okay. I see one more sign up. We'll give John Duffy the last word for the afternoon and for the whole day.

PROFESSOR DUFFY: Well, I don't know if I deserve that, but I just wanted to say that I said earlier that the Federal Circuit, if we're thinking about institutional bias, which I think is an important question because the Federal Circuit is an experiment. It's only been around for two decades. It's useful to keep evaluating the experiment.

Dan said that the technology is dynamic. The legal technology is also very dynamic here. Claims are only a hundred years old or a hundred and a half years old. These are things that we are developing.

If there is a bias here, that might be worrisome. I don't know if it really exists, but if Professor Scherer is right, that there is an institutional bias of a specialty court, it may be something to worry about that might line up some of these things. It's not so much pro-patentee, but really a bias that's the bias of lawyers.

What would a lawyer want, a patent lawyer want? A patent lawyer would want a lot of patents and a lot of

technical rules because that generates litigation, and that generates attorneys' fees, and every patent, every industry, even where there's very little technical advance, has to pay tribute to the patent bar.

I'm not sure that exists. I'm not convinced of that. But if you wanted to line up some of these things, low nonobviousness doctrine, reinvigoration at least in some fields of these fairly technical rules, literal claims, right?

The whole point of the doctrine of equivalents is and what the Federal Circuit is saying is you need to draft your claims better. You need to pay your patent attorneys more, so if you get rid of the doctrine of equivalents, what do you need? You need to be very careful about literal drafting of your claims. You better hire a very, very good patent attorney.

So that's something to worry about in this overarching dimension in terms of what exactly is possible biases of a specialized institution.

MR. COHEN: Okay. I want to thank all of you for just a very fruitful session. And we have a special way of ending the day today, and we're going to have a short gathering here in the room to honor Mike Scherer's presence and welcome him back to the FTC.

You're all invited to join us. And once again

thank you all so much for your time and your effort today.

(Time noted: 4:37 p.m.)

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C E R T I F I C A T I O N O F R E P O R T E R

CASE TITLE: COMPETITION AND INTELLECTUAL PROPERTY LAW AND POLICY IN THE KNOWLEDGE-BASED ECONOMY

PUBLIC HEARING DATE: JULY 10, 2002

I HEREBY CERTIFY that the transcript contained herein is a full and accurate transcript of the notes taken by me at the hearing on the above cause before the FEDERAL TRADE COMMISSION to the best of my knowledge and belief.

DATED: JULY 17, 2002

DEBRA L. MAHEUX

C E R T I F I C A T I O N O F P R O O F R E A D E R

I HEREBY CERTIFY that I proofread the transcript for accuracy in spelling, hyphenation, punctuation and format.

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