FEDERAL TRADE COMMISSION

I N D E X

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I N D E X (cont'd)

FEDERAL TRADE COMMISSION

COMPETITION AND INTELLECTUAL)
PROPERTY LAW AND POLICY IN)
THE KNOWLEDGE-BASED ECONOMY)
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Wells Fargo Room
Haas School of Business
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The workshop in the above-entitled matter commenced a 9:00 a.m.

P R O C E E D I N G S

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MR. COHEN: Good morning everyone, those of you who made it here this early. I want to welcome you to what is going to be our final day at these hearings here in Berkeley. This morning in our first session, it is a little bit different. We are going to actually have two separate small sessions. The first one will involve one speaker who was not able to make it; we were not able to make arrangements on an earlier day, but we found an opportunity this morning. After he makes his presentation, we will have a separate small panel with presentations and discussions.

I am Bill Cohen, Assistant General Counsel for Policy Studies at the FTC. With me here for this first mini-session are Michael Barnett from the FTC, and Ray Chen from the Patent and Trademark Office. Our speaker in this first session is going to be Larry Udell. He serves as Executive Director of the California Invention Center, the Center for New Venture Alliance and Intellectual Property International. He teaches courses in New Ventures and Entrepreneurship at leading universities throughout the United States and Canada and has lectured throughout the United States for the PTO and clients, as well as for the World Intellectual Property

Organization. I am pleased to give you Larry Udell.

MR. UDELL: Good morning. That was very nice, thank you. Can you read it? Part of this has already been said, but there are a few points I would like to make and I am here actually for the benefit of American inventors everywhere. If I had a claim to fame -- if I had one -- it would be the fact that I have not worked for a corporation since March of 1964. In that period of time since then, I have put together 22 corporations mainly from inventions, working with inventors, mentoring inventors, and developing new businesses from inventions that wound up employing people and helping the American economy, especially California. I started teaching in the early 80's New Ventures and Entrepreneurship, have taught here at Berkeley and elsewhere, and have lectured for the Patent Office for the last 20-odd years. I do a lot of consulting work with clients from Fortune 500 companies to international corporations like Siemens. But the most fun I have is working with small, independent, new start-up's. And I might add that Invention and New Product Exhibition which you see here, San Francisco, California, was one that took place March 9th through the 17th of 1957, copyright Lawrence J. Udell. So I just want to let you know I have been around a long time and constantly learning, though.

Let me give you a few pointers on the Patent and Trademark Office, which was established in 1790. In the first year of its establishment, there were three patents issued. By 1800, ten years later, there was a total of 268 patents. But 1820, 50 years later, there were only 1,998 patents issued. By 1870, it was 117,000. Then, in 1959, it was the first year that passed 50,000 patents issued. In 1994, it passed 100,000. And in 2001, there was 166,000 patents issued and approximately double that amount of patents filed. If you take this on a weekly basis, the Patent Office is issuing almost 3,500 patents a week. And right now, we are approaching, unless we passed it, 6.5 million -- somewhere close.

American inventors, where do they come from? Every segment of society from the garages and basements across America from all ages, youngsters to seniors. In 1995, California Invention Center had a major exhibit in downtown San Francisco at Moscone Center on inventing the future. And the theme for kindergartners and first-graders was "What can you invent to make your grandparents' life easier?" It was fabulously successful, was on television, hit the wire services because the reporters were sitting on the floor with these kindergartners talking about what it is they created to make their grandparents' life easier.

By virtue of being human, you are an inventor. You have the innate creative abilities to create the product of tomorrow. All cultures, races, origins, all with a single dream -- fame and fortune. In America today, other than winning the lottery in your particular area, the one single way for an individual in this country to become independently wealthy without a major investment is to invent the product of tomorrow. Twenty-five thousand new products a year are introduced in this country. QVC, a television network which is broadcast to 81 million homes, sells $400,000 an hour, 24 hours a day, 364 days a year, of product. They are looking for 10,000 new products right now. They have got a nationwide search that will be starting in April. They are opening a retail store at the Mall of America in Minneapolis, St. Paul, and QVC is one example of how an individual inventor can create a product and have a ready market through their television network. I do not know how well you can see this, but between 1969 and 1981, there were actually -- this number, 21,000 to the government, of patents issued to corporations in that ten-year period, the largest of course was General Electric, AT&T, IBM, Westinghouse, Dupont, General Motors, etc. etc. See all these famous Fortune 500 names? Now let us look at 1982-1991 -- General Electric, Hitachi, Toshiba, Cannon, IBM,

U.S. Phillips, Siemens, Fuji, Mitsubishi, AT&T, only three American corporations. Now let us look at 1992-2001. IBM, which for five years in a row has received more patents than any other corporation in that ten-year period has received almost 20,000 patents. But when you look down this recent list, there is only IBM, Motorola, and Eastman Kodak, three American corporations out of ten. Does that tell you something? It should.

Let me give you an example of one invention. It is not a simple invention, but it was invented by a friend of mine. His name is Jim Ferguson. Some of you may have heard of him. Jim Ferguson has over 150 U.S. patents and over 500 foreign patents, and is the father of Liquid Crystal Display Technology, LCD. If Jim was not on a world cruise, he would have love to have been here, but -- very wealthy. He collects royalties from companies all over the world because he has patents all over the world. He found at a very early age and a very early stage the value of the American patent system, but his one technology, LCD, is used in television, lap tops, digital watches, calculators, palm pilots, cell phones, etc. etc., portable medical equipment and monitors, diagnostic equipment. The LCD industry in the world today employs over half a million people. One invention, one inventor, one example of American creativity that we

cannot lose and not ignore because it is the people like this and the inventions like this that created some very famous names like Hewlett and Packard and many others.

Consider the following: without a patent system, which our famous forefathers saw the vision and did something about it, what is the incentive for invention and innovation? Where would the products of tomorrow come from? Where would the new companies come from? Where would the millions of new jobs come from? Because your Fortune 500 are reducing their numbers of employees, yet small business in America has created over twenty-five million jobs in the last ten to 12 years. Where would America be today if our founding fathers had not seen the vision of the future? America sets the standards for the whole world. We do. We have. And if the American patent system was not as important as it is, then why would 90,000 patents a year be issued to foreign individuals and corporations?

Licensing -- licensing today of intellectual property is a $140 billion industry annually -- $140 billion. That includes everything from Mickey and Minnie Mouse to Star Wars to technologies that IBM, for example, has created. When Lou Gerstner came into IBM nine years ago, IBM was earning $30 million a year in royalties off their technology -- $30 million a year. That is not bad.

Last year, because of the re-direction and the focus of R&D within IBM Corporation, IBM earned in royalties on their intellectual property, last year, $1,600,000,000. Why? Quite simple. They recognized that they were spending a lot of money on R&D and then keeping it in-house when the concept came to whoever it was there that said, "If we are this good at inventing, why don't we invent for the rest of the companies? Why don't we invent for our competitors?" So last year, IBM earned $1,600,000,000. And it went right to the bottom profit line off of their investment in technology and inventions.

I have here at list of 230 products, well-known products that were invented by independent inventors, not the research centers at U.C. Berkeley or Stanford or elsewhere, not the Battelles or SRI's of the world, independent backyard garage inventors -- 230 well-known famous products. I will present you with the list, sir.

Now let me tell you what is happening that is really exciting. Next year, 2003 celebrates the 100th anniversary of the Wright Brothers. Starting on January 1, 2003, with a float in the Rose Parade -- can you see the plane on that float made of flowers? -- that will launch America's year of creativity and invention. If everything works well on September 11th of this year,

there will be an announcement out of the White House announcing all of the programs and incentives and motivations for kindergartners to seniors to invent the future of America during the year 2003. On December 17, 2003, at Kitty Hawk, North Carolina, the President of the United States and other dignitaries and so forth will be there to celebrate the exact 100th year of the flight. There is an exact replica being built of the Wright Flyer in Warrenton, Virginia, which the experts, aeronautical and otherwise, said never should have flown. They are going to try it again. On December 17th, they are going to fly an exact replica of the Wright Flyer, which of course, as you know, hangs in the Smithsonian. At the same time, NASA has the Wright Brothers' shuttle that will be flying over Kitty Hawk coordinating all of this. The State of North Carolina has a commission with all kinds of celebrations and programs going on all year. The State of Ohio, because the Wright Brothers were from Dayton, Ohio, has all kinds of events going on all year. And other people are getting on the bandwagon -- American Aeronautical, Astronautics, and so forth. It is a worldwide event and I am happy to say I have the privilege of representing the Wright Family on parts of the program. The Wright Family Fund will be contributing -- we do not know the exact amount yet -- but somewhere

between $10 and $40 million for these programs which will emanate from organizations like the Academy of Applied Science, the National Science Foundation, and so forth, for programs for all ages across all 50 states. So next year in America will be a re-birth of honoring inventors, recognizing the value of the patent system, and at the same time building towards a new future, a new America, with new products, new incentives, and hopefully benefit to everyone. Thank you.

MR. COHEN: Thank you, Larry. I just have one question. You talked quite eloquently about the contributions to the patent system in spurring some of these innovations. Looking forward, do you have any suggestions, any ideas as to how things might be improved? If you could change anything to help the smaller inventor that you talked about, what would you come up with?

MR. UDELL: Well, one thing I would do was to get Congress' hands out of the Patent Office budget and quit stealing the money that inventors are putting into the patents. Are you aware of this? The patent system is supported by inventors and companies filing patents. Congress, has reached into the pockets of the Patent Office. And I think last year it was $90 million or something was taken out of the budget for other purposes.

That is number 1. Leave the money where it belongs. Number 2, the patent system in America is well respected worldwide by virtue of the fact that you have so many foreign inventors and corporations filing patents in the United States, recognizing that this is a wonderfully large market, but at the same time that it does support intellectual property and its protection. And I think by and large the patent system today is probably more efficient and more effective than at any other time in history. You have got a good Commissioner, Jim Rogan, who is a former Congressman from California. You have got a great staff of people. You have got people that are devoted, they are hiring more Examiners, and by and large, I am not sure how to improve it any, other than the fact of leaving the money where it belongs.

MR. BARNETT: Mr. Udell, throughout the week, we have heard from the perspective of many companies regarding their particular patent policies or their experience. Could you provide us with some perspective of the small inventor's experience and how it differs from the corporate experience, either from a cost perspective, or from a timing perspective, or a resource perspective, and particularly with the idea of other particular attributes of the patent system that are particularly useful to small inventors?

MR. UDELL: That was a long question. The best way to answer it is that I talk to inventors almost on a daily basis and some are the wild-eyed, bushy-haired people with shopping bags that you are not sure you want to talk to, others are very intelligent, very motivated, and very focused. They recognize that one of the first things they need to do if they are going to make any money with their invention is to get some protection. And the largest majority file a provisional patent application first, which is a simple one-year document for $75.00. Inventors recognize that to earn money from their creation, they have got to be able to protect it. So how does it become a physical asset unless you file for a patent? Out of that individual's dream, with the right assistance, and staying away from the invention scam organizations that bleed a lot of money from inventors every year, they begin to learn from either the Patent Depository Libraries all across America, from Inventor organizations, from colleges and universities, that what you need besides yourself and your idea is a team of people, a team of qualified people to help turn an invention into a product. It is a cycle that you go from concept to product to market. Now, I grant you, less than five percent of all of the patents issued ever reach the market. But by the same token, that number

would increase if there was greater knowledge available and additional resources for the individual inventor. The small company that is born of an invention -- and I am working with six of them right now, six brand new start-up's -- are companies where the individual has enough experience and perhaps some credentials to develop a product that is recognized by others, or experts in their field, that has a great potential. And then you begin to look as to how to perfect it and how to finance it. I am happy to say, whether you recognize it or not, that in America today, there is more money available for new ventures than at any time in history. The venture capital community is not parting with the money as easily as it did three and four years ago, but there is venture money which is very rarely available to inventors. There is private money to the best estimate of $100 billion worth of private investment capital from angel investors all across America. So from that perspective, the companies that are being created today that will create the employment and better economy tomorrow is happening. I do not know if that specifically -- and I think the FTC has done a magnificent job of not only educating inventors, but also getting the scam organizations that have been bleeding inventors for decades out of the pockets of the poor inventors in America.

MR. COHEN: Okay, on that note, we thank you. And we are going to end this mini-session and, in about two or three minutes, begin our next panel.

Thank you.

(Whereupon, a brief recess was taken.)

MR. COHEN: Let me welcome you back. We have what I hope will be another outstanding panel before us. As I indicated earlier this morning, I am Bill Cohen from the FTC. Joining me on this panel from the Government will be Frances Marshall from the Antitrust Division of the Department of Justice and Ray Chen from the Patent and Trademark Office.

This panel is going to be a little bit different in a couple respects than panels we have had previously. We are going to be a little bit more detailed in our look at some of the issues raised by the patent system and we are going to shift our focus slightly. Most of our panels have at least started from the perspective of the patent system as it stands today. We thought that we should have at least one panel which attempts to shift the focus a little bit more toward where the patent system perhaps should be, at least in theory. And we will give our panelists an opportunity to let their minds range and come up with suggestions and thoughts and comments.

What I am going to do is we have four panelists and I think the best thing to do would be to introduce all four of them at the beginning. Immediately to my left at the end of the table here is Professor Robert Merges, who is back with us again today. Professor Merges teaches Intellectual Property and Contracts at Boalt Hall School of Law here on the campus. His primary scholarly interest is in the economic aspects of intellectual property rights, especially patents. He is the author or co-author of several leading student casebooks on intellectual property and has authored numerous articles in both the legal and economics literature. Just to my right is Professor Joseph Farrell, a Professor of Economics here at the University of California at Berkeley, where he is also Chair of the Competition Policy Center and Affiliated Professor of Business. His research has explored a range of topics in micro-economics, including network effects and standard-setting. Professor Farrell has twice served full-time in the Federal Government as Chief Economist of the Federal Communications Commission, and from July 2000 to June 2001 was Chief Economist and Deputy Assistant Attorney General of the Antitrust Division in the Department of Justice. Again, immediately next to Professor Farrell on my right we have Professor Justin Hughes, a Visiting

Professor at U.C.L.A. His research and teaching interests focus on Intellectual Property and Internet Issues. From 1997 to 2001, Professor Hughes worked as an Attorney Advisor in the U.S. Patent and Trademark Office, focusing on the initiatives in Internet-related intellectual property issues, a lot about the Amendment Immunity issues and Intellectual Property Law in Developing Economies. And fortunately, our final panelist, John Love is here again with us today. He is at the end of the table on my left, middle table, actually. He is Group Director in Technology Center 2100 at the U.S. Patent and Trademark Office. As the Director, he is responsible for managing the work of several hundred examiners who review patent applications for compliance with the statutory requirements for patentability in the area of data processing, electronic commerce, and cryptography. Mr. Love has also served as Chairman of the Supervisory Patent Examiners and Classifiers Organization. He has received many Department of Commerce Awards for his work at the Patent Office. We have an excellent panel here.

What we are going to do is we are going to start off with three presentations and then we will move into a period of discussion. Our first person to make a presentation is Professor Merges. And we will turn this

over to him.

PROFESSOR MERGES: Okay, thank you very much. I want to also thank my students from my Patent Law class who are here. One of the real rare opportunities that we have when we are studying this kind of issue here at U.C. Berkeley is to have exposure to groups like this and I appreciate that you are taking advantage of it.

Today I want to talk about patent standards and procedures and I was asked to do a literature summary and discuss future directions in this literature, and since that was what I was asked to do, that is what I'm going to do. I am going to talk about two different sets of issues. The standard of patentability, and there are really three different legal requirements that I am going to talk about -- novelty, utility, and non-obviousness. These are the main gatekeepers or screens that determine which of the filed patent applications will turn into issued patents. Primarily what I am going to do is talk about how economists and people interested in law and economics have looked at these requirements of patentability always in this session with an eye towards what we might learn of a practical nature in terms of reform or at least conceptual thinking about the patent system.

The second set of issues I am going to talk

about have to do with patent procedures. And under this heading, there are a variety of things one could talk about -- the priority system, first to invent vs. first to file. It is an important procedural element of our patent system. And the second topic, optimal patent quality, is one that has only recently really gotten some attention in the economics and, I should say, especially law and economics literature. That is the one I am going to stick to for the most part and the topics that run under this heading I am going to talk about are optimal patent examination and really a sub-topic, whether kind of a patent registration system would make sense, whether there is a need and justification for a patent opposition system, and some other internal PTO reforms -- salary retention, internal incentives, these kinds of things. And I will say that, for John Love's sake, I think the primary Examiners and the Group Directors are in for a big salary increase under these proposals. Maybe I will have at least one fan by the time I am finished.

I am going to go back to the classics that discuss the kind of economic justification for patents and see what they had to say about patent standards. We will start in this review with John Stuart Mill writing in 1848. Mill is famous for having said that the great thing about patents is that by awarding a property right,

society essentially calibrates the reward to the degree of contribution made by the inventor. His theory was that there is not a very big cost to issuing a useless patent, although we do have the utility standard, because his view was that if people are not going to use it, the property right will just kind of wither on the vine. The other side of that coin for him was that, the more important and significant the invention, the more valuable the property right would be. And he was writing in an era when people had started to discuss whether direct governmental rewards made sense. This was a proposal that came up periodically in England and in the U.S. in the 18th and 19th centuries. And his view was, no, the property right is a nice way to reward inventors and it is more workable than a direct reward from the government. He did mention that usefulness was a good kind of screen to keep out completely useless inventions. And so, really, we had for the first time in a kind of serious way a discussion of what patent standards were all about. He was kind of vague on the purpose and the, let us say, precise degree of the utility requirement, but at least he mentioned it.

Fritz Machlup and Edith Penrose wrote a famous article in 1950, reviewing what they called the International Patent Controversy of the 19th Century,

which was a review article that talked about the various conflicts between economists who argued all through the 19th century whether we needed a patent system or not. They emphasize that, historically, the administrative costs of the patent system were a good reason not to have patents. They had an implicit emphasis in their article on the fact that patent standards tended to drop over time to a kind of low standard of patentability, and that was one argument that the anti-patent forces made, which was that patents were somehow inherently always going to decline in quality.

Michael Polangi, writing in 1944, did a very thoughtful kind of top-down conceptual review of the patent system. His idea was essentially to revisit the 19th century debate and re-institute a kind of a more direct reward system and also enhance that with a limited property right involving compulsory licenses. He basically said that the invention test, which was the forerunner of our current non-obviousness standard, was not administratively workable, that it was too complicated and too difficult. His real point was that most invention was done by teams and to single out an individual inventor and determine whether their precise contribution met the standard involved too much administrative cost. And he wanted to kind of give more

of a group right and structure it more like a reward.

In 1958, Fritz Machlup revisited patents again and he wrote this wonderful study for the U.S. Senate, and it is called "An Economic Review of the Patent System." And it is still one of the most widely cited, really, summaries of economists' view on patents. And it is really just kind of a classic two-handed Economist account on the one hand. On the other, what it useful about it is it is comprehensive and it has some very, I think, reasonable and moderate bottom-line recommendations. One of the points that he made in this report that I think is of interest, especially in light of the presentation today on small inventors, and something that I want to emphasize, is that if you were here for a Tuesday session, then you will recall that we had a very nice summary of the different theories of why we have patents. The classic one is a kind of reward for invention notion, which is a straightforward, "If we encourage invention, we'll get more of it" kind of view. Another take on patents is that they are useful for a combination of disclosing information someone might keep secret, and attracting finance for ideas that are developed in secret. And this is the one that Machlup picked up on in this report. And I mention this because one of the trends that we see is that patents are

considered more and more important in the venture capital world, and the kind of marginal importance of a patent seems to grow as the size of a business declines. To say that in plain English, small businesses and small inventors really need patents. And what Machlup said was that the nature of inventions -- and by that, he really meant the standard of patentability -- is really beside the point in some sense if what we are trying to do is structure a legal device to attract capital. Just a provocative point: if the idea is a reward, then we want to calibrate the reward to the degree of contribution. If the idea is protecting information to attract capital, he is suggesting, you might want to worry less about the standard of patentability. This is from the famous conclusion where Machlup said in a passage just before this, "I am not sure that we would invent the patent system if we did not have it, but now that we have it, it is probably not a good idea to get rid of it." Just after that, he says that, basically what I call the grand question, "Are patents good or bad?" may be just simply impossible for us to answer. But what he says is that we can attempt to analyze the marginal benefits and costs of particular moderate changes in the duration, scope or strength of patented protection. And if there has been really a mantra in the literature in the last ten or 15

years, although this proposition is not cited, this is really where economists have taken off, the grand question, you know, "Should we have patents or not?" This was settled by kind of an agreement that we cannot answer it. So what we do now is we tinker and we look at the marginal effects of changing this or that on the assumption that we are going to have a patent system.

We get to the standard of patentability. Some real serious thinking begins in 1966. Edmund Kitch, who wrote a very nice review article having to do with this Graham v. John Deere case, an important Supreme Court case, he really clarified what I call the "but for" standard which, as you will see, is directly tied to the reward theory of the patent system. He basically said, "Do not give a patent unless you need to give a patent to have a certain invention developed." To put it another way, if someone is going to do it anyway, do not give them a property right. That is kind of what I call the "but for" standard. And that has been the defining proposition for economists looking at standard of patentability. Being a scholarly type, I had to go back and make sure that there were not some antecedents for this. In fact, I understood that there were and I dug up a couple. The Scherer date is later, but he cites some stuff that is earlier. So anyway, that is a pretty

straightforward notion. What I mean to say is that a lot of independent thinkers have come up with the same idea -- don't give a patent unless you need to in order to call forth a certain invention.

I did some work in this area to try to summarize some of the old literature and talk about the marginal influence of the patentability standard on decisions to essentially embark in a research project. And what I tried to do was connect two bodies of thought. On the legal side, the legal standard for non-obviousness talks about essentially a degree of technical merit. It says an invention that is obvious to someone skilled in the art is not patentable. And that is kind of an absolute technical standard. What I try to do is connect that with some notion that an economist would be interested in, a notion of cost. Because on the legal side, there is no reference to cost. In theory, even though something is extremely straightforward technically, it may be very very expensive to achieve. And what I try to do is I try to say, "Sure, the non-obviousness standard takes into account that degree of expense. Should that form part of our understanding of what technical merit is?" And I concluded that for very high-cost research, we might want to lower the standard of patentability to take into account the cost and

expense.

To jump ahead to some very recent work now by a former U.C. Berkeley Grad Student who is now at Cornell, Ted O'Donoghue, he picked up the patent scope literature that we talked about on Tuesday if you were here, which talked about the optimum scope of patents to be awarded to the first pioneer in an industry as opposed to subsequent improvers. He picked up on that theme and kind of integrated it into a discussion of patent standards. And what he came out with was a view that, if we raised the standard of patentability and we essentially make each quantum of invention bigger, what that does is it tends to make the pioneer or the first into a market have a longer effective market dominance period. And since enhancing the reward to pioneers is one of the goals that he was discussing -- he thought raising the standard of patentability makes sense. But I have to say, as a policy recommendation, it runs pretty counter to a lot of the trends that we have seen. That is to say, if O'Donoghue is right and we want to encourage the pioneer to have a longer period of market dominance, the discussion we have had for the most part tends to focus around how broad their patent is. But people have missed the idea that if we have a high standard of non-obviousness, the number of subsequent

improvers who get patents will be reduced. And that, in effect, will increase the profitability of being the pioneer. I have a "see-also" cite here because a fellow who I think is a lawyer came up with a very similar idea, though strictly from a kind of legal and policy view, did not have any equations and Greek letters attached to it, but it is very much the same idea and it was published recently. So I had to mention that.

Okay, now I am going to talk about patent procedures. And here there is a lot less recent literature, although I think because particularly with the business method patent controversy, we are beginning to see some interest in this field as well. One of the early references in this area has to be to Alfred Kahn, who is probably one of the doyens of the early literature on regulation, on the economics of regulation, but he did make a foray into discussion of the patent system as well. He was from the Polanyi school of thought, which said that there is a very high cost and great complexity in assigning individual property rights in an era of large scale collective invention. This is somebody who saw a kind of collectivist large scale enterprise era of invention as a trend that could not be argued with and was basically something that was going to happen and was happening. And what he saw was that the patent system

tended to favor the powerful and the unscrupulous and he talked about some of the tricks and games that patent lawyers can play in order to extend the pendency of patent applications and in order to amend claims to try to capture competitor products and things that are quite familiar to patent lawyers. Of course, this was written in the era before the patent term was changed. We now have a term that begins to run when you file a patent, so the games that you can play during prosecution have been reduced. And it is funny that he in a sense had a very good diagnosis of a problem, but his prescription was a little over-broad. Rather than completely scrap the patent system, we might have argued to him, "Let's start with something simpler like change the patent term." Well, that is in effect what we have done and so we do not have to throw out the patent system, but at least he took a look at patent procedures and saw what the economic effect would be.

There is another branch of this literature that is worth mentioning. It is on what I call two-tier patent protection. In Europe particularly, many countries have a system of what are commonly referred to as petty patents, that is to say minor innovations, and they are administered in a kind of parallel system to the general utility patents. The argument is that, by

separating out the smaller inventions, and by separating out let us say relatively low value inventions, it is easier to preserve a high standard of high patentability for the important stuff. And it also allowed the specialization or division of labor so that mass-market-appeal gadgets and a lot of the kinds of improvements that small inventors are famous for can handle it in their own system. The idea is that, by separating them out, we can more efficiently award property rights for both those small inventions and the residual -- the big important stuff. And there is a couple of studies that I would reference on this and they are cited here.

I have to say that this idea runs counter to one of the basic themes of our patent system, which is this very Jeffersonian -- and I might even say Jacksonian -- sense that IBM and the garage inventor are both good enough and both deserve the same property right, and they deserve the same treatment in our Patent Office. And I think the small inventor community would be very resistant to the idea that we should split off their work from the kind of work that goes on at U.C. Berkeley and Stanford and IBM and places like that. So there would be a lot of political resistance. But as a conceptual matter, separating the two classes of inventions still makes a certain amount of sense.

One of the more recent areas for inquiry has been the area of internal Patent Office incentives. And by this I mean a look at the Patent Office as kind of an economic institution that, through its compensation and through its internal culture, gives its employees incentives to do certain things. There is a literature in this area called *Personnel Economics* that looks at how compensation structures and how a variety of variables of the employment relationship can be changed and manipulated to get the outcome that you want. This is really a straightforward and common sense literature that basically says, "Be careful -- look carefully at what we are rewarding," because employees are very sensitive and they are going to tend to give you that which you reward. The argument is that if we more carefully review how the examiners job and the review process is structured, we might come up with a patent system that gives us higher quality patents, on average. This, of course, starts from the proposition that higher quality patents are something that we need and that we ought to be interested in. And I ought to take an aside here and say that the business method patent controversy, like the software patent controversy before it, was kind of a rallying point for people who thought there are some deficiencies in the patent system, particularly in patent quality,

that need to be addressed. And so this discussion of how should we restructure patent office incentives started from the proposition that something is wrong. To use the somewhat overblown rhetoric from my own piece cited here, there is a crisis and we have to fix it. Another variant on that proposal is the idea that one of the reasons that for low-quality patents, that is, say, patents which if given a reasonable degree of scrutiny would be found invalid, one of the reasons for that is that so much of the information about patentability is held in private hands. The way our system works now is somebody files for a patent application and the burden is thrown on the patent examiner to search through the prior art and see if anything like that filed patent application has ever been published or presented publicly before. The argument is that competitors of the patent applicant know a lot more than the examiner. And one way to get that information into the system is through what is called an Opposition System, which creates a formal role for competitors to come in and say, "Here is a piece of prior art that is very similar to a patent application that is currently pending in the patent office." We have something a little like Opposition Systems in our reexamination system. It is not used very much, and, to some extent, this literature is a discussion of how we

can revamp re-examination and make it look more like a true Opposition System, which is what they have in Europe and also in Japan.

My colleague, Mark Lemley, had written a very thoughtful piece that discusses this topic in the Northwestern Law Review, and the title really says it all, it is called "Rational Ignorance at the Patent Office." And his argument is that it makes sense for the Patent Office to do a relatively low degree of analysis on each patent application. It is a point that I made in my piece and other people have made, but he really spells it out very nicely. He says that because most patents never reach a commercial product, if we raise the amount of scrutiny higher than what it is now, we may be in effect wasting a lot of resources on inventions that are not any good to anybody anyway. And he talks about the fact that we really have a two-tiered scrutiny system. We have the examination as the first broad cut, but the detailed analysis of validity does not come until litigation. And the reason that system makes sense, of course, is that only the patents that are litigated get the heightened scrutiny, and therefore only the ones that merit that kind of expenditure wind up being looked at carefully.

This kind of theme has been picked up by a

couple of other scholars and I wanted to mention their work. And I call it "new directions" because this is fairly new stuff. I am going to come back to this first point on the social welfare gap in just one second. Taking the Lemley notion to perhaps an extreme, there is a young fellow at Washington University Law School named Scott Kieff, who puts forth a semi-serious proposal to go back to a registration system. This is a system where there is no patent examination. This is a system where my colleague to my left, John Love, gets to retire early. The idea is that litigation is the only analysis of patent validity that we really need, so we should just have a kind of rubber stamp system where people file and register patents, and only the ones worth fighting about will be analyzed for validity at all. And we had this system between 1793 and 1836. One of the problems with the proposals of going to a registration system is they do not look very carefully at the historical record and they do not understand why we went to an examination system in 1836. To put it bluntly, there were a lot of abuses and a lot of the complaints about the current patent system is that it favors the big guys. I do not think it takes a genius to see that a registration system would favor the big guys even more or at least some features of it would.

Another idea that is along these lines is an idea for so-called patent bounties. This is an article that proposes that the Patent Office award prior art informants with a bounty for coming forth with prior art that invalidates a patent. It is a little like an Opposition System, but it is a little more of a direct reward. The problem with oppositions are that you only benefit in filing an opposition if you have a big incentive to invalidate a particular patent. If you do not have a product that is going to compete with something covered by the patent, there may not be a reason to justify the expense and cost and difficulty of filing an opposition. Patent bounties put the money directly on producing the prior art, so instead of the indirect benefit of invalidating a patent that favors your own product, there is a direct incentive. If you have got a piece of prior art sitting around your office, you can make some cold hard cash simply by sending it to the Patent Office. So it is an interesting idea. And again, the idea is to get the information from the people who have it, which is largely competitors, into the hands of the people who need it, which is the patent examiners in the Patent Office.

I will go back to the first point now. My colleague, Rich Gilbert, in a presentation earlier in

this series of hearings presented a very nice discussion of blocking patents and patent pools. And one of the things that he pointed out is that there really is a social welfare gap when it comes to invalid patents. That is to say it is relevant to the point I was just making. The private incentive to invalidate patents is not often high enough, given how much social value would be created from invalidating a patent. That is to say, no individual may have an incentive to invalidate it, even though we would all be better off if they did. And I put that forth as a kind of organizing principle for these reform proposals. That is to somehow get private actors to do the thing they want them to do, which is to increase social welfare, to make us all better off. And all these proposals are really trying to make stabs in that direction. I am going to do a quick summary of some recent empirical work because I am running over my time, I am sorry to say.

My colleague, Josh Lerner, at Harvard Business School, has studied essentially the historical development of patent offices and patent standards. One of the things he finds, which is really not surprising, is that, where industry grows up and becomes more sophisticated, and people and industry end up with lots of different types of inventions and inventions are more

variegated, there is a lot more discretion and procedures. That is to say, Patent Office procedures somehow take into account the fact that the rules have to be more elaborate and that there, in effect, should be different patent rules for different complexities of invention. This notion of information asymmetry just means that the private participants in the patent system have different -- in this case, more -- information than the Patent Office. And I point that out simply because it is related to that theme of what I call the social welfare gap. Lerner basically finds that there is good historical and empirical evidence for the fact that grows over time as invention becomes more sophisticated.

Again, my colleague, Mark Lemley, writing with a co-author, finds in a recent empirical summary that what I would call the "sophistication of patents" has grown over time and is growing considerably, even as we speak. He argues that the increase in citations to prior art references shows that the patent system is in some sense responding adequately to the kind of new technological environment that we find ourselves in.

A very interesting paper which is just out, which I am going to summarize very quickly, is this recent paper by Ian Coburn, who is at Boston University, and some other colleagues. They actually did what I

think is the first empirical study of patent examiners. And what they found was a couple of very interesting things. Perhaps counter-intuitively, they find that experience and workload are not correlated with patent validity rates, which runs counter to some of the naive reform proposals that people like myself had made. The theory is, if we can retain patent examiners, patent quality will go up. They find that might not be right. There may be a burn-out factor that off-sets the experience factor or there may be other things we do not know about it. They did find that patent quality was declining in recent years, that patents issued before 1990 were upheld more often, and so that is cause for concern. But one of the really interesting findings that they had was that patent examiners who are in a sense more generous or liberal, who give broader claim scope, are cited more often and they also have higher invalidity rates. So the idea is that Patent Examiners who issue broad patents lead to a lot of "important patents" in the sense that they are broad, but they also become invalid more often. The courts invalidate them more often. And that just bears out a point Judge Rich used to make all the time which is, the stronger your patent the weaker it is, meaning if it is broader it has got a bigger chance of being invalidated, and the weaker your patent is, the

stronger it is. Anyway, it is a really interesting study. I do not have time to give the full kind of scope of the kind of work that is being done in this area. There are a lot of people and a lot of places taking a big interest. But I will say, from a practical point of view, I would summarize it by saying economists and people interested in patent policy have gotten really interested in recent years in this very important topic of the gap between the social cost of an invalid patent and the private incentive to invalidate it. And I think some really good and new and exciting work will probably come out of this at the theoretical level. Translating it into practical results, translating it into legislative proposals and actual court decisions is of course a much more difficult project. It is fraught with all kinds of perils. But I just want to say that, if you take the R&D analogy at all seriously and you believe in it, then what we have here is a real uptick in what I would call basic research on the patent system. And if our model is right, then eventually some of this basic research will find application in the real world. And so it is kind of an exciting time to be a basic researcher in this field because a lot of people are working on it and we think that there might be some real pay-off. So I want to make a final pitch to my students that the policy

stuff is really important in this area because it might make a real difference out there. So thanks very much for the chance to participate.

MR. COHEN: Our next presentation is going to take us over to the economic side. Joe Farrell is going to present some thoughts and will be using the slides.

PROFESSOR FARRELL: Thank you. Well, I am delighted that so many of my Washington friends are able to be here and I hope that these sessions are going to be helpful to you in what you are doing. What exactly are you doing? It seems to me there are two agendas here and, although there is a slough of interesting questions, I hope that you are thinking clearly about what it is you are trying to do. It seems to me there are two agendas. One is to do competition advocacy which, of course, is a traditional role for the antitrust agencies, and to do competition advocacy specifically in the IP sector. Okay? So thinking about ways in which the intellectual property system can become even friendlier to efficient competition than it is, thinking about how you should tweak it in order to make it better, leaving completely aside what Rob said is the grand question that we cannot answer.

A second also important question which perhaps is even closer to your daily workload is how do you do

good antitrust in markets or involving firms where intellectual property is an important part of what is going on. It seems to me those are not necessarily the same question. And I apologize that I have not been able to be here for more of the previous sessions, but from what I heard this morning and from what I heard from staff people yesterday, it sounds as if a lot of the discussion has been the first of these. And perhaps there has not been quite as much of the second. But whether that is right or wrong, it seems to me it is important to keep both goals clearly in mind and to keep the distinction between them clearly in mind.

So I am going to have a few things to say on each of those two agendas. I will try to be relatively brief. We could go on for hours. But in fact I noticed that when the notice of this session came around, it said that the session would last from 9:30 A.M. to 11:30 P.M. But I am going to work on the assumption that that was a typo!

It seems to me that, in terms of the competition advocacy mission, the first lesson, which is not controversial at all, I think, among economists or among sophisticated practitioners, but which sometimes gets lost in the political or quasi-political debate, is that more IP is not necessarily better. Okay? You

cannot measure the success of an intellectual property protection scheme by the gross revenues involved in licensing. You cannot measure the success of an intellectual property protection scheme by the profitability of having a patent. Those are not performance indicators. It is not true that there should be private property rights in everything. Now that last one might be getting a little closer to a controversial position, but it seems to me that we -- well, I will come back to that more later, but by and large it is not, "Oh, we should push for more, oh, we should push for more, oh, we should push for more, and that way the world will get better and better." Part of the reason for this is that intellectual property can be a costly way to get innovation, even on a static single-innovation model, intellectual property rewards and therefore gives an incentive for innovation through allowing the innovator to charge what I am going to loosely call "monopoly price" for the innovation. This brings up what Rob Merges quoted as the "but for" problem. Some innovations are going to happen anyway. The wheel was not patented. Okay?

So as a result of the fact that more intellectual property is not always better and intellectual property can be a costly way to go, it

should be used judiciously. In some places, in some industries, for some innovations it is essential or at least a very handy way of providing incentives and financing, and so on; in other cases, much less essential and perhaps much more costly.

Finally, there is a lot of discussion, certainly in the popular press and trade journals and so on about how the Patent Office maybe is doing things wrong. And as some of Rob's later comments illuminate, whether or not the Patent Office might be doing something wrong, or whether or not it might look as if the Patent Office is doing something wrong, if you examine it in isolation, that is really not the question. The question is to evaluate the process, the system, as a whole. And it is perfectly conceivable, as Lemley's work and others have suggested, that the efficient way to organize the process as a whole is to have the Patent Office be relatively generous in awarding what are called patents, but in what some sense might be more accurately described as opportunities to litigate for patent protection. That does not mean that is true, and in fact I suspect it is not entirely true, but it is perfectly conceivable and the analysis really needs to look at the process as a whole.

Alright, the first point under this, more

intellectual property is not necessarily better -- I am not going to spend a lot of time on this. It may not even be better for innovation. Innovation is not our only goal, but it may not even be better for innovation to the extent especially that having a single steward of a line of innovation might lead to a limiting of a degree of imagination. And this suggests -- I am not going to go further than suggesting here -- it suggests that we might want to try to have some different way of looking at things. It would not necessarily lead to different treatment because that would involve some severe practical problems, but at least a different way of looking at things in areas where the innovation is clearly defined, well specified, the next step in Moore's Law, okay? Creating the micro process at twice the speed of the current generation.

A lot of people probably know roughly what has to be done in order to do that, but it is very expensive. That is a rather different problem. Encouraging that kind of innovation is a rather different problem from the kind where you want to have many imaginations working on a problem and, once the imaginative spark has been struck, it may not be all that expensive to bring it to fruition. In the one case, incentives are crucial, and that is perhaps all you need. In the other case, while

incentives are never unimportant, it might be more important to have widespread opportunity and diversity of approaches. So it is a different problem.

So how might one set about using intellectual property judiciously? Just a few thoughts. One thought is we might want to use it less intensively, less generously, when there are relatively few alternatives to the invention. Okay? Why? Well, because in classical economic terms, at least, the welfare cost of using intellectual property protection is the economic distortion created by giving exclusivity, giving a monopoly if it is a sufficiently broad exclusivity. And that says the cost is higher and any economist can tell you that, where the cost is higher, you want to do less of it. Now you have to be careful here because, relative to something, the benefit might also be higher. So this needs to be thought through some more, but it is a dimension on which you might want to use intellectual property judiciously. You might want to award less generous intellectual property protection when you have a new field for innovation where there may be many obvious and easily realized innovations just waiting to be made. So this goes back to the "but for" standard. If you have a new field of endeavor, it is not obvious that we should not say, "Okay, let us wait a year or so, picking a

number completely at random, and see what people come up with just out of natural curiosity or out of non-intellectual property incentives to innovate first. And then, whatever has not been invented, we will say, "Well, perhaps it is now important to give the additional incentive created by intellectual property protection." I raised this idea at a conference a couple of years ago in an attempt to provoke discussion. It actually got reported in a newspaper. As far as I could tell, the discussion kind of ended there. And I assume that is because there was no earthly chance of it happening, otherwise people would have jumped on it. But if what you are trying to do is provoke more discussion, interesting ideas for the intellectual property system, as part of competition advocacy, I am not sure how you set about making people discuss things that they are not afraid might happen, but that might be part of the process.

I have also suggested elsewhere that, where network effects are important, there can be arguments for giving less by way of intellectual property protection. Basically the network effects -- in many circumstances, not necessarily -- already give a considerable degree of protection. And the incremental protection given by intellectual property may be particularly harmful in

terms of deadweight loss. That is the very classic argument. There are other things going on. Again, I do not mean to suggest that this is the answer, but I do mean to suggest that this might be an important question.

Evaluating the process as a whole, Rob Merges already talked about this and pointed you to some literature that talks about it in much more detail than I can, but I want to stress again that PTO policy is not the final answer, it is a part of the process. Having said that, I certainly do not feel comfortable with the idea that we say, "Okay, uh, anyone can get one of these proto-patents." And the answer is in the litigation. Litigation is slow, and it is costly, and it is scary, perhaps especially to small players. And so we should not regard it as okay that a lot of invalid intellectual property is around and can be used as a threat until it gets litigated to completion. However, the methodological point still stands.

What is the goal here? Well, I suspect that, in D.C., you hear a lot from people who want there to be more intellectual property protection, and you hear a lot from people who want there to be less intellectual property protection. The non-lobbying message is that both kinds of errors are costly. So we want in some sense to minimize infringement of good IP, whatever

"good" may mean, and at the same time to minimize enforcement of bad IP. That says that you cannot just say, "Oh, we want easier opposition. We want different standards applied in litigation, and we want different presumptions." Maybe those things are true, maybe not. But remember that it is a balancing act. You want to minimize both types of errors simultaneously, if possible.

And coming to the last bullet here, Rob already talked about this, basically it is an information problem. There is a lot of information out there that bears on whatever the legal standard is, whatever the legal standard should be, for intellectual property protection, and that information does not all arrive at any one person's desk right away in the beginning. Okay? So we have to think about both incentives and opportunities for a lot of people to adduce possibly useful information. And that is where we might get into application, timing and costs. If it is costly to apply, then perhaps the applicant will do more screening. There are some good sides and bad sides to that -- timing and breadth of publication, search by the Patent Examiners, search perhaps by bounty hunters looking for a reward for producing prior art, opposition by interested parties, and litigation. As Rob mentioned, and Rich Gilbert

described earlier, there are some interesting and perhaps dysfunctional things in the strategies of patent challenge. So for example, think about a firm in a highly competitive industry, all of whose members are subject to a royalty charge on some debatable intellectual property. If this competitive firm successfully challenges the intellectual property, often it will be a case that not only will it no longer have to pay the royalty, but all its competitors will no longer have to pay the royalty as well. To the extent that competition in this competitive industry leads to full what I call "relativity," that is, you do not care so much about the absolute level of your costs, but about the level of your costs relative to competitors, there may be very little incentive to challenge. What happens if the intellectual property holder has a policy of giving better terms on the license to those who do not challenge than those who challenge unsuccessfully? Might that be enough to completely deter a challenge, and therefore in a game-theoretic strategy, if you like, achieve the equivalent of intellectual property protection on something that in fact may be quite weak? I do not know. It seems to me more research needs to be done on this, and one of the areas where you might want to push is to clarify exactly what questions you would

like to know the answer to in this kind of way. As a former Journal Editor, I will tell you there are many Ph.D Economists who desperately need good research topics.

Let me go back to this slide, two agendas. I have talked a little bit about some themes that come up in competition advocacy and intellectual property policy. Now let me talk a little bit about the other half of what I take to be your agenda, doing good antitrust where intellectual property matters. And here, four things that I want to comment on very briefly. The first is, "Must one assess the intellectual property?" Assess its scope, assess infringement, assess validity. Second, "To what extent can and should antitrust agencies treat intellectual property IP like any other P?" Third, "Dealing with compliments and substitutes in the IP area," and fourth, "Thinking about scale and innovation." Obviously, I am not going to say very much on each of these, but just to raise them and make sure they are on your screen, and we can talk more about them later if people want.

So first, "Must want to assess the IP." I think it is fair to say that the antitrust agencies are reluctant to get into making substantive judgments of whether one product infringes one piece of intellectual

property or a portfolio of intellectual property, whether the intellectual property is valid. That is what I mean by assessing the IP. And it seems to me it is not certainly in the traditional area of expertise of antitrust agencies. I think the agencies are reluctant to do it and they are rightly reluctant to do it. It is possible that you will at some point have to do that. I do not think you need to shy from that to the extent of being unwilling to do your job if that is required, but I think it would be appropriate for you to be in some sense reluctant to do that. I think there are some substitutes for doing that. In particular, if you have a piece of asserted intellectual property and a competitor is allegedly infringing it and offering product and is willing, let's say, to indemnify customers, or customers are willing to buy knowing that there may be some claims for damages later, that provides a kind of market signal of the expected strength of this intellectual property. And it seems to me appropriate that you would be willing to trust these market signals in conjunction with, or possibly even instead of, an internal analysis of the validity and strength of the intellectual property -- something to think about anyway.

Is settlement a good thing? Of course, the legal system as I understand it really likes settlement

because it gets thing off the docket and it feels good because people are not fighting anymore, they have resolved their differences in some relatively friendly way. That is probably right if you have settlement between two parties that jointly lack market power. If you have a settlement in general between two parties that jointly have a great deal of market power, then there is a lot of scope for mischief. That does not change the fact that there is also a lot of scope for good in settlements, and of course that is what makes it difficult.

Should one treat IP like other P? I like the quote from the Microsoft decision, the Appeals Court Decision, that said, "It's your intellectual property. It is my baseball bat. That doesn't mean I can swing it wherever I want." It is kind of along the lines of treating intellectual property like other property. And I think that is a pretty good starting point. It is not always going to take you all the way, I suspect. Intellectual property, as a matter of fact, does have certain special properties. For example, no physical or technological congestion. Broader use does not spoil it. It may spoil it economically, but it does not spoil it technologically. The real question is not, "Is intellectual property just like other kinds of property?"

In some ways it is and in some ways it is not. The real question is, "When does that matter?" And I would suggest that the agencies ought to be willing to take into account the fact that intellectual property has some certain special features where that matters, but that does not mean that you should be asking different questions. Ask fundamentally the same questions and take the facts into account. Let me leave that for the moment.

Compliments and Substitutes -- obviously, anybody who does antitrust knows that compliments are the opposite of substitutes. Where you want substitutes to be kept separate, by and large, you want compliments to be combined by and large. And pretty much everything has the other side. If you have two pieces of intellectual property that bear on some industry or perhaps some set of industries, how do you set about telling whether they are compliments or substitutes? If you have 47 pieces of intellectual property that bear on an industry, how do you set about telling to what extent they are substitutes and to what extent they are compliments? So, for example, if you have a merger between one firm with 32 of these pieces of IP and another firm with 15 of them, and you can see some substitutability relationships and you can see some complimentarity relationships, how do you

assess whether this is broadly a merger of compliments or broadly a merger of substitutes? I have not the faintest idea. It is really hard. But that is a question that is going to be coming up, probably has already come up.

One of the lessons of the Microsoft case that is quite a challenge, I think, to good antitrust thinking is that compliments can become substitutes. In the Microsoft case, certain pieces of software or middlewear were, in the short-run, compliments to Microsoft Windows and, in the long-run, Microsoft thought might well be, or sponsor, or become, or take the role of substitutes. That makes it even harder to decide whether two things are compliments or substitutes and, accordingly, how antitrust should view them. And is this more likely to happen with IP than with physical assets? I suspect it may be, but again, it is going to be fact-dependent.

Finally, a little bit about scale and innovation because I have no doubt that you hear quite frequently in Washington, "Oh, we want to become bigger, we have to become bigger, we want to merge, we want to do so and so," because scale will encourage innovation. I think those are difficult claims to assess by and large. Here are just a few things you might want to think about in developing policies to assess claims like that. One thing is the scale over which an innovation is going to

be exploited does reduce the relative cost of innovation compared to, say, cutting prices. If you have a large scale of innovation, then the R&D dollars are going to be spread over a larger number of units of output. Okay? And so there is a sense in which scale does encourage innovation certainly relative to, say, price-cutting. Now you have to be careful, as I will stress in a minute, about what scale you are talking about. But there is a real sense in which this is true. At the same time, market power reduces firms' incentives to offer surplus, whether by innovation or by price-cutting. Okay? So if you want to look for the effect of scale bundled, if you like, with market power, suppose you imagine some merger that plausibly will increase scale and create some market power, imagine what is the effect of that on innovation? It seems to me there are these two forces going in opposite directions. So that is a difficult question. And then two easy outs that probably are not really available in the interesting cases, but worth checking for them. One easy out is to ask the question that I like to ask about scale efficiencies in general, which is why not achieve scale, not by let's say merger, but by offering a better product and getting more customers? And if you think back to the classic Arrow analysis of incentives for innovation, that is exactly what happens.

Those of you who are familiar with that work will remember that Arrow talks about a competitive firm meaning a very small firm having a very large incentive to innovate. Why? Because innovation gives you a slightly lower cost and you then take over the whole market. So scale is not exogenous in that model. Now sometimes, typically, scale will be more exogenous than that makes it seem. Okay? And so it is an easy out that probably is not completely available, but it is something to think about.

And finally, licensing, of course, unlinks the size of the firm that does the innovation from the scale on which the intellectual property it creates can be exploited.

So my goal here really was to say a few things about a bunch of different topics, but the over-arching goal was, I think, to hope for some clarification on these two agenda items -- doing competition advocacy in the intellectual property world and how do you do good antitrust when intellectual property is there? And I think those are both very difficult questions. I both envy you and do not envy you having to do them.

MR. COHEN: Thank you, Joe. Now Justin Hughes will give our final presentation and then we will turn to some discussion afterwards.

PROFESSOR HUGHES: Thank you for inviting me today. I recently left the PTO and am now teaching full-time, so I do not have a fancy show for everyone. I have a hard enough time finding my classroom, still. But if I were going to give a title to the remarks I'd give, I would steal something from Professor Farrell. I would call it "No Earthly Chance of It Happening." I spent too many years in Washington watching and reading interesting proposals, many of which Professor Merges put on the Powerpoint for us, reading them and thinking, "That is really interesting," and, "That has about as much chance as a cellophane dog chasing an asbestos cat through hell." And I think what I want to talk about a little bit is what we can really effectively expect of the patent system and the front end of the patent system, which is the Patent Office, in its awareness of economic issues, and then actually talk about where I think there are some opportunities or the best openings for interesting ideas to bring about some reforms in the patent system.

Professor Farrell said that antitrust agencies are rightly reluctant to assess intellectual property. And I must confess that when I was invited to come here today -- I sometimes have a very literal mind -- and when I was called, they said something to me quickly and it

was a call out of the blue, and it was something about "economic criteria in patenting," or "economic criteria in granting patents." And I went on the rest of my day and I started to think about that and I called a friend who used to be at DOJ Antitrust, Chris Kelly, and I said, "Chris, they couldn't have meant that, could they? I must have misunderstood. I will have to call them back." And he said, "No, that is what they mean." I had literally thought the opposite of Professor Farrell's idea. I imagined a patent examiner sitting there and, after going through standards of patentability, trying to assess the market impact of the claims he or she was going to grant, and once doing that for those claims, to then assemble a list of the various patents that the new patent holder also held, and do an assessment there of the total market impact of what effectively would be granted by the government in what a lot of people call a "monopoly." Well, as soon as you think about it that way, it is a very scary thought. And even for some of us who are not Constitutionally afraid of government regulation, the idea of patent examiners even thinking thoughts like that is frightening. So while we all recognize that the patent system as a whole is a regulatory structure, I think the single grant of patent rights as it comes out of the patent examination process,

the PTO, as more like a random event. Now I do not mean a random event in the sense of the patents Greg Aharonian sometimes entertains us with, but a random occurrence from the perspective of what a central regulator would like a competitive economy to look like, or what a central regulator would even like a particular niche or market or submarket of a competitive economy to look like.

Now, on a good day, from as best as I can tell from the time I was there, the PTO's work is daunting and sometimes overwhelming. I think it is actually getting better. It is getting better for macroeconomic reasons that really do not have any relationship to who is the PTO Commissioner now or who has been in the past. Just as the boom of the 1990's was good for the PTO's business, I think the downturn of these days may actually be good for the PTO. Now Rob was talking about evidence or recent scholarship indicating otherwise. I have always assumed that less attrition among patent examiners would be a good thing because it improves the knowledge base of patent examiners. And that has certainly been an operative principle in PTO policy. I am afraid that this recent scholarship suggests we should be trying to push Examiners out the door. But I have assumed that, as the job market is less hot than it was in the past few years,

that this would actually be good for the PTO to have a chance to solidify its knowledge base. And it is a knowledge base that really does need stabilization and is slowly stabilizing. It needs it because, in the 1990's, there was almost Kuhnian paradigm shifts in many different ways in terms of intellectual property. One, there was a shift in the underlying technology with the explosion of Internet technology; and then two, there was a shift in what people thought was patentable technology which was a massive paradigm shift of its own within the intellectual property world, and then there was bringing pressure onto the intellectual property world a massive paradigm shift in how the business community understood assets and intellectual assets and knowledge based assets. And I do not know how many of you have read this book, "Rembrandts in the Attic," but I was forced to read it by the COO of a big electronics company who gave it to me for Christmas and wanted to know what I thought. It is 200 pages of business person airplane reading -- a stretch, 200 pages -- if you think it says anything about competition law or antitrust policy, you are completely wrong. There is not a word in there. But do not fret, it hardly says a word about patents too. It is called "Unlocking the Hidden Value of Patents." And I realized after 200 pages, they do not explain what a specification

is, they don't explain what claims are, they don't explain the difference between a pioneer patent and an improvement patent, and what is disturbing about this is that there are lots of COO's and CEO's and CFO's out there in Fortune 500 and Fortune 5000 companies reading this book and then calling their lawyers and saying, you know, "Let's get the maximum value we can out of the intellectual property that we have." So I think that that paradigm shift has put a whole lot of pressure on the intellectual property community from the PTO and throughout the rest of the community. It is kind of a nice moment in the sense that we suddenly have all this attention, those of us who are interested in intellectual property, but it is also a sobering moment because the attention has now turned to scrutiny.

Now, as for the other thing I wanted to say on PTO operations, I do think that, in the 1990's, Bruce Lehman did a very important thing for the PTO in that he really, really pushed the agency on information technologies, automation, and computerization. And anyone who has been around the campus of the PTO and knows the shoe boxes, and knows that the PTO Examiners Union fights and argues about the size of offices, not about the quality of patents, knows that the importance of establishing that the information technologies that

are available to the PTO examiners is going to be a key issue as to whether or not the stabilized knowledge base can actually help improve the quality of PTO patents in the future.

But as to what Chairman Muris identified as a possibly imbalanced view when these discussions or hearings were opened before, I have to say that I am afraid the PTO has contributed to that to a small degree. And I know how we have done that, or when I was there how we did that. On the one hand, the PTO is happy to say that the expansion of patentable subject matter is not the PTO's doing, it is the doing of the courts. And that is largely correct. But obviously the PTO has had a hand in it. In the State Street case, there had to be a patent in which to decide that business methods would be patentable. And the PTO is not any different than any Washington bureaucracy in that sense. They vary in bureaucratic terms. It is a large organization that is happy to grow larger, and is happy to have an important role, happy to have both importance and perceived importance in the economy. So it is hard to look to the PTO for an expectation or for any arguments or for any proposals that the realm of patenting or the importance of patenting should be shrunk. So when Chairman Muris says that the patent professionals of almost all stripes

-- and that is not just the PTO, it is certainly all patent attorneys -- have gotten a little property intoxicated -- that is my phrase, not his -- and that they may have failed to give competition law and antitrust policy its due, I think that is right. But at the same time, I am not sure that in the division of labor it is for the patent attorneys or for the PTO to worry very much about competition law and antitrust policy, for the same reason that Professor Farrell said, rightly so, the antitrust agencies are not very desirous of having to assess intellectual property. So if you look at Undersecretary Rogan's statement, this is his February 6th statement for, I guess, the initiation of the Washington hearings, very clearly and distinctly, he declared that a patent is not a monopoly. He actually was repeating remarks made by his predecessor, Undersecretary Dickinson, that the patent is not a monopoly. I know that because I wrote those remarks. I did that precisely so that we could, as an agency, step away from the very interesting discussion, or the claims that appear in jurisprudence throughout American history, that a patent grant is a monopoly because if you say that a patent grant or a copyright grant is a monopoly, you give attorneys an argument that the government regulators have, in essence, granted this monopoly and it should be

immune from antitrust and competition law scrutiny. And you see that argument raised. It is a dubious argument, it is a silly argument. But what we needed to clearly say, and what I think what needs to be clearly said by the intellectual property agencies, is monopolies and the conclusion that there are monopolies in the economic terms are not our business, and we do not grant monopolies. And we need to undercut the argument that some people make, particularly in litigations, as Microsoft did, that when they are granted these copyrights or patents, they are given some monopoly rights that should somehow trump competition law scrutiny. Now when we talk about economic criteria, though, in the patenting system -- and we do not want to have to imagine a patent examiner sitting in her windowless office trying to figure out how much market share the applicant will get when she grants them these six claims -- when we talk about translating economic concerns into the actual patenting system, we have had broad or wide-ranging discussions about patentable subject matter, about the level or test for non-obviousness, about the concerns for prior art, and much of the very interesting literature that Professor Merges went over about tinkering with the patent process and the actual application process. And there is a very

interesting draft paper by Mark Janis who -- Professor Merges had another article of his from the Harvard International Law Journal on one of the Powerpoint slides -- but Professor Janis has a new draft paper talking about patent reform in the 19th Century and Great Britain. And it is a wonderful paper and it is wonderfully depressing because all of the arguments for patent reform in the 19th Century can largely be transposed into the late 20th and 21st Century in America. So a lot of the ideas of tinkering, or almost all if not all of the ideas of tinkering with the patent granting process had been around for a long time.

What I would like to talk about is what I see for the window for interesting reform of the patent system, or at least a meaningful addressing of fundamental issues. I would like to go back to patentable subject matter. And I do not want to beat a dead horse -- or, if I do want to beat a dead horse, I want you to think it is alive, at least, for the moment. So I want to talk a little bit about software and business method patents. And I want to talk about the good news, the bad news, and the interesting news. I think the good news is that, as John Love will have discussed or has discussed, or will discuss today, the PTO is definitely getting better in handling business

method patents. The 2000 program for improving business method patents seems to have genuinely worked. And when you look at the statistics and you look at the application statistics and the grant statistics, and you just look at the increasing sophistication of what the PTO is issuing, it really looks like the system is fixing itself or largely fixing itself. Many of you know that the Business Method Patents Program now requires there to be a "second pair of eyes" that looks at the application. And I wanted to talk about that second because most people do not recognize that there is a little bit of a problem the PTO has with that. And that is, by the terms of Article 27 of the TRIPS agreement, as we interpret it in the United States, the United States is obliged to treat all areas of technology, all fields of technology, the same without any discrimination among them. And if it were ever the case that we had one field of technology, or what people could claim as a field of technology, that was getting a different examination process, that was being treated differently by the PTO systematically, there would be a potential argument that we were in violation of the TRIPS agreement by not comporting with the requirement of Article 27. Now the good news, as I said, is that I think the business method patents are here to stay, unquestionably -- or, sorry,

the good news is the PTO is improving. If you take it as bad news, that business method patents are here to stay, Professor Merges said that it was a rallying point, and I take that past tense very seriously. But what is interesting now and what people should focus on is the dichotomy that now exists between the United States and Europe on business method patents and software patents. It is very interesting because one of the things when we look at intellectual property, we do not have good test cases. We do not often have very good comparative cases of different events, economies doing different things, but we are getting a very good case of the Western European countries who belong to the European Patent Convention taking a very different standard on software patents and business method patents. By the end of 1999, the European patent office had issued about 13,000 software patents which is considerably less, less than half of I think what were the software patents that were then out in the United States. And this is because the European Patent Convention has a requirement that any software application that is patentable make a technical contribution to a process. And there is a lot of ambiguity in interpreting that, but it is considered by many people to have created a bar in Europe to software patents, and certainly a bar to business method patents.

And what is interesting now is the research that is going on on the effects of that on small and medium-size enterprises, on large enterprises, and the politics are very interesting too. And the politics are interesting because, in the United States, we have ended up with business methods being patentable purely as a matter of judicial fiat. It was not a hard-fought legislative battle with lobbyists going at one another, with academics going at one another. It was simply the status quo very quickly changed by a couple judges and a couple of judges opinions. In Europe, we have much more of a typical situation of intellectual property law development or intellectual property law reform where there is a lot of opportunity for serious discussion of economic issues and how intellectual property does or does not affect and stimulate innovation. Now that is not useful to us because the United States is always interested in international harmonization of patent standards, and so it is possible that the discussions in Europe on software and business methods could be very revealing to us about what we are doing.

Now the last thing I wanted to say, to summarize, is that "grand question" of the "but for" question -- you find it everywhere. I was just looking at some of the recent papers on Software and Business

Method Patenting from Europe and, literally, you find it there too, that patents should only be granted where it is a necessary condition for X, and sometimes X is identified as innovation, sometimes X is identified as diffusion of a technology. But the problem is that in a lot of proposals you see for better tweaking of the intellectual property system and the patent system to reflect the desired incentive structure economically, is that you end up with the recognition that different kinds of technologies have very different development cycles. Professor Merges has written about this in a very interesting 1990 article with Richard Nelson. There are different cycles of development to technology and different ways technological innovation occurs in different industries. Not only that, there are different kinds of innovation. We know that there is a huge difference between a pioneer innovation or an innovation captured by a pioneer patent and the more small incremental innovation that is manifested in improvement patent. And we have that tremendous diversity and we have, in essence, a one-size-fits-all patent system. Usually the proposals for tinkering with our one-size-fits-all patent system are proposals to say, "Let us identify this and change the rules a bit to better make the rules fit the economic incentives needed for this

particular sector." And so Professor Farrell suggested that, in a new field of endeavor, perhaps you would want to withhold patent protection for a time. And what is interesting about that is the pragmatic mind immediately goes to all kinds of issues of, "How are we going to define what the new field is? Since it is a new field, we won't even know it is a new field until it is an old field, will we? And if we did think it was a new field and we later turned out wrong, what would we have done in terms of our incentive structure? What if it turned out just to be a little blip on an existing field and we withheld patent protection?" So when you seek a different incentive structure or you want to treat the incentive structure for the economic reality of a sector or subsector of the economy, it makes a lot of sense on paper, but it has two major deficiencies. The first one is the impossibility of tailoring the law quickly enough to respond to the technological development cycles in our country. That is one. And two, there is a tremendous desirability, actually, to the one-size-fits-all system, and that is because of the problems of information flows. That is because of the problems of "Rembrandts in the Attic," okay? Two hundred pages later, the average businessman understands practically nothing about intellectual property.

I can only tell you how important this information flow problem is and the desirability of a simple, consistent, somewhat understandable IP regime is by telling you a story from copyright law. I was at a conference in Atlanta and I got invited to an artist's exhibition. And he had these huge paintings of the Scooby-Doo characters on the wall. And I spoke to him and I said, "By the way, have you talked to Hanna-Barbera about this?" And he said, "No, no problem. I followed the rule of seven differences." And I said, "Oh, really? What is the rule of seven differences?" And he said, "Well, as long as there are seven differences between my Scooby-Doo and their Scooby-Doo, I do not infringe." And I said, "Well, really?" So here we have a creator of a very different scale, but maybe closer to a small and medium-size enterprise, maybe closer to an independent inventor, who is genuinely clueless about an intellectual property regime which is relatively simple compared to the patent regime. So the problem with tweaking the system to make it efficient is there is a real real huge information flow problem. And that is something I think we need to take into account in any proposals that we consider. Thank you.

MR. COHEN: Thank you, Justin. Okay, I would like to open things up for discussion. I have heard a

number of themes. Maybe we will explore a couple broad questions and then move into some of the more detailed questions. By the way, your assumption that we did not mean 11:30 P.M. may not be right, looking at the list of things that I would hope we would get through, but we will move ahead. I will ask you, if possible, to try to keep your responses to individual questions as brief as possible so we can cover as much ground as the time permits.

I guess one general question would be if we are thinking about, at all, the idea of improving patentability standards, a general question might be, does the PTO really have any discretion, any significant discretion here, on standards? Or are we necessarily speaking perhaps in our competition advocacy voice to the Courts and Congress?

MR. LOVE: Well, not having presented this morning, I did present yesterday, Justin, some of the statistics and results that we have been getting from the "second pair of eyes" review and the other initiatives and the Director's 2000 Initiative, but in listening to the three presentations and discussions yesterday, the amount of discretion that the PTO has is very limited. I think people need to understand that. And since we are getting into the area of judgment and opinions, I guess I

should state that, of course, I am speaking for myself right now and not in any official capacity for the PTO. But we are constrained quite a bit, in the first place as a statute, 35 U.S.C., of course, that explains very specifically the conditions for patentability and, in addition to novelty or non-obviousness, patentable subject matter -- 101 is a considerable restriction. We are also constrained by the way the CAFC interprets those provisions. And to the extent that we have to follow the decisions of the CAFC, and we cannot go outside the constraints of the law, which state that, "A patent shall be granted unless...," I mean, there is your discretion. And the burden is on the PTO by empirical evidence, evidence that will stand up in Court, that one of the conditions of patentability is not met. So to answer your question, at least from my perspective, we in fact have very little discretion and we are constrained by the interpretation of the law by the Courts and the very specific provisions of the law itself. And I do agree, court decisions do have an impact to a large extent on the range of patentable subject matter, but it is very rare that the Legislature will take on that question and deal with it by amending the patent laws, which substantively have not been amended to great extent since 1952.

MR. COHEN: Ray.

MR. CHEN: Thanks. To answer your question, you are right. This is an issue of the courts and Congress. As far as patentable subject matter, I think what Justin suggested was right, that it is pretty much a dead issue as far as the PTO is concerned with regards to questions of software and even business method patents. You know, I think we all know that ten to 15 years ago there was a very fierce debate about whether or not so-called software computer implemented inventions should be eligible for subject matter. And that seems to be a closed issue now. And I think what the PTO is required to do is to carry out the mandate of the statute, and the statute for eligibility of patentable subject matter is drafted very broadly. Any method is really eligible for subject matter, not just business methods. Any kind of improvement in any kind of process is eligible. Furthermore, we take our dictate from the Diamond v. Chakrabarty case, which essentially said that anything under the sun made by man is eligible for subject matter protection. And also to that extent, the Courts are also playing a large role in regulating what the PTO can and cannot do with regards to art rejections. The PTO used to make subject matter rejections all the time in the area of software before the Federal Circuit eventually

evolved its case law on that matter. And now we have been sort of compelled to move over to strictly art rejections in that area. But also in the area of non-obviousness, it seems like in the past few years, the CAFC has been curtailing the types of rejections we can do in that area in the sense that the standards have been stricter in terms of scrutiny of our 103 rejections. When I say "103," I mean non-obvious rejections. So in that sense, that is all true and it is a question of the Congress and the courts, it is not necessarily a question for the PTO.

PROFESSOR MERGES: Can I interject quickly?

MR. COHEN: Yeah. One quick suggestion -- if people happen to have thoughts that they want to contribute, maybe you can turn your name tags up and that way we'll know.

PROFESSOR MERGES: This implies I am going to make a contribution, so I'm wary. I will put it half-way. It's a half-baked -- the discussion here is something that I hear all the time and the policy players under discussion are the Court of Appeals for the Federal Circuit and Congress. I think we are forgetting about somebody. We are forgetting about the Supreme Court. The notion in our generation that the Supreme Court would weigh in on something as detailed as Section 103 is kind

of revolutionary, but I think this kind of discussion, and the discussion about things like Federal Circuit review of non-obviousness rejections, these days is percolating up. It is percolating up in cert. petitions and increasingly in cases that the Supreme Court hears. So I would say that there is an important sector that is re-entering or potentially re-entering the stage. And that is an action that is going to be a lot more open to broad policy argumentation because that is how they see their job. And so, I think these are really good points and I would say, particularly on the Section 103 discussion, this is a dead horse that I have beaten many times, is that, if you look at Supreme Court precedent, which is what they will look at when they next take a Section 103 case, you can argue that, just on the basis of that precedent, what the Federal Circuit has done is deviating from the law. It is because, effectively, we have not had a Supreme Court in the patent field. The Federal Circuit has been the Supreme Court of patents, but this Supreme Court has shown an interest. Successive years show more and more cert. grants. So what I am trying to say is that these policy arguments are going to potentially have more traction. It will not be very often that they take a case, but when they do, it will open the door for this kind of discussion. So I just wanted to

throw that out because I always hear this and people forget about that.

MR. COHEN: One more and then we will move onto another question.

MR. CHEN: Professor, I would just like to follow-up on that idea. Do you think that the Supreme Court would have in mind changing the Graham v. Deere case and in some way modifying the standard of obviousness that they put forth in that decision?

PROFESSOR MERGES: It is impossible to know what they would do, but I would say it is very likely that they would implement a minor course correction on Federal Circuit doctrine by citing Graham v. John Deere, and by in effect saying it is not dead. Do you see what I am saying? Let me give you an example. Graham v. John Deere talks about the objective factors and it talks about the rationale for Section 103. Implicit in that, I think, is a rejection of some of the more extreme Federal Circuit cases on the so-called suggestion test. I think you could say that that is inconsistent with Graham. The motivation test? It is not in there. And this is not even to talk about the secondary factors which the Federal Circuit has elevated from the fourth consideration which may be considered into sometimes the most important consideration, right? So there is a lot

in Graham v. John Deere which is still on the books -- it has never been overruled -- that you could argue the Federal Circuit has slowly deviated from. That is all I am saying.

MR. COHEN: Okay. The other general question I had, I think, springs from some of Justin's comments. We know his views. He was talking in terms of the one-size-fits-all issue. I am wondering what the various panels think about, whether there is any likelihood to tailor substantive patenting criteria to better account for differences between industries. Anyone have thoughts on that?

PROFESSOR FARRELL: Well, yes, of course implementation issues are going to be important, but let us remember, as I said earlier, you have to treat the system as a whole. And to, say, pay attention to facts about the industry, facts about the proposed patent, does not mean that some patent examiner has to do it. It might mean that a court might do it later. Which of those makes more sense or whether neither of them makes any sense has to be evaluated in a holistic way and not just thinking about an overworked Patent Examiner.

MR. COHEN: Okay. I would like to spend our remaining time going through some of the individual elements of the patenting decision. Perhaps the place to

start would be with patentable subject matter. We have heard about a number of improvements that have been made in the area. I would like to throw a question to Professor Merges and ask if you are still seeing before your breakfast some patents that surprise you in this area?

PROFESSOR MERGES: Yes. He is referencing this article, the best part of which is the title, "As Many as Six Impossible Patents before Breakfast," it is called -- Alice in Wonderland. To tell you the truth, it is hard for me to evaluate that kind of thing. I have not done a systematic empirical study. I believe what I hear and I also know that, in general principles, the number of poor quality patents in any field is going to go down over time. That is fact because as the prior art builds up, and as the patent prior art particularly builds up, it simply becomes impossible to sneak pitches by the batter. I mean, they are going to be clobbered. But I will say this, I think the statistics that John is talking about are extremely important because they show that, first of all, patent scrutiny is a policy variable and it is something that we can change, number one; and two, if it is true that the "second pair of eyes" proposal is working, then it seems to me that it is the kind of thing you might want to try to duplicate in other fields. Let

me just say you can always point to bad patents. And one of the things that drives that is, you know, in any organization with 3,000 employees, I mean, if I were to say, "Who here in Berkeley is doing the worst research today," I would include myself, so I might be a candidate on any given day, many days. You can find some stuff. And they used to do this -- they used to give the Golden Fleece Awards for really ridiculous stuff. And it does not mean that the whole enterprise is shot to hell. What it means is, you have got some bad apples. So the kind of Greg Aharonian, "Let's elevate last week's worst patent to a kind exemplar of the system," that does not necessarily work for me. When I see systematic studies that show the number of prior art references cited as going up, that makes me a little more confident. I don't know if that really answers the question or not.

MR. COHEN: Let us turn to a key factor, non-obviousness. We have heard a bit about a possible "but for" standard. I am wondering how the panelists feel the patent system in an ideal world would deal with inventions that result as a fairly mechanical natural evolution of what has gone before, such as where an inventor need only try each of a limited array of possible choices until one succeeds. John?

MR. LOVE: Well, first of all, I forgot to

mention, I am still waiting to hear about my pay raise. There are several principles around 103 and non-obviousness that come out of court decisions. And if we are talking about routine examination or something that would be obvious to the one with ordinary skill in the art, we have principles that generally cover those situations. I do not think we give out improvement patents to contributions that are routine or would be readily obvious to the one with ordinary skill in the art. So I think we do have an inventive test as it is in 103 right now. I am certainly, I guess, very reluctant to want to introduce any time of economic test into this whole question of obviousness. I think you really are introducing another level of uncertainty and complexity that I, for one, would not be comfortable giving to examiners. And to suggest that we should have different standards on obviousness depending upon the nature of the invention, again, I think would introduce another level of uncertainty and just very difficult standards and legal tests to apply in an area right now that, of course, is very difficult for the examiners. And in most cases, that is the ultimate question that they have to resolve, this "Whether or not this improvement or the differences between the prior art and what the invention is is in fact obvious?" And of course there are whole

textbooks full of law that deal with that question and what factors do tend to indicate obviousness and what factors do not.

MR. COHEN: Professor Farrell?

PROFESSOR FARRELL: Well, I think, you know, obviously obviousness is somewhat case-specific. It does worry me when I read about firms who are worried that something that they have been doing for a long time might get patented by somebody else. As Rob points out, you cannot judge a system by its dysfunctions entirely, but it does hint that it might be too tempting to try to patent something without really checking to see whether other people are doing it. And it might be too painful for somebody who has in fact been doing it for years to get the courts to dismiss a patent that might result from that. I do not know what specific policy changes that might push us towards, if indeed it is a broad worry and not just a few bad cases, but I think it is something to worry about if people are systematically worried that something that the industry is doing or that they have been doing for a long time might get patented by somebody else. That is a sign of real trouble, I think.

PROFESSOR HUGHES: I just wanted to go back to something that Professor Merges had said, talking about petty patent systems and Jerry Reichman's writing about

subpatentable innovations. That may be a genuine way to permit one to retain or improve the threshold of non-obviousness, by having a petty patent system of some sort. And the reason I find that appealing as an idea over the long-term is it is actually politically viable too. If you tell the patent buyer they will have something new to sell, you actually might make it happen as a matter of law. So that might be a way actually to protect the system by creating a smaller form of property right.

PROFESSOR MERGES: Bill, just one quick addendum, which is tangentially related to the obviousness question. There is an important policy issue floating around in this area that has not gotten enough attention and that is the fact that sometimes there is one firm that holds a key piece of prior art that could invalidate another firm's patent. And I do not have good evidence of it, but I know there are very strong incentives for those two entities to collude and, in effect, for the patentee to buy the right to suppress a key piece of prior art. And this is really a gap in our law because if you have two patentee's settling a case, then the antitrust folks can get involved, but if you have two patent applicants settling an interference, Section 135 requires them to file with the office a

record of their agreement. But here is a case which falls into that kind of gray area where a private deal to suppress a prior art does not seem to have any public policy review, even though it can have the same economic consequences as an interference settlement or even a patent license, and in some ways can be even worse in the sense that it is a private deal that preserves the validity, the technical validity, of a property right that is actually invalid. And I just throw this out because I think it is the kind of thing that, if the antitrust authorities want to really more deeply scrutinize the patent system, it is the kind of thing that they need to be looking at and they need to figure out a kind of legal hook that would allow them to get involved in deals like that. I think they are going to become tempting for patentee's, and for all I know they go on all the time now. It is just kind of a gap that I have thought about and I guess in some sense am worried about. There is a literature now that is coming out in economics on the whole business of strategically destroying your competitor's ability to patent. And it is only a short step from that literature to the proposition of, "Well, what is the value to you of preserving your patent? Why don't I just sell it to you?" And when I looked into this, I was surprised to

see that there is no existing legal theory that would say, That is wrong, you can't do that." There are some general principles that you might invoke, but no legal rule. Anyway, it is kind of worrisome -- maybe just worrisome to me, but I wanted to throw it out to you.

MR. COHEN: Let's take up enablement for a few minutes. I think I will direct this back to Rob, who will not get off so easily. From his last presentation, he framed the issue in a very interesting way, he asked the question, "How many future options should an innovator be granted?" And I think I am going to ask him to try to answer that or to give some thoughts on that, and maybe any of our panelists might want to comment on how we should deal with settings where it is difficult to tell early on just how much has actually been enabled.

PROFESSOR MERGES: Okay. Let me set the context here first. When an inventor wants to get a patent property right, there are two major constraints on how broad it can be. There is the prior art, and that is what we have been talking about, and then there is the enablement doctrine which says, "Even apart from the prior art, or not specifically with reference to any particular piece of prior art, how significant is the contribution you have made? How many embodiments have you really taught us are viable based on the work you

have done building your prototype or in the lab?" So the idea is, when you file for a patent, usually you have something that is kind of a working model. And enablement says, "How far beyond the working model can your property right go?" And when I am teaching this to my students, I always talk about expansion points. How can you change this feature or that feature, the materials, as many perimeters of the product or object as you can to broaden the property right? The legal test is that you can expand it all the way until someone who tries to build your product based on your patent specification. It would have to engage in undue experimentation. As long as they do not have to engage in undue experimentation, even though you have not specifically taught how to build something, you have enabled it. Okay? So the law permits a fairly broad range of expansion points in an invention, limited only by this undue experimentation. And again, this is apart from the prior art restriction on your scope. This is just the enablement point. Having said that, there is really a trade-off involved in enablement and the courts have been somewhat cognizant of it. On the one hand, you want to award somebody, again, to invoke this "but for" notion; there are a lot of inventions that are going to follow on that you may be in some sense the cause of.

Now you cannot go too far because there are many of those future inventions that, although you helped cause it, will contribute so much value on their own that you do not want to cover it with a property right. And so we have looked at this balance in the law of saying, "How much have you taught us compared to what we knew before?" In a rough sense, "How many of the downstream things that you cause should you get compensated for, should you get a piece of, basically?" And the way the legal test works is it is pretty rough and ready. But here is an area where we really do have different patent standards for different industries because, in the so-called predictable arts, you typically get a broader scope of coverage because mechanical things are predictable. In the so-called unpredictable arts, you get a smaller scope. And you can translate this roughly into sort of a cost function and say, "Where it is more costly to build on old inventions, we are going to restrict the property right. And where it is less costly because it is more predictable, we will give a broader right." Okay? And by the way, if you take that Article 27 argument too far, and this is a perfect example, many features of our system do not make sense, and I think it is pretty clear that that Article 27 principle, just like the principle of equality in Constitutional law, cannot be taken to

some kind of logical extreme. There are all kinds of industry variations which flow out of the nature of the technology in the industry. So anyway, this is the well-understood model that explains, you know, what enablement is all about. But I just want to point one thing out which is, on the flip side of that, there is another consideration and that is that when somebody has built a prototype and has developed something in the lab, if the law of enablement requires them to do a lot more lab work in order to get a broad claim, that may actually not be pushing them in the direction that we want to, which is to say once they have established this thing as workable, it might be better for us if they went on to the next big thing instead of filling in the gaps so that they would be meeting the legal test to get a broad claim. In other words, if the extra expenditure of dotting your 'i's and crossing your 't's that is required by a rigorous enablement standard is not worth it -- if that is not the next best use to their money -- then enablement is not working right. So that is kind of the flip side. Having said that, I think enablement is a body of law that works pretty well. I think the enablement test as applied in the patent office, although it never set out to consciously capture important economic variables, I think when you look at it in the big picture, it works pretty

well. And the example of predictable vs. unpredictable arts is a good one. Nobody said, "Gee, what kind of invention do we want to stimulate?" Nobody read the *American Economic Review* when they came up with the test of enablement. But in a rough and ready sense, it achieves, I think, the right sort of balance. It is also the kind of thing that I think inherently is going to vary industry by industry because of the nature of the legal test. And it is an example of what you might think of as sort of the common-law flavor of the patent system. And here is a plug for the one-size-fits-all system. Inside of a one-size-fits-all system, there is a lot of room for law-making and variability. When you try to codify it and make it explicit, if we were to try to get Section 112 expanded to codify predictable and unpredictable, the lobbyists would come forth and Justin's former nightmare world would come to be, and it would become a huge morass. And this is an argument in favor of leaving some things over there in the vague, general standard, common-law world. So I have answered your question with a very long winded answer and I am sorry, but it is complicated.

MR. COHEN: We think we heard early on from one of our speakers in Washington that there is a presumption of enablement in the PTO and that sometimes evidence that

something does not work may be hard to find since failures do not necessarily get published. We heard that there are presumptions on various other factors which tend to put at least a burden of establishing a prima facie case on the examiner. I know there are some economic literature on burdens of proof suggesting sometimes who should get their burdens. Does anybody have any comments on the presumptions that prevail without our system? It's not triggering any thoughts. What I am getting at is the possibility that sometimes you want to try to fashion your presumptions in a way that the burden is on the party with greatest access to the necessary knowledge. Does that trigger anything? Joe?

PROFESSOR FARRELL: Well, I think that is right and it is all part of evaluating that system as a whole, remember. So if you think about a system where the PTO applies a certain standard and then things can go to licensing negotiations and then things can go to the court system, where in that process does the information come? I think that is a good framework to think of it in. I think you are right about giving the burden of proof often to the person either who has the information or has the best ability or the most incentive to uncover it. More specific than that, I do not think I could go.

MR. COHEN: Okay. We are pretty much at the end of our scheduled time. I think I would like to get in just a couple more questions. Oh, John, go ahead.

MR. LOVE: As I mentioned earlier, the way the law is written now, the initial burden is on the Patent Office to come up with a rejection that is supportable under the statute. Then the burden would shift, if it is a prima facie case, the burden would shift to the applicant, then, to overcome that rejection.

MR. COHEN: Okay, just my two concluding questions. One of our panelists here in Berkeley, and one in Washington also, threw out the suggestion that one way the patent law might be improved would be to take greater account of experimental use or fair use. Does anybody see any room for developing that doctrine or any benefit from using that, or harmful consequences from that, approach? Any reactions? This is sort of the John Barton thinking.

PROFESSOR MERGES: A quick reaction. There is a pretty fair case to be made for it from an economic point of view if it is framed right, and that is a complicated issue. It is probably a good example of an issue that is best resolved if at all by the Supreme Court. That is to say, every time we try to codify fair use in patent law or experimental use in patent law, it

becomes a lobbying nightmare and we get legislative deadlock. And I think that is always going to happen in that area because there is too many down sides for too many companies. And killing legislation is always a safe thing to do if it might hurt you, and it is an easy thing to do because that is what our system is designed to do. So I think it makes some sense, but the best place to make that pitch might be at the Supreme Court because I just do not know if Congress is ever going to codify anything that is a robust experimental use exemption. I would not bet on it.

MR. COHEN: Joe.

PROFESSOR FARRELL: Well, I think this may be an instance where it is useful to go away from the abstract nouns and talk in verbs. What is it that we want people to be able to do that they cannot do in the current state of the law? I am going to guess that what you have in mind is people with no contractual nexus with the patent holder ought to be able to experiment because, that way, promising lines of development might come up and they can then contract for the patent holder in some way more smoothly or more efficiently than they could have done when they were first just thinking about toying with the idea. That then really turns it into a statement about when is contracting most friction-free

and I think that would probably be a good way to assess that question. I do not know what the answer would be.

MR. COHEN: A final thing I would like to explore, and it sort of builds on the idea of looking at the system as a whole, is the issue of uncertainty. There could be uncertainty at the level of whether patents or patent applications exist. There could be uncertainty at the level of determining early on the likelihood of validity or of infringement. And I am wondering if there are any aspects of the system that any of you could spot which contribute to or help with a better management of an uncertainty. John?

MR. LOVE: Yes, I guess what comes to mind, of course, is the 18 month publication part of the IPA, which is to be a response to the submarine problems of patents. And I believe our statistics show that roughly 90 percent of all pending applications are in fact being published under the 18 months so that very few people opt out of publication. So that certainly has gone a long way, at least allowing the decision makers and the corporations to give them an idea of what patent applications are pending and give an indication of where the technology is going also. And there should be some kind of a guide as to where to invest resources in your R&D.

MR. COHEN: Other issues within the system that might bear on the discussion and could be the operation of the Doctrine of Equivalents -- the first to invent vs. first to file? Anybody have any thoughts on how that might tie into uncertainty?

PROFESSOR MERGES: Quick one. I think one of the things in favor of the Doctrine of Equivalents as a way to adjust patent scope is that it comes later in time. I mean, I think everybody agrees that the idea that an examiner would sit there and try to predict what the economic impact of each claim in a patent application is, that is ridiculous. The nice thing about the Doctrine of Equivalents is, when it comes time to apply it, after the patent issues, after the product is commercialized, after somebody sees that it is worthwhile to infringe, and after we have had some time to develop the record litigation, that one of the things in favor is it comes later in time where the courts have less uncertainty about the development of this technology. As a model of tinkering with the property right as a model of when to apply discretion, we could do worse than look at the Doctrine of Equivalents.

MR. COHEN: Justin.

PROFESSOR HUGHES: I was just going to echo that and say when we talk about uncertainty, it just

strikes me intuitively as apples and oranges, differences between uncertainty relevant to the after-the-fact grant of rights and the scope of the rights vs. uncertainty issues which affect the decisions to invest the incentive structure for investment ex ante as to someday getting rights. So your first-to-invent, first-to-file issue is the ex ante incentive structure uncertainty, whereas the doctrine of equivalents is the rights uncertainty. And it just strikes me as -- they are very different problems. I do not have any sorted out all how to approach them, but they are different.

MR. COHEN: Okay, we have had a fairly compartmentalized discussion. Before we end, if anybody has anything that they were not able to get in at the time that they wanted to and they want to get on the record? It looks like we are set. I want to thank all of you. I thought it was a very fruitful panel.

(Whereupon, a brief recess was taken.)

AFTERNOON SESSION

MS. DeSANTI: Okay, thank you very much. I think we'll go ahead and get started. One of the things that I wanted to say are some thank-yous that need to be said.

I am Susan DeSanti, I'm Deputy General Counsel for Policy Studies at the Federal Trade Commission, and we're about to open our last session in a week of sessions on business and economic perspectives on competition and intellectual property policy.

None of this would have been possible without the help of lots and lots of people, so let me put these thank-yous on the record. First of all, to our many Berkeley hosts, Joe Farrell, head of the Competition Policy Center at Berkeley; Carl Shapiro, director of the Institute of Business and Economic Research; and Peter Menell, head of the Berkeley Law & Technology Center. We very much appreciate all of their logistical help. We really couldn't ask for anything more in terms of making this all feasible, and not to mention the many substantive contributions that come from having an event like this in the thoughtfulness capital of the world, Berkeley.

Rich Gilbert also has been an extremely gracious host for various events this week, and none of

this would have been possible without Bob Barde, who has been amazingly tolerant of our invading his office on multiple occasions and has always come through whenever we've needed anything.

I also very much want to thank Mike who is right now doing his job, Mike and the other audio-visual guys who have helped us put all the presentations up and made things run smoothly on very easy basis. Our colleagues at DOJ, Carolyn Galbreath, Frances Marshall, K. B. Leich, Sue Majewski and Pam Cole have been around to help us out and to ask interesting questions and keep us all in a learning frame of mind, and so have our colleagues from the PTO, Ray Chen, John Love and Bridget Quinn who have contributed to these sessions.

From the Federal Trade Commission I need to thank Commissioners Leary and Thompson, who joined us this week; Bill Kovacic, General Counsel of the FTC, has been amazingly supportive and this never would have happened without his support; and finally, my staff, Bill Cohen, Michael Wroblewski, Hillary Greene, Mike Barnett, to my right, and two people who haven't been able to be here this week, Robin Moore and Matthew Bye. All of them have pitched in and put together astoundingly brilliant panels, and one of which we have this afternoon.

I thank all of you for coming. And my final

thanks goes to Professor Sherman Shapiro, who has been our constant and congenial companion this week and a delight to meet and get to know.

So with that, we will now go into our final panel, which is Business Perspectives on Competition and Intellectual Property Policy for Hardware and Semiconductors. What we plan to do here, let me give you a brief outline, I'll introduce each person, going around and asking each one to give us some sense of their business and perspective that they bring to the table, their business perspectives. Then I will ask Professor Hall, I'll introduce her and then ask her for some observations which she's learned in recent research, and we'll move into presentations and then we will move into the discussion format, and we'll take a break sometime between 2:30 and 2:45.

So with that, let me start with Fred Telecky, over on my right, who is the Senior Vice President and General Patent Counsel for Texas Instruments, Incorporated.

Fred.

MR. TELECKY: Thank you. Last time I --

MS. DeSANTI: Could you -- I would -- I should ask everyone to speak directly into the microphones. Thank you.

MR. TELECKY: Yes. Texas Instruments is a semiconductor company, which means we make integrated circuits, we service the wireless and communications industries and we're proud of our digital signal processors, our analog kinds of chips, and our mixed-signal chips.

And last time I looked, I didn't look today, we're about an $8 billion company. That's been going up and down, mostly down this last year or so. But we've done a lot of patent licensing in the past, probably, oh, starting around 1986, we sued something like 10 mostly Japanese companies, if you'll recall. The Japanese were pretty much taking over the semiconductor world back then in ‘86 and we sued a number of them in the ITC and various district courts, and included some Korean companies, and we won there and that started our patent licensing program off.

And our objective at that time was to get what we considered to be a fair return on our R&D investment. And since then we've kept up patent licensing for -- with the same objective.

MS. DeSANTI: Thank you.

Next is Joel Poppen. Joel is Director of Patent Litigation and Licensing at Micron Technology, Inc., in Boise, Idaho. Before joining Micron, Mr. Poppen

practiced at the law firm of Brown & Bain in Phoenix, Arizona, focusing on technology litigation and related counselling.

Joel.

MR. POPPEN: Micron's a memory company. We're headquartered in Boise, Idaho. We do DRAM, SRAM, flash and other specialty memories. We've moved up chart in terms of our patent production and very proud of our innovative process. We now have fabs and facilities around the world, so we're a global player, but the only US maker of memory.

MS. DeSANTI: Thank you.

Next we have Julie Mar-Spinola. She is Chief Litigation and Intellectual Property Counsel for Atmel Corporation. Before joining Atmel, Ms. Mar-Spinola was Special Counsel at the law firm of Heller, Ehrman, White & McAuliffe in Palo Alto, specializing in patent litigation, licensing and counselling and particularly in the computer and semiconductor arts. She has also taught patent law as an adjunct professor at Santa Clara University School of Law.

Julie, if you could just say a little bit about your company, we would appreciate that.

MS. MAR-SPINOLA: Sure. Good afternoon.

Atmel Corporation is headquartered here in San

Jose, California, but it is a global company. We manufacture nonvolatile memory devices, wireless products and a variety of blue-tooth devices, and we have foundries throughout Europe and in the United States, in particular Colorado Springs, and design centers throughout the United States and the world.

Atmel has a small patent portfolio compared to some of the representatives here, and we're one of the few companies, I think, that doesn't go out and make our portfolio a revenue-maker. So I'm here to provide input from that perspective.

MS. DeSANTI: Thank you.

Next we have Steve Fox. He is the Associate General Counsel and Director of Intellectual Property at Hewlett-Packard Company. He's also past President of the Association of Corporate Patent Counsel, a board member and executive committee member of the Intellectual Property Owners Association and a board member of the National Inventors Hall of Fame Foundation and he has also published widely in the area of intellectual property.

Mr. Fox.

MR. FOX: Sounds like you've got it all in there.

HP started about 63 years ago in a garage. At

that time it was primarily a test-and-measure company; we spun off that piece of the business in 1999 to Agilent, and today what we do is enterprise computing, printing and imaging, information technology services and infrastructure solutions.

Just recently we announced that last year we filed on a worldwide basis 5000 patent applications, so we are a big customer of the patent offices around the world.

MS. DeSANTI: Thank you very much.

Next is Desi Rhoden. He's President and Chief Executive Officer of Advanced Memory International, a not-for-profit corporation focused on the coordination and promotion of standard memory technologies and the infrastructure required by the memory industry.

Mr. Rhoden.

MR. RHODEN: Thank you. Advanced Memory International was created to facilitate, negotiate, mediate, whatever is required, all of the people that are involved in memory, DRAM and whatever else, primarily DRAM in recent years, and it requires the facilitation and coordination of an awful lot of companies, and, of course, there's an awful lot of IP involved in all of that, and that's why I'm here. Thank you.

MS. DeSANTI: Thank you.

Next we have Robert Barr. He is Vice-President for Intellectual Property and Worldwide Patent Counsel for Cisco Systems in San Jose, California. In fact, he started Cisco's patent program in 1994 and has since built a portfolio of over 700 issued patents and over 2000 pending patents. He has degrees in electrical engineering and political science from MIT and a JD from my own alma mater, Boston University School of Law.

MR. BARR: Thank you. Cisco makes networking equipment. We started in 1984 making equipment, routers, to connect the many different types of networks that existed at colleges and businesses then. We've expanded since that time into enterprise levels, switching and networking products and beyond data into voice and video. We now make telephones. Thank you.

MS. DeSANTI: Thank you.

Next we have Peter Detkin. He is Vice-President for Legal and Government Affairs and Assistant General Counsel of Intel, where he oversees Intel's patent practice and competition policy departments, among other things. Before joining Intel, Peter was a partner at the law firm of Wilson, Sonsini, Goodrich & Rosati in Palo Alto.

MR. DETKIN: Thank you, Susan. Intel is the world's largest semiconductor company with between 25 and

30 billion dollars in revenue. We were founded by a gentleman who is the co-inventor of the integrated circuit which, of course, is the sine qua non of all of Silicon Valley. Since that time, Intel engineers have invented and been responsible for such important inventions as the microprocessor, the DRAM and the EPROM, so as you can imagine, throughout Intel's history, intellectual property and patents in particular have always been very important to the company.

MS. DeSANTI: Thank you.

And finally, we are lucky enough to have Professor Bronwyn Hall who has agreed to participate twice with us this week. She is, of course, a Professor of Economics at the University of California, Berkeley, and a Research Associate of the National Bureau of Economic Research and the Institute for Fiscal Studies in London.

We've asked her to give us some brief synopsis of her recent research in this field to help us set the stage for the discussion.

Professor Hall.

MS. HALL: Thank you. I should explain that one of the reasons we're operating in the order we are is that I teach at this institution, and in particular I teach a hundred undergraduates between 2:00 and 3:30 on

Thursday, so I'm going to have to leave, which is too bad, because I'd like to hear all the other presentations. But hopefully they will turn up on slides somewhere sometime.

One of the things that Susan didn't mention because I probably didn't put it in the bio is that I have a small career as a software entrepreneur, too. I have a very small niche product, a software firm, which I've had for the last -- product's been in existence for about 30 years now, has been evolving, which means that I have actually been on the fringes of the software industry for a long time and watched it evolve.

I, of course, have been a big hardware user, but not a producer. Actually the software industry in any case evolved from the copyright towards patent.

Now what Susan asked me to do, I think, will make sense for some people here, but for the speakers they're going to be familiar with this story, I think. The research that I'm going to want to describe just hopefully in three minutes is research that I did jointly with a former student from this institution, from the Haas school, Rosemarie Ziadonis, who is now an assistant professor at the Wharton school, and the research was prompted by two observations. We started it about three years ago.

It was prompted by observing that the semiconductor industry had a patenting rate per R&D dollar which doubled over about 10 years. In other words, the patenting rate had gone up enormously between 1985 and 1995. That was at the same time that we had evidence from a survey conducted by another person who's testified at these hearings, Wes Cohen, at Carnegie-Mellon, and his co-workers, Richard Nelson and, I think, John Walsh was involved, and they had a survey which, among other things, reported that the semiconductor industry R&D executives were saying that patents were not important for securing the returns to research and development. Lead time was much more important, and all the other things that we know are important, learning curve and so forth.

And this had not changed between the survey that they conducted, that Wes conducted with Rick Levin and various other people, in 1984, the survey that they conducted in the mid-'90s. And this puzzled us. And so we went out and we talked, typically to either the general patent counsel in the case of a large firm or the CEO in the case of a small firm, to a small sample of firms in the semiconductor industry, most of them in Silicon Valley; not all, but most of them, because we're here and it was easier to go down there to talk to

people.

And the interesting thing was that even with a small sample we got the same story from everybody, so it convinced us that we didn't need to talk to 50 people; talking to a few people was just as good. The story, the interpretation, one's feelings about it may vary depending on which side of the story you're on, but the sense of the story was the same, which was that firms were increasing their patenting rates because they felt threatened by the potential of being sued because they were using a piece of technology that was patented by another firm and because they were in a position where it was very costly for them to shut down a fabrication plant even for a short time. I can't give you figures now, but I'm sure people around this table know what those figures are. It's an extremely costly thing to build a fabrication plant and so you can imagine that not being able to use it or not being able to use part of it for a period of time is very costly to any firm that's operating such a plant.

And they were extremely concerned by two demonstration effects. The first one was the one that Fred just mentioned, which was that they observed Texas Instruments's strategy of exploiting its, and earning revenue from its, patent portfolio, and they were very

concerned because Texas Instruments naturally holds a number of good patents in this area. So they were worried that they might get a phone call and not be able to negotiate a cross-license to use the Texas Instruments technology unless they had patents themselves with which they could engage in some kind of barter activity.

And the second demonstration effect, which I think in some ways was the one that really caught their attention, was the Kodak-Polaroid case. Even though that wasn't in their industry, they saw the injunction and the shutdown of the business, of Kodak's instant camera business, and that really scared them, because that was much more expensive than just having to pay past royalties.

They, more than one of them, used a term which I gather has been used here in these hearings already by the software people, mutually assured destruction. Basically we pile up a lot of patents because the other guy has a lot of patents and that, when we, if we, do get threatened, we can engage in a cross-licensing negotiation.

What I'm doing is essentially telling you economic history, I'm telling you what happened to the industry in the last 15 years. Your interpretation of whether this is good or bad will depend a lot on where

you stand. And I think I'm not going to take a position here, other than to point out that what it tells you is that the traditional economic use of patents, which I tried to sort of hint at on Tuesday and many other speakers did, too, is probably not the salient reason why people are applying for patents in this industry now.

It's protecting their own research. It's a defensive purpose rather than an offensive purpose, is another way to say it, okay. But I'm looking forward to hearing what other people have to say about this, because I --

MS. DeSANTI: Thank you --

MS. HALL: -- have different views.

MS. DeSANTI: Well, we always hope for different views. Makes things very lively.

All right. We would like to start with our presentations now, and Peter Detkin, I'll ask you to start us off, please.

MR. DETKIN: Thank you, Susan. Actually, this will be an interesting segue to what Professor Hall was just saying.

I was very honored when the FTC called and asked me to testify here. Susan at least started by saying it was because of my almost 20 years of experience all of which was devoted to counselling semiconductors

companies both large and small, starting with small startups, and now Intel, a very large company.

But then I found the real reason was because she said you have 10 minutes to cover the entire semiconductor patent landscape and I'm noted as someone that can talk really fast. So I'm going to do as much as I can, but this really will be a survey, which is why I call it a semiconductor patent survey, and I'm from New York, I had coffee, let's see how far we go.

So I mentioned Intel's history when I first did the introductory remarks. Intel today has over 80,000 employees with facilities around the world. We spend several billion dollars, that's billion with a B, in research and development each year. So with that as a background, we have all these employees out there and they're all inventing at a furious rate. The question naturally comes up, what should Intel be patenting.

Very simplified, here's some of the criteria we look at. Most companies will look at the first three and stop: Is it patentable? Is it something we're doing? And is this significant improvement? That's great if you're going to sue yourself, but at the end of the day the whole reason for patents is to assert them against others; otherwise, you're just spending thousands of dollars on a very pretty piece of paper that the

engineers will like but it won't do the company any good and shareholders won't be particularly happy.

So bullets four and five there are very important. Is this a patent that's easily designed around? How detectable is it? Process patent, that is, the process for making a semiconductor for those of you who know, it's an enormously complex task involving hundreds of thousands of steps and it's very hard to tell from the final product how that product was made. So a process patent is of limited value. Some of them are enormously valuable. One of Intel's most valuable patents, it's expired, was one owned by Gordon Moore on a method for manufacturing semiconductors by melting glass and it was probably our single most valuable patent for a long time. But we have a whole bunch of patents that today are useless because you simply could not tell, I couldn't tell if TI were using this process if my life depended on it.

You also have to look at whether I can police this. And finally, it takes patents two and a half years to get through the Patent Office, for some of the more complex ones, and design wins start early on in the process; maybe the whole thing will be obsolete by the time the patent issues.

So after you go through these criteria, at the

end of the day, we still consider the successful disposition. We may choose not to patent; we'll maintain it as a trade secret.

How many patents is enough? Well, the answer is 15, because I daresay that even an extraordinarily active licensing program, you know, it still doesn't cite more than 15 of their patents in either licensing or litigation in any one year. The problem is you have no idea which 15 are going to be the most important ones five years from now. That's why I say that omniscience is desired, but I've not been blessed with it; I don't know of any who has been. So you have to try and do your best to figure out which are going to be the most valuable patents, but at the end of the day you end up filing on -- you heard the number from Mr. Fox -- what was it, 5000 this year around the world. It's a constant balancing of where the products are going to be made, who's going to be making them, who's going to be selling them.

For example, there's no reason for me to file, again, a process patent in, for example, Italy, where there are very few fabs. So if I have competitors who have fabs, that's a manufacturing facility for a semiconductor, those tend to be more in certain parts of Europe or in Asia, that's where I'm going to focus my

process filings. However, my chip sets or my processors or the DSP chips that TI -- DSP patents that TI files, will be focused on, I imagine, where their competitors are.

Just some numbers, Intel has -- these are as of the end of 2001 -- we had approximately 5500 patents, that's US, in our portfolio. This will surprise a lot of people but those billions of dollars in R&D we spend are not just semiconductors -- surprise -- not just processors, all sorts of technology. We have, in fact, I think, three times as many operating system patents as, for example, Microsoft. We have a thousand foreign patents and we issued about a thousand in ‘01.

Professor Hall mentioned the patent thicket. Here's putting some numbers to it. You can see the ramp in semiconductors that took off about in ‘85 which is not coincidentally when TI went on its licensing kick, and you can see how compares to aerospace and drugs. Putting some more numbers to it, we've done some analysis and a lot of this, I believe, can be found in some of Carl Shapiro's recent writings, you will find that there are more than 90,000 patents generally related to microprocessors held by more than 10,000 parties. When you consider that Intel is really a semiconductor company and we have a lot of system revenue as well, if you look,

up close to a half a million patents, these are active patents, by the way, held by more than 40,000 parties. And the fact is that design houses, that's companies that do nothing but design technology and patent, are proliferating. The cost of entry into the semiconductor business is very different today than it used to be. Why? Because you don't have to build your own fab.

There are a lot of fabs out there. These are a foundry, they do foundry work, companies like TSMC and UMC who will take your design. 20 people in a garage can come up with a really cool design, go to TSMC, a company in Taiwan, and manufacture and sell this product. They don't have to invest in fab, they don't have to invest in process technology. Will they get the latest cutting-edge technology? Not necessarily. Do they need it? No.

So they can really get into the semiconductor business and get patents for a fairly low cost of entry.

What's the conclusions from these numbers? There's an unavoidable overlap of IP. There's only a certain amount of ways that you can connect transistors together in new, unique and nonobvious ways, and people are tripping over each other's patents right and left.

We'll get back to that in a second.

But then the question is, okay, you got all these patents, what are you going to do with them? Well,

you have three choices: license, litigate or do nothing, hang them on your walls. Doing nothing is equivalent to royalty for your cross-license, but it might be strategically the right thing to do. Professor Hall mentioned mutually assured destruction. Well, again, I'm here to testify that those exist in our industry. It's sometimes it's the right thing to do, it's not always the right thing to do, but at the end of the day you only have these three choices.

When to license also comes down to three basic considerations. This is actually very simplified, but again, I have 10 minutes and even at my speed it's not that much. But at the end of the day for licensing you say, "What have they got on us, what do we have on them, and who cares?" Well, one thing that you have to consider as importantly as civil law is Moore's Law, which basically says that stuff gets integrated, because the amount of work that any one semiconductor device will do will double over the course of 18 to 24 months. So a classic example is a so-called chip set. A chip set does a lot of functions. That's what connects the processor in your system to the rest of the system, the memory, the keyboard, and the monitor, etc., and it used to be that a chip set where all those functions were carried out by hundreds of discrete devices, you had a lot of devices

each of which carried out individual functions. Well, as Moore's Law advanced, as the semiconductor industry advanced, that got consolidated onto, first, four chips, then three chips and now two chips.

And you have to think about, therefore, what patents do I care about, not only because of the products I'm making today, but also the products I'm going to be making tomorrow. So civil law's important. Moore's Law, as with everything else in our industry, is even more important. What that really means is that if you think you're tripping over people's patents today, just wait. You're going to be tripping on a lot more, so you end up with what is so-called a patent thicket, a term I've licensed to Carl Shapiro that you'd have to pay me for. But it really comes down to licensing, comes down to, in a very simplified manner like everything else in business, a two-by-two matrix.

On the one axis you have how many relevant patents there are; on the other axis is what kind of revenue is there. If a company has a bunch of relevant patents and a bunch of revenue, at the end of the day they are considered a contributor and we're going to license them -- you know, the terms and what's the scope of the license, what the balancing payment will be -- this isn't always the case, but the end of the day, lot

of relevant patents, lot of revenue, we're both contributors, there'll be a license.

At the other end of the scale, no relevant patents, no revenue, it's a don't-care. I'm not going to pay any attention to those people. If you have not many patents but a lot of revenue, well, guess what, you're a target. That's when TI's going to sit up and take notice and say, "Hey, I got stuff on them, they don't have anything on me, I'm going to pay attention."

Then the trouble comes when you have a lot of relevant patents, not much revenue. Those are what are either called sometimes extortionists, although I've been sued for libel from calling some people that, gold-diggers, or my new favorite word is trolls.

Talking about that in a second, what a troll is, according to Norwegian myth, is someone who lived under a bridge they didn't build, demanding money from anybody who passed by. So I now have a bunch of trolls on my desk.

So conventional wisdom is that big companies will license each other to the detriment of new entrants. But you have to remember, as alleged up here, there's an asymmetry of risk. You only need a few patents to put a large amount of revenue at risk. A startup who's been working on technology for a long time will likely have

some good patents. They've got a bunch of smart engineers working in the lab and you know what, they'd be happy to give five percent of their revenue to IBM to pay for IBM's patent portfolio in exchange for five percent of IBM's revenue. That's a happy trade as far as they're concerned, they don't need that many patents to attack IBM's revenue.

So as a result what you find is that large companies -- this is not always the case and I'm sure Fred can argue with me on this -- but at the end of the day they tend to use their portfolio more to generate revenue as opposed to exclude competition, which is the kind of romantic notion of patents, and that's the example that we see with TI; IBM and Lucent are the same way.

So let's talk about trolls for a second. There's a lot of IP out there and there're a lot of entities that exist for the sole purpose of snapping it up and asserting it. They're at the ultimate end of the scale. They have lots of relevant patents and no revenue. I cannot attack these people, I can't threaten them. Just even a small company, strategically they don't want to be shut down by Intel, so even if they are threatening more revenue than I can threaten, strategically it's a match. We could find the right

resolution.

These guys have no threat of counterclaim. It's the ultimate asymmetry of risk. They're demanding billions of dollars in damages against me, and I'm not making that up. You could look at our annual report, we disclose it there. And even better, they demand an injunction, which boggles my mind. That is not what the patent system was intended to provide, injunction for someone who is not adding anything to the public welfare.

So we strongly believe that legislative relief is required here. It's something that we are working with the SIA. I'd love to talk about it more in detail but I think my 10 minutes are up. Thank you.

MS. DeSANTI: Thank you very much, Peter, I think you did it in just under 10 minutes.

MR. DETKIN: Really?

MS. DeSANTI: Congratulations. Congratulations.

MR. DETKIN: Okay.

MS. DeSANTI: Thank you. Next we're going to hear from Bob Barr at Cisco.

MR. BARR: Thank you. The only way I can keep to 10 minutes is to read from a prepared statement, so I'm going to do that.

Cisco was founded in 1984 and went public in

1989. Between 1984 and ‘93, the first 10 years of the company, they filed only one patent. It issued in 1992. And by 1994 the company had grown to over a billion dollars in annual revenue. This growth was obviously not fuelled by patents, it was fuelled by competition and by open, nonproprietary interfaces. But in 1994 the company brought me in to start a program to obtain more patents. Why? Well, you already know that -- for defensive purposes, to have something to offer in cross-licenses with older companies who have large patent portfolios and use them to obtain revenue and design freedom through licensing.

We filed six patents in 1994. We were proud of that. We increased each year toward the point where we're now filing over 750 patents a year. We've entered into several cross-licenses. We've been involved in several expensive patent lawsuits. I'm going to discuss the relationship between patents and innovation at Cisco.

We think we're an innovative company, but I want to define innovation the way we do. Our chief development officer, Mario Mazzola, and I can't do the accent so I'll just do it, defines innovation as follows: "A more efficient and creative way of providing customers with products and technology that deliver new levels of functionality and services that were previously

unobtainable. Innovation is more than just a new idea. It is about taking a new idea and developing it into customer value and positive business impact."

We've done this. We've brought products to market that help create the internet as it exists today, and we've helped change the way people communicate.

When I said we do phones I meant in addition to everything else; we're not down to phones yet. But they're neat, they're on, they're in the war room in the *West Wing* -- that's a Cisco phone.

My observation is that patents have not been a positive force in stimulating innovation at Cisco. Competition has been the motivator; bringing new products to market in a timely manner is critical. Everything we've done to create new products would have been done even if we could not obtain patents on the innovations and inventions in those products. I should know this. No one's ever asked me, "Can we patent this?" before deciding whether to invest time and resources into product development.

On the other hand, they do ask me whether anyone else has a patent on a product or feature that we're considering implementing. But despite the fact that our products are independently developed, that we don't copy from anyone, I can't clear a product or

feature and I can't do the right business thing which is determine the cost of licensing -- to go out and figure out are there patents, are we going to be able to do this, and what's it going to cost to get the right licenses in place? Why can't we do this? Well, first, there's the well-known holdup problem -- did you license that term, too?

MR. DETKIN: I can't take credit for everything.

MS. HALL: We said it first on paper.

MR. BARR: Okay, so we don't know where to attribute that.

The holdup problem, as I understand it, where patents issue after the product is in the marketplace and a design-around is very expensive, as Professor Shapiro notes, is worse in industries where a large number of patents have potentially read on a given product because the likelihood of stepping on a land mine is so great.

I would add that even early publication of patents doesn't solve the problem because of the uncertainty about the claims that will eventually issue. I'd also add that in addition to the holdup problem, the sheer number, which is what we're hearing about, the proliferation, sheer number of issued patents in our fields makes it virtually impossible to search all

potentially relevant patents, review the claims and evaluate the possibility of an infringement claim or the need for a license. And the penalty for so-called willful infringement makes this a really stupid idea to do that kind of research, because there's a penalty applied to it if you find patents that later on somebody says you infringe. You can be fined, you can be liable for triple damages.

So it makes more business sense to assume that despite the fact that we don't copy other people's products and other companies' products and despite the fact we don't derive solutions to problems from patent literature, we will be accused of patent infringement. The only practical response to this problem of unintentional and sometimes unavoidable patent infringement is to file hundreds of patents each year ourselves so that we can have something to bring to the table in cross-licensing negotiations.

That's what we've done. In other words, the only rational response to the large number of patents in our field is to contribute to it.

The time and money that we spend on patent filings, prosecution, maintenance, litigation and licensing could, in my opinion, be much better spent on product development and research leading to more

innovation. But instead we're filing hundreds of patents per year for reasons totally unrelated to promoting or protecting our own innovation, other than protecting our right to sell our products.

Now, it's not so bad. We'll benefit in the coming years from having all these patents to deter copying of our products as our industry evolves. That's why patents are so critical, in my view, in other industries, such as pharmaceuticals and medical devices, because they prevent copying. But we wouldn't need to file this many patents to deter copying. We'd need probably one or two or three for each product on the key features, and that's what I think you'll find in those industries. In industries where copying is the issue, you'll find a few patents per product, not the kind of numbers that Peter's talked about.

Instead, since our purpose is to create a portfolio for cross-licensing, we've had to stockpile patents and contribute to a backlog in the Patent Office that's reached three or four years to first office action in our areas. In an industry where healthy competition makes time to market critical and the pace of innovation is rapid and the product cycles are short, that's too long to wait for a patent. The system is in danger of destroying itself.

Moreover, stockpiling patents doesn't really solve the problem of, well, trolls and unintentional patent infringement through independent developments.

MR. DETKIN: Pay toll.

MR. BARR: A toll for a troll.

If we're accused of infringement by a patent holder who doesn't make or sell products or who sells in much smaller volume than we do, our patents don't have sufficient value to deter a lawsuit or counter the licensing fees that they're asking for. Thus, rather than rewarding innovation the patent system penalizes innovative companies that successfully bring new products to the market, and it subsidizes those companies that fail to do so.

So obtaining patents has become for many people and companies an end in itself, not to protect an investment in research and development, not to license the results of their work to people who actually want it and need it, but to generate revenue through licensing or holding up other companies that actually make and sell products without even being aware of these patents. I'm not talking about, well, individuals or companies in particular, but they try to patent things and that other people or other companies will intentionally and unintentionally infringe, then they wait for those

companies to successfully bring products to the marketplace. They place mines in the minefield.

The people and companies I'm talking about file these patents and extract license fees from successful businesses. They play this patent system like a lottery. They gamble that people will infringe these patents without ever learning anything from the patentee and without interfering with any effort by the patentee to commercially exploit their invention.

The long delays in the Patent Office work to their advantage by keeping the eventual coverage of the patents indefinite while others produce products. They benefit from the high cost of litigation by demanding -- I'm sure you're familiar with this one -- demanding license fees that just happen to be less than the cost of litigation, hoping that people will pay even if they don't infringe or if they do infringe it'll be too costly to change the product.

This certainly provides opportunities for contingency-fee litigators, for licensing companies and consulting firms who claim to help people mine their patent portfolios for patents that they didn't even know they had. It hard to see how this contributes to the progress of science and the useful arts.

And that's my point. The patent system does

not exist to protect the rights of inventors as such, doesn't really exist to protect any particular interest group, doesn't exist to protect what we call intellectual property as if it were protectable for its own sake. The patent system exists only to protect the progress of science and the useful arts. If the patent fails to do that in certain areas, the cost and negative effects of the patent monopoly can't be justified. Where the patent system enables true innovation, true progress, where it enables companies to bring new products to consumers in circumstances where they otherwise would not do it, or where the system disseminates knowledge that others need or want, then the system's working, and there's certainly examples of industries where it serves these purposes and these benefits must be preserved.

In my experience, not only at Cisco, but my prior experience representing a variety of companies, the negative effects of stockpiling patents, the consequences of interested infringement to independent development, the cost of proving infringement or invalidity through patent litigation, and the exploitation of the patent system as a revenue-generating tool in its own right have hindered true innovation and outweighed the benefits.

Now I was going to say something about standards, but I'm told there's going to be another panel

on that. I was thinking about it on the way up. The only thing I want to say is based on day-to-day experience, standards are very important to us because it's important for our equipment to interoperate with other equipment. To get your e-mail from here to there or mine to Peter, it goes through the equipment of many different manufacturers and our customers demand no less. They don't want to be locked into a proprietary solution.

But it's my observation and you can see examples, there is a crisis on the ground in the standards bodies right now between intellectual property rights and standards, and it's a serious crisis that is going to immobilize the standards process. You can look at what happened this week in the W3C attempting to find royalty-free solutions, and you can look at what's happening in other standards bodies, and I'm sure we'll get a chance to talk about that.

Thank you very much for the opportunity to make a statement.

MS. DeSANTI: Thank you. I think we will get into standards issues later in this panel.

Next we'll hear from Joel Poppen of Micron.

MR. POPPEN: I guess I need the community laptop over there from the front table.

Plenty of memory to go around but apparently

not enough processors so they have to use one machine.

MR. DETKIN: Want more processors, be happy to.

(Pause.)

MR. POPPEN: I'm going to ask Peter to yield whatever remaining time he had left to make sure that I get within 10 minutes, I think I'm going to need a few extra seconds.

Some of the stuff has already been discussed by Robert and Peter, so I'll move through it fairly quickly. It may look like this has been coordinated but I assure it hasn't, in terms of topics.

Quickly moving through just a little bit about Micron; I didn't anticipate having the chance to talk about the company in advance so I included a slide. You'll notice we have about 6600 US patents now, close to 1700 last year, and the products that we make and sell, as I mentioned before, are generally in the area of semiconductor memory.

I want to hit real quick on the semiconductor landscape from our perspective. It certainly is a capital-intensive business and I think that's been mentioned. The cost of building and equipping a new fab is generally thought to be in the range of two billion on up now. But it's important to keep in mind that it's not just a capital-intensive business, it's a people-

intensive business. Semiconductor companies are made up of lots of skilled individuals and all of those are individual inventors.

On the technology side, it's worth noting that semiconductor companies spend millions, sometimes billions every year to update and upgrade their equipment in order to stay competitive.

On the thicket side, as we mentioned, had I known that I owed a royalty on this I certainly would have chosen a different word, lots of overlapping patents and the rate at which they're growing is growing very quickly. It's worth pointing out, I think, that these are very complex products; hundreds, thousands of patents cover a single product. And that's particularly important when you look at patent infringement litigation where a single patent can be asserted against a product but knowing that there are hundreds or thousands of other patents that may cover that product. And I've mentioned a number of different areas here that potentially cover semiconductor products.

As has been mentioned before, cross-licenses are relatively commonplace within our industry, and on the opposite side of that, the lack of cross-license in the mutual destruction arrangement.

Looking at competition and patent law and

policy, this is really just a background for what I'd like to talk about. I think the objectives here are pretty obvious and we could talk about a lot of issues that we might have, but since it's real-world business issues and perspectives, I wanted to focus on the one that we see as having the biggest impact and biggest threat to our business.

And that's holdup. And I've tried to recharacterize a little bit here what Robert and Peter talked about, and Bronwyn as well, in terms of holdup. And this is sort of the definition that I am going to be using here when I talk about holdup, and that's really someone who exploits the system to hold up innovative manufacturers, those who sell and make and sell product. It's using flaws either in patent prosecution or in the litigation process to get what I would say is really inappropriate leverage as a way of getting royalties from manufacturers and sellers.

I want to cover three different categories. I think they're separate but related, and I'll explain what I mean by each of these in turn. The first is use of injunctive threat by what I'm going to refer to here as a nonpracticing entity, that is, someone who's not making or selling product pursuant to the patent.

Patent stalking and standard-setting ambush --

we'll spend just a second talking about standard-setting. Starting first with nonpracticing entity holdup, here's what I'm trying to get at. It's the idea that someone who's not practicing a patent, is not making or selling product, has this incredible lever in negotiations and in patent litigation and that is they have a threat of a permanent injunction. They use that threat very effectively, I might add, to collect grants and royalties from a manufacturing entity like Micron that's in a position of facing a threat to its business.

And the way I've stated it here, either you decide you're going to pay or potentially put your entire business at risk.

It's important to note that in this case, the nonpracticing entity is not protecting products here. They're really in the business of collecting money. Their revenue comes from a different source, it comes from collecting royalties.

Now I've listed a couple of examples that I think at least potentially fall under this category of nonpracticing entity holdup. The first one refers to a collection of engineers, along the lines that Robert was talking about, that really are sitting around dreaming up patents, knowing that in this game you can then go assert those patents against manufacturers of product and

collect lots of royalties.

Moving down, the professional patent assertion companies -- that's sort of a very formal way of saying companies that are in the business of buying patents or recovering patents from bankruptcy who then go out and assert those against manufacturers and sellers of product. In some cases, they're doing it on a contingency basis. These aren't inventors, these are people who have learned to play the game. And the rate at which companies join this profession goes up virtually daily.

The last one, patent mining, refers to companies that assert their portfolios aggressively outside of their business. So the idea here would be again that it's a revenue generation in return for their patents, as opposed to really protecting product.

Patent stalking -- what do I mean by patent stalking? This is what is exploiting flaws in the patent prosecution system, and I'm really talking about flaws here in the policy sense. I will give you that, what firms are doing, for the most part, is allowed under existing patent law, under PTO practices. The question is whether as a matter of policy, it ought to be. And the idea here is that it really is the manufacturer and the seller of product that's doing the inventing or at

least that's what the patentee is looking at. They're monitoring what the companies or industries are doing. They stretch out the prosecution process so that they can watch what's happening and secretly tailor their claims to cover it. And then after the company or the industry's fully entrenched, they've got product out there, there's a big market, that's when they spring the patents.

So there's no disclosure here until well after it's already too late.

Some examples, well, as I mentioned, a lengthy process, and here I'm referring to a very aggressive process of making sure that you always have a continuation alive so that you can amend your claims as needed and get the very tailored patent that you think you need. And in fact firms openly admit that they do this, that they reverse-engineer products that are out in the market and they modify their claims accordingly.

And that Lemelson, I think that's an example that most folks are familiar and certainly those of us at the table have seen these sorts of things.

Standard-setting ambush -- in this case it's a firm that either has, already has, IP or in the background they're pursuing IP that relates to a standard that's being worked on in the standard-setting body.

What happens is that they don't disclose that they have that IP. They wait for the standard to be adopted and then even more than that, wait for the standard to be implemented within the industry by companies and by the industry itself before they spring the fact that they have this IP.

Now because of the lock-in, that is, firms and industry having product out there have OEMs that are designing it into systems, it becomes very difficult at that point to change the standard or design around the patent, so here again you have incredible leverage because you have a patentee who's got this patent and nailed the standard and now that you're far enough down the line that it's very difficult to reverse course.

And here are a couple of litigation examples. I'm not going to talk to the merits of any of these, but throw it up for the point that it is an area that's hot. It crosses a number of standards organizations and also covers a number of different technologies.

Okay, so you identify the problem. I guess the logical question is, so what, is it harmful? Well, I would argue that it is. I think when you look at what happens in holdup, you see a dislocation of dollars. R&D investment is moving, engineering resources are moving, and where are they moving from and to? Well, they're

moving from what I would call an innovative firm that's doing design and manufacturing and selling product to a patent generation and royalty extraction firm. It's people who are moving because they want to take advantage of the game.

As I think both Robert and Peter mentioned, the problem here is that the rewards are going to the wrong people. They're not providing any benefit in the sense of patent protection, but they're getting the reward.

Royalty stacking -- I don't think we mentioned royalty stacking today, but certainly has been mentioned before. The idea is that everyone wants a piece of the pie. Well, those pieces keep adding up. They stack up on top of each other and the problem in the holdup model is as the model becomes more and more successful, there's more and more stacking of royalties on top of it.

Well, what happens with that? Well, it's got to be passed along. Eventually those holdup costs are going to be passed along to consumers, so it's through higher prices and it's certainly harmful in that respect.

And I suppose ultimately what could happen is innovative firms decide that their only out is to avoid the problem, and they move their manufacturing and sales operations offshore; although it's not a perfect solution I think it certainly does reduce your risk.

So then looking at the problem and the harmful effects, what about a solution. Well, okay, here's some 30,000-foot ideas, and you'll notice we'd call them potential solutions and I'll be the first to admit that they're not fully thought through and there's lots of room to debate and to discuss them, but we think it's at least a start.

Remember the nonpracticing entity is the one that has this incredible threat of unilateral injunction. So the idea here is you say, "Well, look, if you were in the business to collect royalties, to collect money, really you shouldn't have the lever of a permanent injunction." You're not going to be irreparably harmed if you don't get an injunction because you're in the business of money.

So if you create this presumption that says you're not entitled to permanent injunction, that helps mitigate the holdup problem. At the same time it allows balanced litigation. Now you can actually litigate the merits of a patent. You don't have this threat that you're going to get shut down in your business and so you can litigate.

At the same time, the patentee can be made whole through money damages and that still allows that patentee to prove irreparable harm under particular

circumstances. So it doesn't say you can't get an injunction, it just really puts back into the system that you've got to show you're entitled to it, that you can't be made whole by damages.

What about patent stalking? Well, the idea here is that there may not be a perfect solution but maybe there's an imperfect solution. And that is, why not require patentees to say early on what their invention is? The idea here is to jump on top of the publication requirement and say at 18 months you have to have your broadest claim.

I think this is premised on the fundamental idea that an inventor ought to know what his invention is and shouldn't have to wait to see what everybody else is doing before he describes in the claims what his invention is.

Now the thing with the publication obviously there are current exceptions that are problematic because not everyone had to publish, so you'd have to fix that problem. You might say, well, the Symbol vs. Lemelson case doesn't that fix it, the Federal Circuit acknowledging that there's this prosecution laches defense. Well, I guess my answer to that would be really what the Federal Circuit said, is that it's a potential defense. The other thing they didn't do is give a whole

lot of guidance with respect to when it's going to apply from a manufacturer's point of view, any certainty that you can rely on with respect to counselling your client.

What about publication in 20 years, then those things go in that direction. Well, as I mentioned, publication has one problem, that is, there are loopholes to publishing. The second problem with publication is that it doesn't necessarily indicate the scope of the ultimate claims. In other words, as long as you have enough support within the specification you can work those claims long after the 18-month requirement. So if you actually do go and look, you're not going to know what the claims are ultimately going to be and the specification is not really going to help you.

20-year patent term -- same problem; it may fix the long-term submarine problem, but it doesn't really help technology companies. The turnover in technology within semiconductor companies is so fast that 20 years basically doesn't mean anything. 20 years is more than enough time to have continuations pending, get tailored claims and assert against an entrenched industry while still having patent life left.

Finally to the standard-setting ambush, well, I think some of the changes I just discussed on fixing tailored claims certainly will help mitigate standard-

setting. You don't have the time to sit in standard-setting meetings to tailor your claims. You've got to have them on file in 18 months.

I think the other solution is one that's already in place -- standard-setting organizations have IP guidelines, have IP rules, and certainly they're all focused now probably more than ever on those rules and guidelines. I think this is really a place where the agencies have a strong role to play and that is in keeping a watch on abuse of that process and then aggressively litigating. And really one of the key reasons is you might say, "Well, private litigation will fix that." You can always go litigate once the patents are asserted against you.

The problem with that is the business realities in patent litigation are, because of a whole lot of complicated factors, you may have to settle and your settlement is unlikely to fix the consumer harm, and it's unlikely to fix the problem for the industry. Certainly the agencies are in a much better position to take on the consumer interest portion of this and to more effectively and efficiently resolve the issue.

Thank you very much.

MS. DeSANTI: Thank you, Joel.

Now we're going to move into the discussion --

oh, I'm sorry, Stephen, I forgot to -- Steve Fox from Hewlett-Packard.

MR. FOX: Thank you. I have an opening statement, and copies are on the table in the back if you don't have one yet. It would take longer than 10 minutes to go through it all if I read it, so what I'll do is I'll hit the high points and just review portions of it.

As I said earlier, just to define HP, we are in enterprise computing, printing and imaging, information technology services and infrastructure solutions. And it was two years ago that we rebranded the company to put the word “invent” in our logo. Any of you who have seen the HP logo will notice that.

It's also been in the last two years that we've doubled our worldwide patent application filing rate, and as I mentioned, we have, we are filing or last year filed 5000 patent applications. As I say, that's doubled in two years.

We take large risk in our investments in R&D across a broad range of complex technologies. Both the patent and the antitrust law regimes critically influence our risk-taking and our risk management policies. We seek patent protection for our inventions both to prevent rivals from free-riding on our investments and to counter or minimize exposure to other firms' blocking patents and

holdup strategies. I think you're going to hear a lot about holdup this afternoon.

The current state of the patent law system is problematic from HP's standpoint. We have witnessed in recent years a vast proliferation of patent grants by a seriously understaffed Patent & Trademark Office and an equally vast proliferation of complex litigation over patent validity and scope. The result is pervasive uncertainty about legal rights, and that uncertainty heightens risks surrounding innovation investment decisions.

It is without doubt a serious drag on the technological and scientific progress that the patent system was designed to promote. An unknown but undoubtedly significant number of invalid patents are issued, an unknown but undoubtedly significant number of patents generate lawsuits or threaten lawsuits involving overbroad claims, and litigation has become a poor means of addressing these problems. There are high stakes for plaintiffs and defendants alike in these suits.

There are, however, equally high unrepresented stakes for the public in these same suits, and we would respectfully suggest a new role for the FTC and the DOJ in filling that gap. Specifically, both agencies could look for appropriate cases in which they would

participate in an amicus capacity to represent or to present their perspectives on issues of patent law with significant competition policy implications.

Examples of issues on which the Federal Circuit could benefit from your agencies' thoughtful analysis of competitive effects include all of the following: patent claim uncertainty versus the Doctrine of Equivalents; licensee estoppel; patent misuse and when it should and should not coincide with antitrust liability; prosecution laches or late claiming; and the proper role of juries in patent cases.

Chairman Muris emphasized the fundamental consistency between intellectual property and the antitrust law in their objectives of promoting innovation and enhancing consumer welfare, and HP fully endorses that view. There have nonetheless been points of conflict between these regimes. One way in which these FTC-DOJ hearings could be helpful in this regard would be shining light on the issues of most concern, and thereafter supporting various forms of guidance from the agencies to the courts for their views in the adjudication of private suits.

The agencies' 1995 antitrust guidelines for the licensing of intellectual property were well received, particularly among those of us who remember the notorious

"nine no-nos" back in the 1970s, and there has been considerable controversy over range of issues either unaddressed or inadequately addressed. Permit me to offer some thoughts on one issue which has been the subject of some extensive private litigation, namely, antitrust attacks on unilateral refusals to license IP rights.

First there was the Kodak case. The court held that the jury in the case was justified in finding Kodak's refusal to be unlawful, exclusionary conduct based on entirely subjective evidence of anticompetitive intent. Three years later, the Federal Circuit upheld Xerox's virtually identical refusal to license its patents and copyrighted manuals to its service competitors, in affirming a district court's grant of summary judgment in Xerox's favor.

Xerox was not the last word from an appeals court in this general area. In June of last year the DC Circuit in its decision in the Microsoft case flatly rejected Microsoft's intellectual property defense of challenged provisions in its Windows licenses to OEMs. The court referred to the baseball bat analogy. HP accepts what now might be called the DC Circuit's baseball bat doctrine: IP licensors are not free to bludgeon their licensees into accepting anticompetitive

license conditions without scrutiny under the antitrust laws.

That said, however, there are disagreements over the scope and application of both of these points, and the lack of clarity on the positions of the enforcement agencies on them. One example of a highly controversial license condition now being employed in the context of software copyright licensing is a broad constraint upon licensees' assertions of present or future patent rights -- distinguish copyright and patent rights -- against the licensor or other licensees that are frequently horizontal competitors.

In HP's view, these provisions are anticompetitive insofar as it diminished future innovation incentives and innovation rivalry. We would in any event welcome meaningful agency guidance on their legality. The FTC and DOJ could usefully clarify standards in these areas in the aftermath of these hearings.

There are other subjects at the intersection of IP and antitrust law regimes. Areas of particular interest to HP include licensing practice of patent pools, and IP policies implemented in standard-setting processes.

First let me say a few words about patent

pools. The subject of both patent pools and standard-setting are going to be considered in detail, I understand, in some additional hearings on April 17th and 18th. HP will have two additional folks representing HP at those hearings. I'm just going to hit the high points now.

Patent pools have become critically important mechanisms for enabling widespread use of new technologies that require access to a multitude of patents dispersed among a multitude of parties. The DOJ's business review letters on the MPEG and the DVD pools have provided valuable guidance. The problem from our standpoint is undue rigidity on how participants in the patent pool would interpret and apply the advice in those letters with regard to the terms of package license offers. A common approach today is a one-size-fits-all license for the totality of patents within the pool. But we think applicants in these situations should be able to license the set of patents they need without being forced to take and pay for the whole package.

We are highly skeptical about claims that offering partial licenses would be "inefficient." There surely is room for choice or flexibility in license terms. In our view, the agencies would expressly encourage evolution of these patent structures in this

unambiguously procompetitive direction.

Now let me say a few words about standard-setting. HP is an active participant in a wide variety of standard-setting processes, and we constantly confront the need to consider incorporation of proprietary intellectual property, particularly patents or technology subject to patent applications and to specifications intended to become standard that will be open to all comers on a level playing field. The FTC's Dell Computer action of six years ago called attention to the manner in which anticompetitive patent holdup or patent ambush situations can arise. That action, however, opened a virtual Pandora's box of follow-on issues over how to address and minimize exposure to post-adoption opportunistic conduct by holders of patents required for a standard's use.

There is no appropriate, one-size-fits-all in this realm. All potentially affected parties have a legitimate interest in knowing before the standards decisions are made what the economic effects will be of accepting a patent into the standard. Yet when suggesting that the impact of patent licensing terms be considered, we have encountered the objection that disclosure of particular license terms would be attacked as unlawful "price-fixing." That objection, in our view,

is wholly unfounded. This is an area where agencies could constructively clarify their view of permissible and desirable disclosure practices.

Let me close with just one thought on harmonization. HP believes that your agencies could play an important role of promoting international harmonization of IP rights in the same manner that you have so persistently promoted harmonization of competition policy on a global basis. And I thank you.

MS. DeSANTI: Thank you very much.

All right, now we will move into the discussion phase. I think there is more than enough controversy and possibly red meat on the table to keep us going for the rest of the afternoon with no trouble.

The rules of the game here are simply if you want to say something, please put your name tent up on end. Then you have to promise not to use any adjectives or adverbs. We're very proud that no libel suits have ever resulted from our hearings.

So we'll start. I would like to give the others who have been listening a chance to comment and then we have some questions that we would like to get into.

Fred, would you like to start?

MR. TELECKY: Sure. There's been quite a bit

said. I guess TI doesn't have any major overall problems with the patenting system the way it exists today. I think there are a number of problem areas that can be addressed that have been brought up, such as what do you do about people who have no production of their own who have patents and are out there asserting them? You can't use your own patents as defense or trading material. But we've thought a lot about those kinds of issues, and frankly, I don't know whether we have any good ideas for addressing that without harming the entire patent system for people who do have products. And we're not sure that in every instance where there's a patentee with no product, that they haven't legitimately contributed something to the fund of human knowledge.

I think we can all think of some particularly egregious examples where patent applications were prosecuted over 40 years or so and with no apparent contribution to the art, but I'm not sure that we know how to fix that sort of thing. One can look at enablement requirements and wonder whether there's any real enablement in some of those things.

But by and large, I think we think the patenting system does prevent free-riders. Provided an innovative company does file for patents, it does give them material that they can use both protectively or in

some instances royalty generation; there are people who have contributed a relatively small amount to the industry. If you look internationally, not just in United States, you see places where companies are springing into existence all the time and they may not have the same kinds of costs associated with production of their products that some other countries do with tough environmental standards and the like.

I just had someone from an Asian country tell me recently sometimes people are envious of their quick rise to prominence as a country producing integrated circuits, but he says all you have to do is go around the country and see where there are examples of pollution and the like. So I think patents can serve to redress that kind of disparity in costs. So I think they've been valuable to us in that sense, and that's kind of how we got started back in the mid-'80s.

MS. DeSANTI: Okay. Julie.

MS. MAR-SPINOLA: Sitting here and listening to a lot of the opening statements certainly hit on a lot of the issues that I have for Atmel Corporation. Also, just as a practitioner in the patent law area, I just feel that there are all these problems that have been pointed out there. I think that we don't have problems just on one area. There is a lot of need to reconcile law,

practices and policies throughout.

For example, antitrust law does have its value and it's important to keep our competition thriving. At the same time we have to balance that with patent monopolies, and I think you can reconcile it so long as there is a moderate application of both. And from my experience and observation, I seldom see moderation. I either see one extreme or the other.

There are problems with respect to how companies are using their patent portfolios. In my view, there has been a huge trend in the last five to ten years or five to eight years, a trend to make patent portfolios a revenue maker or patent law within the legal department a profit center. TI has been very successful at that, and maybe another handful of companies, but I think TI's success, or what their plan was, was very different than how it's being applied now.

One of the problems that I see when it's negotiations, license negotiations, between companies who are practicing patents and technology is that oftentimes when a company, the licensor, prospective licensor, views their patent portfolio as a money-maker, they move it over and create a business division and they send business folks out to negotiate licenses who oftentimes have little or no patent law background.

So when you sit down with them and for Atmel I'm typically the one who's charged with doing that delightful experience, what you find is, if you want to respond in good faith and you want to respond on the merits, you're talking to folks who are business people who really don't care what the merits are. And I find what happens there is that you end up at a minimum with protracted license negotiations. In my experience it can often go up to the time that laches becomes a concern. Then you have as a last resort for these companies, having to bring suits, not because they believe that they can file this action on the merits but because they have to, otherwise they're going to be barred from bringing the suits. So I would propose that license negotiations ought to come with some patent law background.

And then you have, as has been pointed out today, the Lemelson type licensors who do not practice the law and they have nothing basically to lose except to extort money from companies. They start at the bottom and the practice has been to brag about how many licenses they've been able to have entered and therefore it must be nonobvious and you ought to pay up because everybody else is. And for companies such as Atmel and the companies that are represented here, that's not likely to happen. But we can't be funding that kind of fight for

the rest of the industry. It needs to be unified.

MS. DeSANTI: Thank you.

Okay, Desi, I'll give you a chance and then we'll move into the questions that are on our minds.

MR. RHODEN: Well, I can make it pretty easy. The opening statements by Intel, Cisco and Micron and HP line up almost exactly with everybody that I deal with in the industry. Looks to me like they all communicated, but in reality it's just like Professor Hall said it in the beginning, the message is the same. It's coming from everybody, and it's the same message.

The main issue where I sit, which I spend an awful lot of my time in standards, is the trolls, the people that are actually not contributing and yet mining the benefits from everybody that's involved in the industry. And DRAM, the threat of shutdown in a DRAM business where companies are almost exclusively operating in a single product, they can go from a multibillion-dollar company one day to basically zero the next. So that threat is catastrophic.

And DRAM itself is actually a commodity, it's basically the first manmade commodity product that's ever existed in the world. It's like pork bellies, because you see the price of it change on an hourly basis, day to day. So that's good and that's bad, it depends on where

you are on which day.

So this concept and the ability and the contribution that the DOJ and the FTC can make here, I think, are extremely important and also very timely.

Thank you.

MS. DeSANTI: Thank you.

Well, let me start by using the moderator's prerogative to lay out a few of the questions that are running through my mind and then throw it open to everybody to contribute to the discussion.

People have, and at the risk of having to pay a license fee to Peter, you know, in terms of the patent thicket, and I'm willing to pay up, Peter, one --

MR. DETKIN: It's borrowed from Carl Shapiro, but that's okay.

MR. POPPEN: It's probably prior art on Peter, by the way.

MS. DeSANTI: And Bronwyn was making a claim, too, so let me just ask this, does this come about because there are problems with the patents that have issued in terms of their validity, in terms of overbreadth, or does it come about simply because the technology is overlapping? This is a point that David Teece, who's in the audience, was making for us yesterday.

I mean, it seems to me there are different policy implications depending what the answer is. If there is a problem with the patents that are being issued, then that may have policy implications for the PTO. If it's simply that the technology is overlapping and there really isn't any way to get around it, then that may have more policy implications for competition people who are looking at standards for cross-licensing and patent pools.

And so I'm wondering if you can give me some sense what you think the proportion is of either types of problem.

Peter.

MR. DETKIN: -- that technology -- to license that from you --

MS. DeSANTI: That one you have to --

MR. DETKIN: -- see now how the royalty stacking starts --

MS. DeSANTI: -- exactly.

MR. DETKIN: It's like *The Producers*, everybody wants a percentage.

Actually I think you're looking at the wrong end of the problem. I don't think the thicket itself is the problem, as I said.

First to answer your question, where does the

thicket come from. I don't think it comes from as much Patent Office resources or invalid patents or poorly written patents. There are those out there, absolutely. That is a problem and -- I forget who it was who referred to it, I believe it was Steve Fox -- some of the uncertainties of litigation that arise from the Festo problem that is now before the Supreme Court, the doctrinal equivalent to some other issues that is buried in there, that arises out of the thicket because there are so many patents out there. That's how it causes the thicket. What causes the thicket is Moore's Law, it's the fact that a Pentium processor has tens of millions of transistors.

Someone once told me, I don't know if this is true, but there are more overpasses and underpasses in a Pentium processor, that is, stuff going underneath or over each other, than there are in the entire United States highway system. I imagine that a Micron DRAM is just equally as complicated. It may not have as many circuits or transistors, but it's also an extraordinarily complicated device, one of the most complicated devices man has ever created.

When you connect hundreds of millions of things together, it's impossible to say that it's going to be done in a way that's never been done before. That's what

creates the thicket. Just to simplify it, it's Moore's Law, not the Patent Office.

And by the way, we know how to deal with a thicket. I think that that comes down to the two by two. Contributors tend to license each other. The terms of the license is always subject to negotiation -- what's the scope? What's the balancing payment? But we tend to know how to deal with a thicket except at the corner cases. The holdup problem, the troll problem, is not so much result of the thicket, it's the problems of the gaming the system.

MS. DeSANTI: Fred.

MR. TELECKY: I think I tend to agree with that. In our view, the number, increasing number, of patents represents, at least for Texas Instruments, an increasing R&D budget. I've looked at our numbers over the last 10 years, and found that by and large the patent disclosures that we get, and we clearly can't file more than we disclose, have roughly tracked what our R&D is. If you normalize it or if you look at patents disclosed, patent ideas disclosed per R&D dollar, billion dollars of R&D, we've found that there is a pretty good correspondence. In fact, if anything, the R&D curve has slightly overtaken our disclosure rate in the last five years. So it's hard for us to see that this problem of

people filing more than their R&D dollars justify. I think, looking at what a lot of companies have done, it could be that you see an effect where people have been filing no patent applications at all, say, five, ten years ago, and then patent consciousness increases for whatever reason. And then you see people suddenly deciding or corporate decisions being made, "Yes, we need to spend the dollars to file in these areas."

MS. DeSANTI: Thank you. Joel, and then --

MR. POPPEN: I was generally going to agree. I think it is a result of the complex technology, and the complex product more so than Patent Office, and I'd point out, I guess, two things with respect to the Patent Office.

One is while, I guess, I agree that they certainly could improve, I think the bigger point is they're never going to get to the level that we get to in litigation, that they can't possibly have the resources or the budget to do what we do in litigation. It just never is going to happen.

The second point is even if patents were much better, closer, perfect, it really wouldn't solve the problems that at least I complained about. Those are in some respects independent of the quality of the patents coming out of the Patent Office and have more to do with

the way in which those patents are obtained, not as a function of art but as a function of process, and the particularities of patent litigation that allows use of those patents irrespective of how well they've been resolved in the Patent Office itself.

MS. DeSANTI: Bob.

MR. BARR: Yes, I'm not going to defend the trolls, but I want to say the thicket is the problem and the point I was trying to make, that just the sheer quantity of patents is independent of the quality of patents. Ours, in fact, happen to be all very high-quality.

As I said, we've entered this game five, six years ago in full force for the wrong reason and we're contributing to the proliferation to mutually assured destruction. It doesn't solve the problem of figuring out what's the right thing to do. How do you price a product? How do you know what licenses you have to get? There are so many patents out there, as I said, on top of the undisclosed, unpublished patents, there's just this buildup now that we contribute to that makes it impossible to make rational business judgments.

So I think the problem is quantity. I think it's partly a reaction of your normal growth of R&D budgets and overlapping technology and transistors, but

my point was some of us are doing it for the wrong reasons.

MS. DeSANTI: Stephen.

MR. FOX: First of all, after all we heard about the patent system, I'm compelled to think, you know, patent system is no Camelot, but when Mark Twain wrote *A Connecticut Yankee in King Arthur's Court*, he talked about establishing a patent system in his country, his new country. And he said the first thing he would do in his administration, on the very first day, would be to set up a patent system because, as he said, a country without a patent office and a good set of patent laws is like a crab, it can only move sideways and backways.

So we do have a patent system and it does work and I'm sure you'll hear that from a lot of folks, but addressing the thicket issue, I think we're way beyond the romantic notion that inventions are made on a breakthrough basis with a bright flash of light going off in some lab and then the patent attorney running over and writing down the invention. In these times, given what companies spend in R&D, and HP does spend $2.7 billion a year, that's what they did last year, there are lots and lots of incremental inventions.

And the concern is if you don't patent them, you're somehow going to lose position. So the engines

have been cranked up to capture all of these inventions. And the companies that do spend a lot of money in R&D get pretty good at it, and hence there are lots and lots of patents that are produced.

The other notion is that inventions can oftentimes be made simultaneously by two inventors working completely independently when the logical bases for that invention come into place. And this happens all the time all over the world on a continuing basis. Again, it's a reason why we see so much proliferation of patents and also that concern that if you are not the first to the Patent Office you are somehow going to lose position.

MS. DeSANTI: Julie.

MS. MAR-SPINOLA: I don't disagree with any of the statements here, but I do think that there is room for improvement in the Patent Office and the application of law. In particular, I think it's not a question of quality versus quantity and quantity being where there's an overlap. I think it's how patents are issued or how they're allowed to issue.

For example, we were talking about patent stalking where someone can continue to file continuations and then to wait and figure out how they're going to describe their embodiment and claim it, and that after a

company has spent all this money to bring this product to the market.

So I think there is room in the Patent Office to create some kinds of regulations that would prohibit that type of problem.

I also think what we need is to reconcile, and you may hear that word from me a lot, but I think we need to reconcile the Patent Office regulations and their procedures with how the courts, particularly the Federal Circuit Court, is creating law or interpreting those regulations, because there are huge discrepancies. In particular, the biggest one in my mind is Festo, which puts everybody's portfolio potentially on their head, because the courts have decided something that the Patent Office continues to allow an applicant to do and I think that causes problems.

MS. DeSANTI: Could you just briefly for the record describe what you mean by the Festo issue?

MS. MAR-SPINOLA: I'm going to ask others to help me on that one. The Festo decision, as I understand it, is that basically, if during patent prosecution you amend your claims, you are going to be stuck with your original claims and not the amendments. That's a simplified way of saying it. I'm going to ask anybody else to come in, but basically what happens is that where

you have had claims that were legitimately prosecuted and then you try to enforce the patent, the courts can interpret the amendments as nonbinding and you are limited to the scope of your claims.

MS. DeSANTI: And that issue is before the Supreme Court now?

MS. MAR-SPINOLA: That is.

MR. DETKIN: Okay, if I could clarify just a little --

MS. DeSANTI: Peter.

MR. DETKIN: -- just to build up what Julie was saying, the CAFC has basically said that when you amend your claims you're going to be given a very literal interpretation of the claims as they finally issue. There are ways around it but for the most part what the CAFC has said is that there'll be very little range of equivalence, so doctrinal equivalence is for the most part for an amended claim a nullity and that is something that the Supreme Court is looking into right now. There has been a furious round of briefing, amicus briefing, from a lot of people at this table, in fact.

MS. DeSANTI: Thank you. Ray?

MR. CHEN: That's right. In fact, we in the government have filed an amicus brief through the SG's office, but just getting to the whole question of patent

stalking, this is an issue that the PTO's been very familiar with for several years now, and we, more than anyone else, don't like it when someone is trying to game the patent examination process.

We've been trying to deal with submarine patents and obviously those are pretty much over as we know it, but as for the question of patent stalking, you're right, it still continues, it still exists, we see it. Percentage-wise, there are very few players that are trying to do it, and I find your proposal of possibly requiring the broadest claims to exist in the 18-month publication to be an interesting idea, because, obviously, that's one way to promote some level of certainty among competitors.

I guess an even more radical idea would be just to completely abolish continuation practice, but, of course, these are all major statutory changes we're talking about. The things that we do when we see someone that is trying to morph their application is really try to knock them out on section 112 rejections, particularly enablement and written description. We get into big fights with these players all the time over that.

We were very happy to see the Symbol Technologies case which says that there's a possibility of a defense of prosecution laches that can render a

patent unenforceable, the kind of patent where someone is basically keeping an application cooking along in the PTO until finally there are competitor products out there and then they manage to finally surface with their patent. In fact, we're trying ourselves to make those kind of rejections ourselves now, even though there's technically not a statutory basis for the PTO to do it. We're going forward with that and now we're running it up the flagpole at the Federal Circuit and see if we, ourselves, can get prosecution laches as a way to knock out an application.

But still, you're right, there is a pendency problem in this area as well as software, compared to other art areas. Those are the biggest problems, and mainly that's just due to finding the best people we can that can handle these types of arts.

MS. DeSANTI: Thank you. Desi?

MR. RHODEN: I wanted to make a general comment, and I get this from all of the companies that I work with, some 300 or so at any given time, relative to standardization, and this is not a problem that is prolific across the whole industry. In fact, probably 99 percent of the companies that are involved operate in good faith. So in a sense you can argue either way on particular issues.

The problem and the generation of everything that's going on inside the PTO right now, and if you look around the table, the presentations that were made, you find that probably 20 percent of the patent portfolio of any one of the companies here, and they're major and they've been around for a lot of years, but 20 percent of it was filed last year or granted last year. So that's pretty serious, and that happens because of the one-percent problem, and it's the holdovers and it's the trolls and it's the ones that kind of subvert the system.

And what we need to do is find a way, and that's why we're having these hearings here, to actually get at those that are actually abusing the system rather than the ones that are actually working within it, because from TI's perspective if they follow along, if you follow the rules and you operate in good faith, then everything should be okay. The problem is that we have companies that are not.

MS. DeSANTI: Fred.

MR. TELECKY: Yes. Patent stalking, I guess I'd like to present the other side of that issue, and that is the difficulty of knowing what your invention is at the time you make it or the time you file it. In a lot of instances you may think it's one thing, but in reality, once you've looked at the prior art you find in

fact that it may have shifted a bit or it's not exactly what the inventor thought it was or what the patent attorney filing it thought it was.

So while I agree that things like the 20-year rule have been good, along with other measures to prevent patents from being in Patent Office for an extraordinary period of time, we still think that you have to recognize that during prosecution you may change your mind, as you see the art and as you think about it, as to what your invention is. And I don't see anything wrong with that as long as your disclosure supports what you do with your claims, and as long as you're not running into the prior art.

MS. DeSANTI: Thank you.

All right, this may be a good time to take a 10-minute break. Why don't we all come back at five minutes before 3:00. Thank you.

(Whereupon, a brief recess was taken.)

MS. DeSANTI: Thank you very much, and I should let you know that we will end precisely at 4:00 if not before, because this room needs to be used for another function almost immediately thereafter.

I'd like to follow up on some of the discussion that we had about trolls. I think I understand what the problem is that you've described, but I'm trying to

figure out how that works within the context of the present patent system, which I don't understand to impose any obligation on a patent to actually practice the patent.

So could you help me in understanding are you asking in effect for an obligation on the patent holder to practice the patent in order to seek to enforce it? And is this an industry-specific idea because of the problems with the very, very, very complex technology?

Peter.

MR. DETKIN: The short answer, no. Drawing it out, we already treat plaintiffs differently for damage purposes. We already say that if you could prove that you would have made sales but for the infringement, then you're entitled to lost profits. If you didn't lose sales but for the infringement, then you're entitled to a reasonable royalty.

What we're saying is that the equitable analysis should be very similar. I'll pick on AMD because they're not here and because we have a patent cross-license with them, but if AMD and Intel were to have a patent fight, well, there's a situation where it's competitive, we have competitive products, and were they to prove that we infringed one of their patents, that would be one situation where we are essentially competing

against them with their own IP and injunction might be called for.

However, when you have a troll who's not practicing the patent, we don't think it's in the public interest, which is theoretically one of the factors to be considered in determining whether to issue an injunction. We don't think the public's interest is served by saying Intel should no longer make microprocessors because you are infringing the patent of someone who is not in the microprocessor business.

MS. DeSANTI: Bob.

MR. BARR: Yes. I was just going to agree on the injunction point, only that I wouldn't say that there's a duty to commercialize invention or that you can't necessarily get damages if you don't commercialize invention. But there should be some limits on injunction. There should be. There are differences in the potential damages. Then again, I'm not picking on trolls. I'm trying to try to carve out some area for either independent development or at least rational business processes to know what is out there.

MS. DeSANTI: Desi.

MR. RHODEN: What I was going to point out is that it's the unfair negotiating position that the trolls have. There's absolutely nothing that they have to give

up. There's nothing that they need that you have and so they're basically in the position where they have something perhaps that you need. Since there's no mutually assured destruction, which is what Professor Hall called it earlier, then they're put in a position that if they can shut you down, and perhaps the right way to do this is to eliminate the possibility that they can get an injunction, then the advantage is unbalanced, and this is not a good-faith kind of negotiation.

So that's what the problem is, and that's where the issue of trolls come in, is because they can come in and assert and shut your business down and you have no option against them.

MS. DeSANTI: Okay. Well, I'm a competition lawyer and although the FTC statute says unfair competition, I'm wondering what unfair means. As John F. Kennedy once observed, life is unfair; there are lots of unfair situations that the competition laws have nothing to say about, because it's competition that we're looking for.

So I'm interested in your perspectives, but the mere fact that people are in unequal bargaining positions doesn't necessarily have policy implications, so I'm looking for the plus factors as we go in along in the conversation that make the issue even more interesting.

Joel.

MR. POPPEN: I was just going add, think if you look at an injunction from the remedy point of view, it's really an equitable remedy and the idea, at least in common law, of equitable remedy for something like an injunction is you have to show irreparable harm. You can work into that backwards when you're talking about a troll or someone who's not practicing the patent, because in that case it's hard to imagine that money damages really won't solve their issues.

We're not saying these people who have a patent aren't entitled to the reward the patent gives them, it really is more of a focus on what is the reward. In most cases, if money damages takes care of the issue, that's where the inquiry stops. If they can demonstrate irreparable harm, and again I think it's hard for them to defend an argument that says there's irreparable harm without getting an injunction other than to say, "I've got to have that threat because otherwise I can't get people to pay me the kind of money that I want to collect." That, of course, only supports the position that that really is a perversion of the whole idea of the patent process.

MS. DeSANTI: Julie.

MS. MAR-SPINOLA: In my mind, the issue or the

question is more of not what a patent holder is entitled to and I don't think there should be a second-class patent holder. I think the issue is creating a level playing field, and whether that's appropriate.

You mentioned something about policy, and my best understanding of the antitrust law is that it doesn't apply to such individuals or entities that don't practice or are in business other than to acquire patents. So you don't have antitrust policy that will keep them in check. You don't have those kinds of protections, I think, that companies, corporations, are held to.

MS. DeSANTI: Now let me correct the record on that, because if in fact there is a relevant market there, and that there's a market for technology is what I think I'm hearing, then competition laws applies there as well as elsewhere.

So if you have more, or Stephen.

MR. FOX: I want to --

MS. DeSANTI: Did you have more you wanted to go into?

MS. MAR-SPINOLA: I want to think about your comment there because I think that the issue is being able to identify that relevant market, whether that's really possible to do or not. I don't disagree that

there might be a way to get there, but I think that path is very difficult to get to.

And again, it's an issue of level playing field.

MS. DeSANTI: Stephen.

MR. FOX: I think reflected in the concern about trolls and holdups is a fundamental breakdown in the contract, the constitutional contract, between the inventor who is supposed to disclose his ideas to the public in exchange for exclusivity, for a limited period of time. The concern is where did these trolls come from? Out of the blue, you know, the ambush approach. Did they really meet the contract of disclosure as envisioned by the Constitution? Does the US Patent Office today permit that kind of disclosure to be made given the backlogs, given the way some folks can game the prosecution process in the Patent Office.

I think that's one of the concerns.

MS. DeSANTI: Fred.

MR. TELECKY: Let me look at trolls a little bit differently and get at how would you define a troll. For example, if you're a legitimate company and, let's say, you've got $20 billion in sales today, but you've gotten out of a product area and got out of it five years ago. But you still have a large patent portfolio in that

area, and another company sues you for patent infringement and they happen have a patent that covers what you're selling currently, but they produce products only in that area that you got out of. Now are you a patent troll if you assert your patents against them and ask for an injunction? I think there's some hard questions there if you generalize in that area.

MS. DeSANTI: Peter.

MR. DETKIN: If I could respond to both your comment and to Fred, mostly by echoing what Steve said. I think that, Susan, you were looking at the wrong policy. We're not asking you to level the playing field in negotiations. Yes, they're unfair sometimes. Frankly it's something we were screaming long and loud in our last litigation with the FTC when it was an issue as to whether we were unfairly using our IP position against someone who didn't have as much IP.

What we are asking you, however, to do is to look at the policy underlying the constitutional contract as Steve mentioned, and whether or not the way the game is being played today is actually promoting the progress of science and the useful arts. What you had instead is the Lemelsons of the world imposing a tax on the US economy, and that is something that I would imagine the DOJ and the FTC should take a long, hard look at. I

mean, Lemelson is just the tip of the iceberg. He's the most famous one. Frankly, I think that he got more press, more air play, than he deserved, and we changed the whole patent 20-year term issue, frankly, just to deal with him. I don't know anybody else, really, who that's going to affect. At the end of the day, I don't think that affects anybody else. But I'm glad we at least solved this one problem even if it was a little late.

But, you know, we haven't even looked at the other problem and it's something that you should look at in terms of how much money he has extracted from US companies. He, meaning he and his legal team. Couldn't get anything from him, think he's been dead for five years.

Turning to Fred's comments, yes, the definition of a troll, I agree, is not an easy one. And that is why I am not at all proposing there be some hard and fast legislation -- if you are a troll, you cannot get an injunction; that is not what we're saying here.

All we are saying is that we encourage judges to consider, in considering whether or not to grant an injunction, whether the public interest would be served, how the balance of hardships will be served by giving an injunction to someone who's not practicing the patent

that's being at issue.

So using Fred's example, if you are being sued by somebody that you need to countersue so you can try to level the playing field for the negotiation and you have those certain patents that you are not currently practicing, well, if I'm a judge I'm not going to give them an injunction because they're in both fields and you're not and you're only in one. I don't know any judge is going to do that. I think it's required that the judge take that into consideration, but the proposal would not be to mandate -- sorry, Fred -- because you're not in that field you don't get your injunction.

MS. DeSANTI: I think we're going to take just a couple more comments and then moving in, move into patent pools and license, and, Mike, you had a --

MR. BARNETT: I'm curious if this could potentially be effectively considered a compulsory license at that point, or, and if not, how would we distinguish that?

MR. DETKIN: That is -- sorry?

MR. BARR: Said we won't use that term.

MR. DETKIN: No, that is the natural argument, that this devolves to compulsory licensing. But the fact is that, while the history of US policy has been anti-compulsory-licensing and I think rightly so, there have

always been exceptions, and all we were saying is that this is one area where it would be more appropriate to say that damages is sufficient remedy as opposed to injunction.

MS. DeSANTI: Joel --

MR. POPPEN: Yes, I think --

MS. DeSANTI: -- last word on these topics.

MR. POPPEN: I was going to say I think that's right, and the reason for that is, I mean, there currently is a statute, section 283, that deals with the right to an injunction, and it doesn't say in any shape or form that you're automatically entitled to an injunction if you prevail on infringement. The idea is that the analysis ought to be one of the appropriate remedy.

Compulsory licensing, I think, really refers to a different sort of format, and that is saying to a company like Intel, "You've got to go give a license to all these other companies, and that's it. Instead, what this is looking at is really doing an analysis based on equities in a particular circumstance, whether or not it's the appropriate remedy.

MS. DeSANTI: Well, let's move into more of the antitrust issues that have been raised. Steve, you raised some of these antitrust issues, and I'm interested

in the thoughts of our panelists on patent pools and cross-licensing. Leaving aside the holdup problem, are there antitrust issues? How are the intellectual property guidelines working for you? Are there observations that people have to make in this area?

Steve.

MR. FOX: I'll start off. I think in patent pools to a certain extent the antitrust laws are being used as a sword when they shouldn't be by certain patent owners who want to participate in a pool, but who will say they cannot discuss the price of the patent, the royalty charge, to be charged for the patents that they own because discussion of prices among horizontal competitors might lead to antitrust concerns of price-fixing and that kind of thing.

So for those patentees who have critical patents to be thrown into a pool, they might use them. They might hold back on their pricing, arguing they can't discuss price until it's all done. And that works against the promulgation of effective technology effectively into a pool situation. The same is true in standards to some extent.

MS. DeSANTI: Other observations? Are patent pools working as ways to overcome some of these patent thicket issues?

Desi, you're very involved with standard-setting; maybe you can take this one.

MR. RHODEN: Well, actually, within standard-setting, we don't use the concept of patent pools. But what we do use is something that's called reasonable and nondiscriminatory, and reasonable and nondiscriminatory is very specific. The courts are the ones that ultimately define what that means, but it does address the issue that you cannot exclude anyone.

And we can't really create standards in the industry without having a way of preventing exclusion. Now, then you get to what is reasonable? Well, I'm certainly not the one that can do that part. So, we don't use patent pools directly in most of what I'm involved in. They are used in some level in some places, but we find that that particular premise is the one that we use the most and it's been pretty effective. So far the courts have agreed there.

MS. DeSANTI: Bob, I have the feeling you have something to say.

MR. BARR: Good. The one thing that I like about patent pools, I'll start there, is at least in the consolidated administration and the effect that it has on limiting the stacking problem, which brings me to the reasonable, nondiscriminatory royalties and the problem

we opened up earlier of disclosure. So years ago, and maybe last year, maybe last month, the standards bodies' primary concern was just what you said -- that to have a standard we have to make sure nobody can block it. So the standards bodies did the right thing and said people ought to come forward, disclose their patents and agree to license them on reasonable, nondiscriminatory terms.

So that was, to me, you know, a solution to first problem. Second problem is now everybody knows that they can get in big trouble if they don't disclose their patents there. They need to educate their engineers, their representatives on the standards bodies. Not everybody, but people I'm working with were all trying to put together databases to disclose all our patents. Fine.

So go to the IEEE website, 802.11, for example, see how many patents have been disclosed for 802.11. This is a very forward-looking, wireless LAN standard so we can all work all the time without ever disconnecting from the network, and is very important. And you would find 30, 40, 50 patent claimants listed there under variations on the 802.11 standard, and that's just an example.

The fact that someone makes a disclosure is their attempt to do the right thing, to not ambush

anyone, and as I say we're all setting up infrastructure to do it. We disclose our patents and when we look there, we go, "Well, now what's reasonable and nondiscriminatory?" Maybe it should be looked at in the aggregate of the stacking problem, being that there are this many patent holders. So what's reasonable so that we can put out these products? All of us can put out these products. Maybe we should take into account the multiplicity of patents, the thicket that's now surrounding the standard. And once we get past the disclosure problem we're going to have to address that.

I don't know if patent pools are the right way to address that, but I'm not aware of any court that's addressed it, except I'm told in Europe it's been rejected as a defense. And so you can end up paying under this theory 120 percent of your revenue for practicing a standard.

MS. DeSANTI: Bob, could you expand on that a little bit, because I wasn't sure that I understood everything you were saying towards the end about the European system --

MR. BARR: Oh, I --

MS. DeSANTI: -- and the royalty-stacking issue.

MR. BARR: Okay, I'll back up, because I'm a

little on shaky ground on what the courts have done -- and people can help me -- and what the European decision was. I know I read it and I don't have it.

But what is a reasonable, nondiscriminatory royalty? Do you look at the individual claimant's patent? First of all, is it any different than a reasonable royalty under the statute anyway? I don't know. The issue of whether you look forward or backward has been raised in the literature about whether, you know, it's certainly a more important patent and more valuable now that it's a standard.

But assume it's disclosed and assume there are many patents on the standard, in my exaggerated example, you know, enough that at a few percent each we got over 100 percent, so do you take that into account and who takes it into account in looking at what a reasonable, nondiscriminatory royalty is? That's what I called the stacking problem that's going to get worse as people abide by their disclosure obligations a little more aggressively and, when in doubt, disclose.

But my reference to Europe was I believe that when someone raised that, it was rejected. But, and before I ask you whether I answered the question, there's one more point I was going to make about that. The real problem -- you might see this coming from me -- the real

problem is predictability in the standards bodies. The standards bodies, IEEE in particular, aggressively object to any discussion of patents and I don't really blame them. We don't want everybody talking about what claims are this and so on, but I would like to see disclosure of licensing terms when you make this disclosure of, "I'm going to license on reasonable nondiscriminatory terms." I'd like to know what they are before my people vote yes on the standard. It's legitimate, I think, to take economics into account, and even the IEEE recognizes it's legitimate to take business pricing into account in deciding and voting on a standard. And I'd like to see open disclosure of the licensing terms in advance, and then people can say, "Well, on a stacked basis we're looking at a 80 percent royalty here, so we're going to vote against it, or they can say it's reasonable.

MS. DeSANTI: Okay, we'll go to Stephen and then we'll go back to you, Desi.

MR. RHODEN: That's fine.

MR. FOX: I agree with what Robert just said. Reasonable and nondiscriminatory does work in some cases, but what's more important is a full disclosure of so-called essential patents to whatever the activity is. And that is an issue in itself, essential versus nonessential and under the umbrella of a technology, for

example, what do you really need versus what relates simply to implementation.

And you get into the issue of, does one size fit all when you have a package of patents? There is a trend currently to say that, "One size fits all, you have to take the whole package or you can't have any, it's all or none." And then folks say whatever the royalty will be will be reasonable and nondiscriminatory, but by the time you've identified what's in the package and gotten over that hurdle, then the question is, what's the royalty? And if you haven't agreed upon it at that point in time, the parties in the pool could be at a serious disadvantage.

So as Robert said, it's imperative to know before you select the patents and when you define the pool, what's the royalty going to be?

MS. DeSANTI: Thank you. Desi?

MR. RHODEN: I don't think there's any standard body, standard development organization, that wouldn't actually go along with having something like either one of you are saying. It has usually been the participants and the legislation that exists around that that has prevented us from talking about it.

MR. FOX: Correct.

MR, RHODEN: And so essentially --

MR. FOX: Exactly right.

MR. RHODEN: -- in terms of defining what is reasonable or is it something that you make public, that's one of the areas that I think that the FTC and DOJ can actually step in and make some suggestions, some guidelines. I don't really know exactly what you would come up with.

But there is a need for us to know. Now some of the people that say reasonable and nondiscriminatory, some of them say, "We will offer it at reasonable and nondiscriminatory and by the way it's going to be free for anything that is implemented in this standard." It doesn't say that they're giving away the IP for all products. It said that they're willing to offer it for the products that are involved in the standard. That's something that's relatively new.

MS. DeSANTI: Anyone else? Fred.

MR. TELECKY: Yes, I'd just like to say that I don't think TI's a member of a single patent pool, just to put it in perspective. Guess what I'm saying is it's not really an issue for us in our area of business. The whole standards issue is a big issue, the disclosure requirements, what's relevant, what's necessary, what's essential; that's a huge issue just from a work standpoint. But just classical patent pooling, we just

don't see it.

MS. DeSANTI: So in terms of the antitrust issues that you run into in standard-setting, is there more to say than has been put out here?

MR. FOX: Well, clearly there's a lot more to say because April 17th and 18th are reserved for those topics.

MS. DeSANTI: Yes, but this is your opportunity to lay the foundation for some of that discussion by giving a business perspective on it. I think that those conversations may be more arcane in the antitrust sense.

MR. FOX: We promise we'll have much more to say.

MS. DeSANTI: All right.

MR. BARR: Yes, let me just agree with Steve that it's an area you can help us in, because it is sort of fear of antitrust issues, I think, that keeps the standards bodies from making some of the improvements that we're looking for.

And while I'm at it, on nondiscriminatory, there's also no definition. I saw a letter to a standards body today that said, "I'll be nondiscriminatory but that doesn't mean I'll offer the same terms to everyone."

MS. DeSANTI: Could you just, for the record,

lay out which antitrust issues you think that create the most anxiety?

MS. BARR: I'll pass on that.

MR. RHODEN: Okay, we have hard and fast rules. Anytime somebody mentions the word "price" they're almost always thrown out of the room. We have that because we want to make absolutely certain that we do not violate any of the antitrust policies, and so that's why you'll never see a patent letter that has anything listed in it about what the rate is. And actually, I would say, nine out of 10 times when I review a patent letter that comes from some place, it usually does have that in there.

And so people, I think, in general want to make it public and they'd like for everybody to know exactly what it is, but we feel from, at least, our interpretation of the guidelines that we can't do that, because then it would be a violation of antitrust because it would be price-fixing or whatever.

Now if you come out and say something different, frankly, we're looking for guidelines. If you help us out here, you give us some guidelines, if you don't like the way we're doing it, let's change it so we can fix it and actually service the industry. Because the standards bodies are really the industry working for the industry. The same people that are in this room are

all in the same organizations trying to work, and doing what the customers essentially won't let us do any other way. Every one of us here, every company here, would love to own their own market. We're in standards because the customers won't have it any other way.

MS. DeSANTI: Joel.

MR. POPPEN: Well, to the extent you're asking for a laundry list, I guess I will go back to the one that I presented earlier, and that is the ambush problem. From an antitrust point of view, obviously what happens there is there's incredible market power created by, in particular, the knowing nondisclosure and really an intention to have exactly happen what happens, and that is you hope for your IP to be adopted. It gets adopted, you don't tell anybody, you're then in position where you have incredible market power based on that adoption. So that ambush issue that I think is clearly an antitrust issue on top of the things that standards bodies do or don't do based on not knowing whether it's an antitrust issue or some sensitivity to it.

MS. DeSANTI: Fred.

MR. TELECKY: Yes. Getting to standards and I think the Dell situation has given us a lot of pause, and the whole problem of knowing what to disclose and when to disclose. I think JEDEC's got something like 50

committees and subcommittees and JEDEC is only one of a multitude of organizations that TI belongs to. And we send engineers; we don't send patent lawyers. Even patent lawyers don't have perfect knowledge of what our patent portfolio is. TI has something like 8000 patents in the United States that are active patents, and for us to know what's in that portfolio, we think, is just a mind-boggling, budget-busting exercise to try to figure that out with any degree of accuracy at all.

Typically, for example, when we go through our portfolio to see what patents are valuable for a particular licensing situation, we'll find patents that are 12 years old, when we come up for the 12-year maintenance fee. Up to then we didn't know about them. Nobody knew about them. So if we didn't disclose that, I mean, are we suddenly in trouble with a standards organization? Reasonable people can disagree on the way you read a patent claim within a single licensing organization or listen to a licensing debate. Watch a litigation and watch the judge scratching their head trying to figure out who's right in a Markman hearing.

We think the problems are just enormous in that area with having some kind of an absolute disclosure standard. And then you've got all the problems of figuring out what's essential or what's necessary or

what's relevant, all these different terms. Is a background patent relevant? TI had a patent on the basic integrated circuit at one time, the Kildy patent, both in the United States and Japan. We presume that most people would require that for a whole host of standards. Do we have to disclose that?

We see a lot of people disclosing everything they've got. They say, "Half our portfolio is necessary or essential for this patent What kind of notice does that provide? I mean, we could say, "Sure, we've got 8000 patents, need them all." It's not good faith. So, I think there are a lot of problems in that area.

MS. DeSANTI: Desi?

MR. RHODEN: From the issue of standardization, let me address directly your comment.

If later down the road you discover that you have a patent, I don't think any of the standards bodies are saying that you have to disclose every patent that you've ever created. Essentially what they're asking you to do, and I hope I don't wind up shooting someone in the foot by saying this, but in my opinion what we're saying is that if you do not disclose that you have something and you discover it later, then by definition you're basically saying, "I'm not going to go after that standard."

And I believe that's reasonable, because if you want to assert something against a standard that is going to create an automatic market and to create automatic customers and to create automatic lock-in, then you should do some due diligence and actually make sure that you have covered your bases. The flip side of that is to say, "Well, I didn't really review this until 12 years down the road." You get into that slippery slope there where did you know about it or did you not?

And remember, I'm not talking about the companies that operate in good faith, I'm talking about those that abuse the system.

MS. DeSANTI: Robert?

MR. BARR: Just real briefly on that, my observation is that the making the patent unenforceable when someone fails to disclose it is the draconian remedy. As long as reasonable, nondiscriminatory terms don't tell us much anyway, I think we should default to a failure to disclose obliges you to license on reasonable, nondiscriminatory terms which is the initial concern of the standards body, that somebody wouldn't block it in the first place.

But the current remedy is, maybe in egregious cases, I don't know, but in all cases I've seen is to make the patent totally unenforceable. So I'd actually

sympathize with the patent holder on that one.

MS. DeSANTI: Well, can I clarify it, is it totally unenforceable or unenforceable with respect to that particular standard?

MR. BARR: With respect to the standard.

MR. RHODEN: That's right.

MR, BARR: But I'm saying with respect to the standard, there would be a RAND obligation as we now call it, but then you get to my concerns about what does that mean and how do we deal with that?

MS. DeSANTI: Fred?

MR. TELECKY: Yes, I have a problem with unenforceability, for all the reasons that I just mentioned. I think it would an inequitable result given the difficulties, and apparently it's an absolute-liability sort of standard that's being proposed here. We think it would lead to people abandoning standards organizations if that were the result. It would be better to not participate and just be able to use your patent portfolio the way you think it makes sense, rather than to have to live up to some, "If you don't disclose it you lose it."

And then if you do overdisclose, then I question what good is that. What if you're wrong, what if you say this is essential for the standard and it's

not?

MS. DeSANTI: Stephen?

MR. FOX: I think it is --

MR. RHODEN: Nothing I --

MS. DeSANTI: Go ahead and then --

MR. RHODEN: -- so I --

MS. DeSANTI: -- Stephen.

MR. RHODEN: I don't think that requiring people to disclose would lead to the end of standards organizations and in fact I would have to say that it's been my experience that following down that path, and when the courts have actually made rulings along these lines where the Dell ruling or something along that line, there have been more people that want to get involved, because they said, "Well, we like the way that we can have at least some protection going down that path."

Now you do open up and say, well, what about those people that are not part of the standards organization? What about the decisions that you make and the people that are not there? How is it that whatever IP they may have, how do you deal with that? And that's another thing that we'd be looking for input from you guys here.

MS. DeSANTI: Stephen and then Peter.

MR. FOX: You have to be careful not to be

overly simplistic in defining what is a standard and what's essential, because a standard today may not be the same standard as tomorrow and the one standard today may morph into something slightly different tomorrow, next year, three years, five years, whatever it may be downstream.

So the process of identifying patents and making them available later on has to somehow be accommodated in the guidance that you give.

MS. DeSANTI: Peter.

MR. DETKIN: We have to be somewhat careful here in our terms. We're not talking about licensing patents, we're really talking about licensing a technology. At the end of the day the process is doing fine, which is essentially JEDEC or some other committee will develop a technology, a standard, a specification, and the companies that participate in it can at a certain point say, "Yes, we want to sign onto this and we will license this technology, we have some patents that are relevant to this specification."

And most companies will have a good idea, to an 80, 90 percent confidence level what patents they have. I mean, there's going to be the one patent that you didn't know about that was buried that came up for renewal, but for the most part you will know which

patents are implicated by the specification that you are signing onto.

And as to the last 10 percent, essentially you are taking a risk, but you're saying, "When I find those, that last 10 percent, I am going to license this under the terms that the committee has agreed on." Generally these days it's R&D, we don't call it RAND, which I also agree with Robert is an undefined, big and potentially very dangerous term because of the patent stacking problem.

But if you want to play the game, that's one of the costs, which is you're agreeing to license the technology and patents on that technology.

MS. DeSANTI: Fred?

MR. TELECKY: Yes, I guess if it were that simple it might be easier for us if it was just a technology, if it were understood that these were patents specific to that technology and they don't include background patents like our integrated circuit patent or something that would cover any standard, no matter what was implemented. Because in that case it doesn't matter what standard is ultimately chosen, we have a patent that covers that.

MR. DETKIN: We try to address that -- I agree with Fred -- we try to address that by talking about

patents that are necessary to implement, as opposed to things in the background that could be used or could not be used; if it's not necessary to implement the standard or the specification, then it's not one that we would consider under the R&D obligation.

But I think that varies and that's one flavor of standards. There are a lot of flavors out there, and I think that that's something you'll explore the 13th and 14th.

MS. DeSANTI: Let me ask you more broadly, since these are areas that are looking both at how businesses are finding competition and intellectual property policy on the ground, but also stepping back to look at a broader policy perspective at these issues, if you have any comments on the role of patents with respect to innovation in your industry, and the role of competition with respect to innovation in your industry? And I'll just throw that out for anyone.

Okay, Joel?

MR. POPPEN: I would tend to say the answer is it depends or includes all of that, but certainly I think competition has a lot more to do with it. I'll give you example.

We, Micron, tries to position itself as the lowest-cost provider of memory products of all of our

worldwide competition. There's nothing about patents that suggest to us that we should be innovating to be the lowest-cost provider. And much like Robert said, if the patent system went away tomorrow, we wouldn't change our behavior. We would still try and be the lowest-cost provider because of the competition issues.

On the other hand, the patent system does play a role, and does play a role in innovation. I think it's just a much lesser role than maybe in a lot of other industries.

MS. DeSANTI: Peter.

MR. DETKIN: What I want to say is that the clear driving force behind innovation is competition, I mean, Intel spends, you know, three or four or more billion dollars a year in innovating because we face fierce competition at every level from various different competitors, and if we don't do it, we're going to be knocked out of the market in a heartbeat by AMD or VO or Trans-Meta or whomever, or Sun or IBM or DEC or Compaq now or HP. There're a lot of them.

The patents, however, are necessary partly, well, primarily for defensive reasons, but we can't lose sight of the free-rider problem. So we still need the right to exclude to deal with the free-rider problem because there are a number of companies out there --

MR. BARR: What's that?

MR. DETKIN: -- that would like to --

MR. BARR: What is that? What do you mean by that?

MR. DETKIN: Well, the free-rider problem meaning people who will come in, having -- well, to take advantage of the billion dollars in R&D that we spent to develop a market and to develop a successful product. It's not that hard to knock off really any semiconductor product at the end of the day with a couple of talented engineers and a fab.

You seem surprised at that but I'm telling you, 20 --

MR. BARR: Very.

MR. DETKIN: -- 20 skilled engineers in a room can come up with any semiconductor product, and they can just go to TSMC and say make this for us.

MS. DeSANTI: Okay, Stephen and then Fred.

MR. FOX: Okay, that's the point I was going to emphasize, too, is the free-rider problem. It's only a matter of time if you don't protect the output of the technological advance. If anybody can come along and freely copy it, it's only a matter of time before the innovator stops innovating because what's the use, you can't make a buck out of it.

It's very important. HP gets patents for four reasons. Number one is to prevent other folks from copying, to preserve our markets. Number two is to have a portfolio that we can use for cross-licensing. Number three is to get patents to make sure somebody else doesn't get a patent on the same thing, going back to what I said earlier about independent inventions being done by people completely independently, in different places, different areas of the world. If we don't get the patent, somebody else will. It will put us at a disadvantage.

And then the fourth reason is simply to get a decent return on your investment through out-licensing or other revenue-generating means.

MR. DETKIN: Is that in order of priority?

MR. FOX: Basically it's in that order: one, two, three, four. HP may be a little different than some companies. We have a sizable part of our business that does rely on patents to preserve our markets. But on the other hand, we have another part of our business where we seemed to get picked to death on the holdup situation.

MR. DETKIN: I might flop around reasons three and four but I tend to agree with you, probably less -- oh, sorry.

MS. DeSANTI: That's okay. Fred?

MR. TELECKY: Yes, I think I agree pretty much with what's been said, but if looking specifically for a link with innovation I think you can't overlook the disclosure that the patents promote. I'm talking about when you look at a global economy like we've got today, certain countries like Japan are, have been notorious for being very difficult to know what they're doing technically. And everything's written in Japanese; not many people read that. A lot of their publications are circulated amongst Japanese companies only, and you can't get some of the technical journals. It's impossible.

So we find those patents a source of ideas. We see things in them that we might not otherwise see. People would keep them trade secret. And I think you'd probably see a lot more trade secrets around, and to me, that would slow innovation.

MS. DeSANTI: Desi and then Robert.

MR. RHODEN: Well, it's been my experience that competition is what drives the innovation; patents have almost nothing to do with innovation. Because as soon as I get a product out and I get competition, as you've heard here, it's pretty easy for anybody to say, "Wow, that's a neat product, I want to do something just like that. I can go off with a few engineers in a very short period of time and do exactly the same thing."

Now obviously you got to change something about it, otherwise you're going to walk across some patents, and so the protection part of it, I think, is what the patents serve, not the innovation. So in other words, the fact that I can get a patent doesn't necessarily guarantee that I'm going to innovate. I think it's quite the opposite. I think it winds up being the competition more than anything else; at least, that's within the circle of people that I work with, that's a pretty universal feeling.

MR. DETKIN: Right, but don't forget there's no incentive to do the innovation if at the end of the day --

MR. RHODEN: Well --

MR. DETKIN: -- you're not going to be able to protect it.

MR. RHODEN: -- that's right.

MS. DeSANTI: Thank you, Peter.

MR. BARR: Well, and I -- am I up?

MS. DeSANTI: Yes, you are, Robert.

MR. BARR: I certainly think that's an important function of patents, to protect against copying, absolutely. But I think it somewhat depends on the industry and the stage at which the industry's in whether that's an important factor in innovation. I

think I addressed that.

I wanted to address the disclosure thing. I'm glad to hear Fred say that their company gets value out of disclosures, particularly from other countries. It's been my experience in my practice, not just with Cisco, that I've actually never met an engineer that learned anything from a patent. And I also think it's important to note what Peter said, which is the philosophy of many of us now, that if we can keep something trade secret, he was talking about processes, and historically, you know, there's both sides to that -- you see plenty of patents on processes, maybe that's the ones that TI learns from -- but in general we will choose not to patent if we believe we can keep it a trade secret because we're just publishing something that someone else could then use and we would never know it. If it can be kept a trade secret by us, it could be kept a trade secret by them, and it's not worth patenting. The bargain breaks down. Most of the companies that I visit with and compare notes, it's always detectability and trade secret issues that are part of their criteria for patenting these days, and they're not going to disclose things that they can keep trade secrets. The patent system, in my opinion, doesn't help cause people to disclose things.

MS. DeSANTI: Okay, I think we'll take a final

round of any comments people would like to make. Stephen, go ahead.

MR. FOX: Yes, I'll pick up on one comment over here. While in some cases, competition does drive innovation, you have to start then with the premise that you have the freedom to compete. How do you get the freedom to compete; get it through the patent system.

MR. BARR: Mark Twain went broke.

MR. FOX: Made a lot of money writing books, though.

MR. BARR: You see part two?

MS. DeSANTI: Any final comments that people would like to make? Julie?

MS. MAR-SPINOLA: Somewhat related, I think -- and this is one of the issues that I brought up earlier, my observation of the trend of licensing practices with some companies and underlying philosophy of making it a revenue maker, as opposed to a device for protecting your technology and your development -- sometimes overzealous licensing practices actually stifle innovation, for two reasons.

One is that, if everybody continues to make their technology through their patents available and we're willing to pay for that, then a company has to make a decision sometimes as to whether they're going to use

that money to pay someone for the license or use that money to pay for innovation, R&D.

The other thing, I think, too, is that if you're going to pay for it and it's usually a hefty sum, at least that's been my experience, I think you're going to practice it or you're going to find a way to practice a portfolio that you just cross-licensed. That takes money, and I think also what it does, too, is that you may be offering a product now that others offer, so to a customer you may not be offering something that is innovative, or unique. But what you're doing is that you're offering something that some other company has developed and you've paid a pretty penny for it and you need to do it.

So I think again sometimes overzealous practicing, overzealous licensing will result in less innovation. So patents aren't always, like anything else, I suppose, as positive.

MS. DeSANTI: Thank you. Fred?

MR. TELECKY: Yes, I guess if this is open to just anything, patent thickets have been something that's been underlying, I think, a lot of what we've been talking about today, and I think our observation at TI is that we haven't seen a big problem resulting from patent thickets. I think that when you have to negotiate with

someone, they'll use their patents for trading material just like we will, and you deal with each individual at a time, you don't find people ganging up on you.

So we're able to take the same clutch of patents we've got and negotiate with multiple people to get licenses that we need. So, you know, it's not as if one or two big companies held all of those patents and were keeping everybody else out. So you can, I think, negotiate with these people one at a time and get the freedom of operation that you need that way.

And I don't think there's an issue, a serious issue, with quality of those patents, because we don't see that many what we would consider to be unenforceable patents asserted against us, not seriously. I think you realize you end up spending too much money and you have too many problems if you try to assert a patent that you think may be invalid. If we see a patent that we think we've got a problem with, we'll either not use it at all or reexamine it. Reexaminations are available to patent holders to try to correct some problem, prior art problems, if not everything was in the office right away. We use re-exams quite a bit.

So we just don't see the big issue with patent thickets as an obstacle. In fact, sometimes they're even a positive spur for innovation, if we want to design

around. I mean, if somebody's got a patent, they don't want to license it, in only a few cases do we see someone saying, "Hey, we're not going to license that patent at all." Usually it's about money. So in those few instances, it may be a spur to design around, or if the royalty rate's too high, it's a spur to design around, create new technology that way.

MS. DeSANTI: Bronwyn, we're glad you're back.

MS. HALL: I just can't resist a comment or two on -- fascinated to hear this --

MS. DeSANTI: Can you pull the microphone closer?

Thank you.

MS. HALL: Yes, I know I missed some good stuff, and I'm not going to comment on the stuff that I missed,
but --

(Laughter.)

MS. HALL: Oh, I'm an academic, I can comment on anything. But the re-exam thing is kind of -- I'm afraid it's something that I have the numbers on and, you know, between, I guess, 1979 and 1999, give or take, you know, 20-year period, there were 3000 re-exams requested in the US PTO and 50 percent of those were requested by the holder of the patent. It's less than one percent of

patents. It's just not a big deal and I'm really surprised to hear you say that you've requested a lot, because it's not visible in the data.

MR. TELECKY: Well --

MS. HALL: It must be in the last year or two.

MR. TELECKY: -- we like to think our portfolio's big, but I don't think it's going to impact your data.

MS. HALL: I mean, it's not that it wouldn't be nice to have re-exams, but the way the rules are set up it's not in most companies' interests.

MR. TELECKY: Well, I think --

MS. HALL: To request it and --

MR. TELECKY: -- I think in fact if you -- I think you're right if you're talking about requesting exam of somebody else's patent, but if you request examination of your own patent --

MS. HALL: Your own, yes.

MR. TELECKY: -- I think things change, because it is pretty much just an ex parte kind of a --

MS. HALL: Yes.

MR. TELECKY: -- prosecution just like the original patent, you know, when you got the patent.

MS. HALL: Well, that's the point of my numbers, half of them are requested by the patent holder.

MR. TELECKY: Right. So but the point is, we do use it as a tool because it's an absolutely essential way to dispose of prior art that wasn't considered by the Patent Office, but nonetheless you think you've got a very good patent fundamentally. You think that the basic invention was there. You think you may need to scope back on your broad claims a bit, but there's still something very useful there.

We've got some patents we've reexamined twice, and you end up with a patent that's got a lot of presumption of validity.

MS. HALL: So it's your own patents, okay.

MR. TELECKY: Yes, exactly.

MS. HALL: Yes, okay, fine. That I wanted to clarify.

MR. TELECKY: No, we never request examination of anyone else's.

MS. HALL: Yes, yes, yes, that's consistent with what I know, that --.

MR. BARR: Surprised it's 50 percent, you're saying 50 percent?

MS. HALL: 50 percent of all re-exams appear to be --

MR. BARR: I expected --

MS. HALL: -- between 40 and 60 percent appear

to be requested by the owner. It's a little hard to tell, the 40 percent is the absolute minimum. The reason it's hard to tell, of course, is because the law firms sometimes request them, so you have to manually check that, and we haven't been able to do that.

But I would say 50 percent is a pretty good number, I'd put a lot of confidence on that being roughly the right number of those 3000. But that's only through 1999. Really what I was wondering was whether he was referring to the last two years for his own patents, and it's his own patent which I, you know, very possible.

MS. DeSANTI: Okay, Peter, we're going to let you have the last word.

MR. DETKIN: Oh, oh, that's great. just to see which company you --

MR. FOX: Now I want to talk --

(Laughter.)

MR. DETKIN: This discussion of re-exams is interesting. I have some strong views on re-exams but it's really tangential to the thicket issue. You'll recall the number they put up on the slides know, indicating that in the semiconductor/system areas, close to half a million patents active out there, and the problem is not that they're all invalid or that a large portion of them are unenforceable. Some of them are, but

those aren't the ones that we're talking about.

The problem is that there's unavoidable overlap, so that at some level we're going to have to worry about the patents of all as, I think it was, half a million patents owned by more than 40,000 parties, that we have to worry about all those parties, and we have to worry about how we're going to negotiate with them. Some of them don't want to negotiate with us. I know how to negotiate with other contributors in the field, but there are some out there who just say, "I just want billions of dollars." It costs them nothing to go to litigation. They get a contingency-fee lawyer, they can keep litigation going for, you know, quarter-million-dollar investment, no problem, and they force me to spend millions of dollars, which is worth it from Intel's standpoint, because I'm protecting a revenue stream of tens of billions of dollars, and it's a lottery ticket for them.

And you play the lottery enough times, sooner or later something's going to hit. So the issue is not re-exams, it's not validity, it's not enforceability. In fact, every one of the trolls we faced we have beat them back with claims of noninfringement. I just got one affirmed yesterday from the CAFC. Datapoint, another one that's out there that you guys don't have --

MR. BARR: Another troll?

MR. DETKIN: So the re-exam is really tangential to the issue.

MS. DeSANTI: Okay, all right, Stephen, we'll let you go and then --

MR. FOX: Okay, I don't want to --

MS. DeSANTI: -- the record remains open, but go ahead.

MR. FOX: -- I didn't want to upstage Peter, but I do have one thing in the nature of a closing comment.

We heard earlier in this panel discussion perhaps legislation could fix some of these things, but I would like to encourage the FTC and DOJ to look at some shorter-term solutions. You know, I view legislation as a long-term kind of a thing. It takes a long time for a bill to work its way through, and just about the time you think you've got it right, then the Congress adjourns and you start all over again next time.

Meantime, I think that the FTC and the DOJ could be looking at ways to interpret what we've already got on the books in the way of laws to --

MR. DETKIN: Hear, hear.

MR. FOX: -- help us through some of these situations.

MR. TELECKY: Hear, hear.

MS. DeSANTI: Thank you very much, and I will note that the record remains open, and we are accepting further comments. If you have ideas on areas you would like the antitrust agencies to think about, please let me note that, you know, send in your comments, your cards and letters and all of those things are very welcome to us. This is just the start of a process of thinking through these issues. There's going to be a lot more to come.

But I would like everybody in the audience please join me in thanking a wonderful panel of presenters.

(Applause.)

MS. DeSANTI: And with that, we conclude our Berkeley sessions. Thank you.

(Whereupon, at 3:58 p.m., the workshop was concluded.)

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: HEARINGS ON COMPETITION AND INTELLECTUAL PROPERTY LAW AND POLICY IN THE KNOWLEDGE-BASED ECONOMY
HEARING DATE: FEBRUARY 28, 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: MARCH 8, 2002

KENT ANDREWS

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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