FEDERAL TRADE COMMISSION

THE EVOLVING IP MARKETPLACE

THE OPERATION OF IP MARKETS

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FTC Conference Center

601 New Jersey Avenue, N.W.

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FEDERAL TRADE COMMISSION

I N D E X

P R O C E E D I N G S

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PANEL 1: UNIVERSITIES AND ENTREPRENEURS

MODERATORS:

SUZANNE MICHEL, FTC

ARMANDO IRIZARRY, FTC

PANELISTS:

RON D. KATZNELSON, Ph.D., President, Bi-Level Technologies

JOE E. KIANI, Chief Executive Officer and Chairman of the Board of Directors, Masimo Corp.

JON SODERSTROM, Ph.D., Managing Director, Office of Cooperative Research, Yale University

THOMAS G. WOOLSTON, Chief Executive Officer, MercExchange, LLC

MS. MICHEL: Good morning. Welcome to the Federal Trade Commission. I'm Suzanne Michel, Assistant Director for Policy in the Bureau of Competition. Welcome to what I believe is our third in the series of FTC hearings on the Evolving IP Marketplace. Today we'll be looking at the way different companies, different firms and different industries participate in markets for intellectual property, for patents and for technology and the way that those markets promote the

patent systems to innovate.

We will be announcing today our next set of hearings to be held on April 17. There will be a press release going out. Please stay tuned for that. That should be also a very interesting day. We will have the CEOs of Ocean Tomo, Acacia and ThinkFire to talk about how patent markets operate.

I should also mention that tomorrow we will be back here again talking about economic perspectives on patent markets and how the notice function of patents affects patent markets and how it might be improved, whether it's working fine, those kinds of things.

Our first panel today is on entrepreneurs and universities, and I will turn it over to Armando Irizarry to introduce our panelists.

MR. IRIZARRY: Good morning. I'm Counsel for Intellectual Property here at the Commission. It's my pleasure to welcome you to these hearings. We're going to give brief biographical information about the panelists, and there's more complete information in the hearing's web site at ftc.gov.

I'll begin with John Soderstrom. John Soderstrom is the Managing Director of the Office of Cooperative Research at Yale University. This office is responsible for developing and executing strategies for

inventions resulting from Yale's scientific research, including patent license agreements and information of new business ventures. He has participated in the formation of more than 25 new ventures, which collectively have raised over $400 million in professional venture capital.

Dr. Soderstrom was a founding board member and Past President of the Association of Federal Technology Transfer Executives and the 2008 president of the Association of University Technology Managers.

The next panelist is Joe Kiani. Mr. Kiani is the CEO and Chairman of Masimo Corporation. Mr. Kiani founded Masimo in 1989 to improve the accuracy of non-invasive patient monitoring. Under Mr. Kiani's leadership, Masimo has grown from a garage start-up into a successful publicly traded medical technology company, employing over 1,700 people worldwide with annual sales growth nearly 25 fold in the last five years.

Masimo has technology, license and OEM agreements with leading patient monitoring manufacturers throughout the world, and it is the leader in the measure through motion and low profusion pulse oximetry technology markets. Mr. Kiani is an inventor on more than 50 patents. Currently, Mr. Kiani is Chairman of the Medical Devices Manufacturing Association.

Our next panelist is Thomas G. Woolston. Mr. Woolston is an inventor and an entrepreneur. He's a main inventor on nine U.S. patents. He's the founder and CEO of MercExchange, LLC. He's on the Technical Advisory Board of the George Washington University School of Electrical Engineering and Applied Sciences. He has organized companies, hired engineering talent and raised venture capital and company financing.

His companies have been both plaintiffs and defendants in intellectual property disputes. He has been a principal negotiator for intellectual property and other types of business agreements. He was formally with the United States Central Intelligence Agency and the United States Air Force, and he's an engineer and a lawyer.

Finally, on this panel we have Ron Katznelson. Mr. Katznelson is founder and President of Bi-Level Technologies in Encinitas, California. From 1990 to 2005, he was Chief Technology Officer and Chairman of Broadband Innovations where he led the company's entry into the digital RF cable TV industry.

He also has been a university professor and he's an author of a book and numerous technical publications. He's an inventor on more than 25 U.S. patents. Dr. Katznelson served as a member of CableLabs' DOCSIS

Working Group and a co-author of the DOCSIS downstream digital transmission specifications.

He is an advisor to high-technology firms, and a member of the San Diego Intellectual Property Law Association.

At this time, we're going to have the panelists make introductory remarks for about ten minutes each in which they will be able to speak about their experiences with the ability of patents to promote innovation and support the creation of new products, and we're going to begin with Dr. Soderstrom. They may sit or come to the podium.

DR. SODERSTROM: I think I'm going to sit. Thank you for the invitation to be here today and participate in this panel. Just as a point of reference, I'm here representing the Association of University Technology Managers, which is a membership organization of over 3,000 members around the world that are technology transfer officers from over literally hundreds of universities around the world.

As research universities, we are major consumers of intellectual property as well as generators. Our research budgets tend to, on average, create one patentable invention for every $2 million of research that we've performed for the various agencies.

To put that in perspective for you, literally we filed -- thousand of patents last year were issued in the names of universities. My own university, Yale University, had over 200 new invention disclosures, and we filed approximately 170 patent applications. We had issued something on the order of 75 patents last year. We're not even in the top ten among universities, so just to put it in perspective, we are a major player in this market, but why do we do it?

In 1989 Congress passed a law called the Bayh-Dole Act which was to encourage universities to patent and to commercialize inventions growing out of their research. Prior to the passage of the Bayh-Dole Act, very few universities were actually performing anything in this marketplace -- my own university being no exception to that. With the passage of the Bayh-Dole Act, many of us have become much more active in our participation, and that has grown every year for the past 30.

What's it accomplished? Well, just to put this in perspective, in the past year, in the past year that we have data which is the year 2007, over 500 new companies were formed based on intellectual property that was produced by universities. Many of those formed were supported by professional venture capital, and of

those that have been formed since the passage of the Bayh-Dole Act, over 3,400 are still in operation here in the United States.

In the year 2007, approximately 700 new products were introduced on the marketplace, and in the past decade, over 5,000 new products have been introduced. For universities, obtaining patents is an important aspect of what we do, but it's not the end all and be all.

The most important thing that we can do with those pieces of intellectual property is to commercialize them, and the only way that can be done is in partnership with companies. We like to say the question for universities isn't whether we're going to license the intellectual property, the only question is to whom. Is it going to be an existing company like Masimo, which we've done business with in the past, or is it going to be a new company that we start?

And for any of those companies, the most important thing is how strong is the intellectual property that we can provide because after all, the importance for the company is how safe is their investment going to be? Are they going to be able to assure any kind of return on that investment because

most of the products, most of the inventions that we are coming up with are a long way from the marketplace and are going to require a substantial investment over a period of time, and that requires protection for the stockholders and other investors.

So, we are clearly in favor of a very strong patent system that both issues quality patents, i.e., high validity but also has assurances that they are going to be withheld, sustained within the court system, and we will be able to protect them, protect our investments over time, and with that I will stop.

MS. MICHEL: All right. Thank you. Let's see. Let's get Joe's slide up there. Just hit page down.

MR. KIANI: Thank you so much, Suzanne. Thank you. Good morning. I'm very happy that the FTC is looking into intellectual property and its value.

While I'm honored to be here today to speak about Masimo and how intellectual property impacted Masimo. We're only one story. At Masimo we have a saying, "in God we trust, but for everything else we need data," so we hope that FTC will do just that, get the real data. I know a lot of anecdotal data is thrown out, but the real data – so that hopefully the right solutions are recommended.

Our focus must be to foster innovation and our

economy and further enhance the U.S. as the world leader in innovation. I am an electrical engineer. I have my bachelor's and master's in electrical engineering. I founded Masimo actually 20 years ago, and I've been the CEO of the company. I'm now also a Chairman of Medical Device Manufacturers Association representing over 200 medical technology companies from basically a few employees to a company like ours, which has about 2,000 employees, but I also speak on behalf of the MDMA today and not just Masimo.

I started Masimo in my garage, and we invented a disruptive technology, and the reason I wanted this slide up, but it doesn't matter, I can show you here, I know sometimes the dialogue that's been had regarding intellectual property has been -- is it between pharma and technology companies? It isn't.

We are a technology company. I think as you can see up there, we make circuit boards that we provide to the industry as an OEM company. We make our own end-user product. In fact it has rotational screen since 1999. I know the iPhones do too these days. General systems, software and many sensors, so really this isn't about pharma versus tech. We are a tech company serving patients and doctors and hospitals.

Today we are a $300 million a year revenue

company. We're a public company traded on NASDAQ, but the hill we had to climb to get here was not an easy one. We had many obstacles, and despite the frustrations that we had with the patent system, without it, we wouldn't be here today, and any changes that are going to be made to the patent system should be considered cautiously.

We should not forget the law of unintended consequences. If I could just divert for a minute -- I know one of those unintended consequences quite well. In the mid '80s, the government worried about rising healthcare costs, allowed group purchasing organizations basically a pass for anti-kickback statutes. Unfortunately what that did, the vendors became the people paying the checks for these group purchasing organizations, and over time they became beholden.

That has not only raised costs to the healthcare community, it is costing the taxpayers billions of dollars, and it has stifled innovation. So I hope again we're going to proceed cautiously and make sure there is no unintended consequences.

When I started Masimo, I was 24 years old, and I saw a problem with pulse oximetry. The problem with pulse oximetry was that it measured oxygen saturation on healthy, well-profused, non-moving people, but as soon

as there was low blood flow or patient motion, the products didn't work. Over 70 percent of the alarms were reported to be false alarms, and the industry had given up.

They thought that was just impossible to solve. They tried. They just had given up. There was an entrenched company with 80 percent market share making 80 percent margins, despite the fact that pulse oximetries didn't work when you really needed them. That company had commercialization wired, but in our view they were no longer innovating.

As I stated earlier, the industry thought it was impossible to solve this problem. Yet, we did not think so. We thought we could solve it, and our innovation was the only thing we had. At 24, I didn't have commercialization experience. We didn't have any manufacturing. We didn't have any distribution, so the patent was very important because significant investment was necessary.

I initially got a second mortgage on my condominium but later we raised $90 million through venture capitalists. Every time we got serious with a venture capitalist, they wanted to understand if our patents had teeth, if we could really protect our innovation, and fortunately we did. Fortunately they felt good about it, and our

innovation today has been responsible for saving many people's lives, many lives of babies.

The rate of eye damage in a neonatal intensive care unit used to be about 12 percent according to Vermont Oxford Network Group. With our technology that's been almost reduced to zero. Yet, at the same time, every year medical error causes many people dying. Everyday a plane full of people get killed because of medical errors, a lot of times because these monitors are either not working or they're turned off or they weren't even being tried to be used because of the excessive false alarms.

So by solving that problem, we now have created a patient safety net not only for the patients that were being monitored before but the new ones in the general ward.

Our recent invention allows us to measure carbon monoxide non-invasively. Just recently in Raleigh, North Carolina, a family was found by the side of the road. They were staying at a motel. They woke up vomiting, nauseous. They tried to get themselves to a hospital. They were so disoriented they couldn't get there. Well, they pulled over an ambulance. They were very lucky because that ambulance happened to have one of our devices that measures carbon monoxide, and indeed they

found they had CO poisoning.

They went back to the hotel, and they found -- motel and they found that there was a problem, and the head of Emergency Medical Services, Skip Kirkwood, said that over 50 people would have died had it not been for our technology and their intervention.

So, last but not least, we recently also have developed a way to measure hemoglobin non-invasively, and again we're getting, just in the clinical study stage alone, and I'm not going to bore with you more stories, but we've been able to save many lives.

Now, we could not have raised the money to accomplish what we have without our investors being confident that our patents would protect our innovation. In addition, we needed our patents to protect the investment from the entrenched company. In fact, after seeing demand for our product, the entrenched company decided to make their own.

Well, it was never quite as good as ours, but they did violate our patents and introduce a product that would get close to what we were doing. This company hoped that our patents wouldn't stand. They hoped that we couldn't afford patent litigation. They countersued us with ten patents. They sued our customers to stop our distribution. They bought a

company that had been out of business for 12 years, which I worked at when I was 23 years old, and tried to say they owned all of my inventions. They sent letters to our customers saying they were suing us and suggesting we would go out of business. Even under existing damages law, they seemed to believe that infringing was worth a try.

We fought over six years through discovery, summary judgment motion, *Markman* hearing, jury trial, post jury motions by the Judge and by the attorneys, the Judge, and finally the Federal Circuit Court of Appeals. We eventually prevailed. We won. We got an award for $134 million and an injunction, and it all seems good now, but it was the hardest thing I had ever done.

It was a lot of hurdles and problems that we had, but the results are that patients today are being saved. Babies are going blind far less, and would be innovators feel more like they can innovate and succeed because of our technology and our victory in the courts.

One significant reason was our patent system had teeth. I don't think I would have been -- I certainly wouldn't have been here today if it didn't have teeth, but I'm not sure Masimo would be here today. We, like others, have been sued by the so-called trolls hoping to

shake us down for some money. Although devaluing patents will undoubtedly minimize or eliminate my cost of defending Masimo against unwarranted patent troll attacks, I believe the detrimental effects will overwhelm any possible benefit.

If the troll problem is to be addressed, it shouldn't be addressed with a hatchet but a delicate carving knife to address the specific problem. Why? Because I know that our innovation would have not seen the light of day, and patients would have been harmed by any further erosion of the patent rights. Any further erosion of patent rights for innovative companies will make it more difficult for the next Masimo, and it was already unbelievably difficult.

As Hernando DeSoto, a Nobel Prize nominee, explained, successful free enterprise requires an effective system of property ownership rights. For decades, the U.S. economy and innovation has benefitted in a face of a worldwide competition to well-defined property rights for innovation.

The U.S. patent system has protected and, thereby, encouraged an entire innovation economy, and while regrettably many factory jobs have moved out of the U.S., knowledge workers have thrived with improved standards of living. We should take the opportunity to

strengthen our protection for innovation that drives our economy rather than weaken it.

At a time when our economy has slowed down and healthcare costs continue to rise, we must do what we can to spur innovation and strengthen intellectual property ownership which encourages entrepreneurs and investors to take chances at improving our world.

Through this innovation based economy, we can among other positive things create knowledge-based jobs and improve and expand our healthcare to all who need it, making it more efficient and effective.

Thank you very much. I look forward to hearing the other panels members and the Q&A session. Thank you.

MS. MICHEL: Thank you, Joe. Tom?

MR. WOOLSTON: Hi, good morning. Thanks. Thanks to the panel and the FTC for having me. That's a tough act to follow. Joe's very successful. I've been an entrepreneur ten years. The difference in our story is we had a patent trial. We had a patent appeal and a decision. We went on, had a panel rehearing denial. We were subject to post-trial reexamination, which was an interesting development.

We went to the Supreme Court, and our company didn't get an injunction, and we ended up selling our

patents and deciding we had to do something else because you couldn't protect market share without patent protection, without injunction protection.

We had a Final Determination by the highest court on validity. That didn't deter the PTO from continuing its reexamination, which has been going on for six years. I don't know if we were the first, probably the second party to a post *eBay v. MercExchange* injunction hearing, but we lost that. We were party to a second appeal to the CAFC. We've been a party to a 35 U.S.C. 145 action. We've been a party to three Patent Board appeals appearances.

So just to keep it short, I mean, I think patent law has dramatically changed already. I'm here to tell you where some of these policy changes really hit the road and hit us as a business, which is you can make certain kinds of business decisions with the expectation of protecting market share with patent protection, but you are forced into different business decisions if that protection is not there, and you have a compulsory license or whatever remedy the courts think they're granting instead of permanent injunctions.

The four major decisions we're talking about too are the *Portola Packaging* case, amendments to the -- '99 amendments to the patent statutes. The *eBay v.*

MercExchange case has already hit existing statutes and what I hope I can add. Very I think unintended ways they've already hit it. For example, 28 U.S.C. 1292 ©) (2) allows the district court to enter a final judgment but not a final accounting, so you can go up to the Court of Appeals without a final accounting.

Well, in light of the *eBay* decision, there's no relief at all because if a court denies a permanent injunction and doesn't do a final accounting, there's no information to make business decisions whether or not to exit the market or double down and try to enter the market so these are some of the things I like to add to the panel today.

MS. MICHEL: Thank you. And Ron? Feel free, would you like to go to the podium with your slides or we can move them for you.

DR. KATZNELSON: Is there a control there? I'll do it at the podium because there's a control there.

MS. MICHEL: Yes. Hit the down arrow.

DR. KATZNELSON: Let me check. Okay. This is going to be a little more data than the other speakers have put together, but partly because of the nature of the set of the questions that we received initially, as advance questions. So I'll make some comments on only one aspect of the topic today, and that is patenting

strategies.

One of the questions was pursuing patents during the invention and development stages, what consideration does one take into account, and how does that affect us? We at my company, Broadband Innovation, which relies a lot on patents -- it's an intellectual property based type technology. We've been in two types of businesses, and our company was acquired in December 2005, so I'll give you an example of the landscape we've had to deal with and how those elements came about.

But in doing so, I'm mindful of the fact that the patent strategy question that we're addressing today is going to be overshadowed by potentially a statutory change and some major elements that affect patenting strategies.

By the time the FTC report coming out of this session will come out, we might have a different law in terms of patent law. So I took the liberty of actually analyzing our history in the company in light of what happened had there been first to file, and I hone in on first to file, specifically, because it's an area that hasn't been discussed too much. People are mostly busy with the damages issue.

So there are important factors to consider, and so in a way -- forgive me for delving into the first to file

issue, but that's the context under which I'm going to show what has happened to us and what would have happened had first to file been in place.

Broadband Innovations started technology development back in the early '90s in a very promising technology. The core product was a broadband decoder device on the side of the house. We've developed this over the years, secured investments from AmeriTech, the Baby Bell, and later in '96 by Motorola.

Field trials and activities occurred in this time frame, and we obviously needed to develop other supporting technologies and so on. Each of those dots represents a patent application. We had numbers and some of them are shown with C-1, which means Continuation 1. Some shown with CIPs and so on.

The point is that during the course of this development, we found that the area that we got into, the consumer customer premise equipment wasn't really working for us. So, we moved to a head-end type technology, but again using the same core intellectual property through continuations. So the transition from that market was really accomplished through the process of continuation. The same disclosures that were used, we relied on back in 1992, we were still filing continuations in the late '90s. This slide shows the

case.

Now, we were able to secure strategic investors, Motorola and Scientific Atlanta, both of whom would were customers and strategic partners.

Now, what would have happened, if first to file was in place: We probably would have filed a whole bunch more applications as this shows. The reason for that is because as you develop some of this work, you're not sure which one is going to succeed. You're actually having to establish priority. You go race to the Patent Office. You file it, and this would have been the result.

And these are specific inventions that we had or some improvements that we had that we tested. Had there been a first to file, those that would have been filed at the Patent Office, and they're shown in different color here.

Now, Steve Perlman, a friend of mine who was the inventor of WebTV, has likened this process and actually showed his process of going through five years of development. Again he had 24 different ideas, tested them all, did refinements, got some key insights, did some rethinking. All of these boxes would have represented a patent application at the Patent Office had first to file be in place.

As a result, you can see that in the first to invent, only six or seven of them were actually filed but only the good ones, the successful ones, so that is the promise of first to file. It would be a process where a lot of applications would, in fact, be useless to their filers.

How do we know that? We see data. This is the result of an EPO analysis of the two types of applications that were filed in the European Patent Office. Applications that were filed with first priority, in other words, the first time they were ever filed in EPO, they're called EPO first filings, had basically been abandoned a lot more frequently than those that were filed without reliance of the filing date as a priority date, because they had prior priority.

You can see that first to file causes a lot of people just to run to the Patent Office, file something and see if it sticks. The result is that over 58 percent were never even reaching the examination phase. A lot of people just gave up or they just didn't see the value of these patents for them because they actually saw a different way.

Perhaps a lot of them would have gotten some claims. The determination of patentability doesn't

depend on whether the person using it actually used the solution or not. Is it different than a priority? Sufficiently so, and so the point is that this is an indication of use, of value to the user perhaps more than patentability, but nevertheless, there are some elements of patentability involved, so this is the proof that a lot of these things would essentially not be useful.

Also, applications that are filed in first to file countries seem to be skimpier, smaller disclosures. As you can see here, the U.S. is leading in terms of the breadth of the disclosure. This is just the specification, and you can see that there's an element here of a first to file and rush to the Patent Office and rush to generate a disclosure as quickly as possible.

What is happening with that process? Well, inventors in America take time, after they conceive and disclose their invention, until they actually file the priority application. This chart shows the distribution of time delay between the time that a technology transfer office and the university receives the disclosure and the time that it actually files a priority application.

You can see that some applications don't get

filed until later than one or two years after the disclosure. First to file means all of this delay is going to generate a huge loss in priority value to U.S. inventors. This is a study from six different universities. I believe that much of what's happening here, the dynamics of looking at inventions, looking to see the experimentation of it, looking to see the funding of it, all of these factors affect the way we do business in America in terms of invention and development. First to file will upset this whole process.

Perhaps all the invention disclosures that don't get filed today will get filed. This is an example of the data showing that about 60 percent of all disclosure reaching university transfer, technology transfers actually get filed ultimately with priority application. Chances are with no time to decide, all of them will be filed or a great many of them would be.

So the first to file would change how we do or not do business in this country. A concern that an established strategic partner may misappropriate ideas disclosed under NDA and generated it's own parallel first to file priority process in competition would discourage a company like mine from disclosing and dealing with it. It's in the most crucial stage of our

development.

There will be chilling effects on joint developments. Responses to RFPs may not be substantially informative. Substantive investors or prospective licensee's due diligence would not really take much place. Marketing communications would be different.

When I put myself in a position about thinking of first to file, I came to the conclusion that the history that happened at BI, Broadband Innovations, would not have been possible. This is probably what would have likely to have happened.

You can see a lot of first to file applications all right, but you see the conspicuous fact that Motorola is not here as an investor, probably because we wouldn't have been able to surpass the obstacle of communication about the technology, our concern from their potentially moving forward with some other solutions and the likely company failure.

Well, we have a lot of patents. Who would like it? Maybe a troll. The point is that this is fodder for trolls. In other words, the extra applications they would have had had probably no value for us, but quite a bit for somebody who wants to use the disclosure, maybe amend some claims or find ways to match it to something

else.

So the conclusion is that first to file would be very harmful, and what you've seen in my company's development wouldn't have happened I believe. It will result in a flood of shallow and race to the patent office type patents. It would encourage paper inventions that are untested. It would generate more work for the PTO and more fodder for trolls.

Under the first to file, innovators would have to invest R&D in non-infringing solutions, designing around patents that would have never issued under the current system. Now, that's not an insignificant burden on innovation, one that probably hasn't been adequately addressed and thought about.

In Europe or Japan when there is first to file, there's also a process of publication of an exam report. People can decide whether to pursue something later on. What we have done in this country in the statute is change one thing without really thinking about the consequence of having so many of those applications without a vetting of the process. The US PTO will examine all of them and will get something out of it, probably another 30 to 40 percent more applications.

Over more than a century, the American first

to invent system struck a systematic legal balance between the written disclosure and the enablement requirements and patentee's priority entitlement. It's a very delicate process, a very elaborate one which you all know from case law.

We are experts in how to deal with these issues today. Over the years we developed expertise in managing R&D projects, disclosure, engineering notebooks, a process that will go out the window. We will take years to learn how to operate and how to innovate and how to collaborate under the first to file.

Also R&D that now has some incentives being internally in the U.S. Because you have priority, if you can demonstrate due diligence and reduction to practice in the U.S., you get the entitlement. If you do it abroad, you don't.

Well, the first to file would basically take away these incentives from multinational companies. R&D will move more away. From the point of view of priority, you would lose that, and remember, priority is required for a lot of companies, and remember there's about 10 percent of the applications that probably would have lost more than a year or two years of priority.

So first to file is touted as the next big thing, but is it worth it? Thank you.

MS. MICHEL: Thank you, Ron. Those were excellent presentations. We very much appreciate it. I think we can see we have a top notch group of panelists here, and I appreciate their time coming and sharing their stories with us.

You all spoke about the importance of patents in raising venture capital. Talk about the difficulty that you face before you have that patent and you're working on the technology and developing it and trying to pursue that patent, no venture capital at that point, what do you do? Joe?

MR. KIANI: Actually that's a really good question. Before we filed our first patent on our technology, we did not even go to venture capitalists, so we raised our money from friends and family because we knew that the investors wanted to see something tangible, and they wanted to analyze it.

MS. MICHEL: And as panelists would like to address the question, just turn up your table tent, and we will call on you and keep the conversation going, and feel free to comment on anything that comes up that you would like to share.

How did you approach the patent system or the patent application process at that point? This must

have been a new experience for you to be thinking about patents. It's a fairly expensive process. What kinds of difficulties did you face in even thinking about pursuing a patent?

MR. KIANI: Well, I guess I'll turn my card up.

MS. MICHEL: I know Joe's had direct experience on this.

MR. KIANI: Well, one of, of course, the negatives of filing patents is the time it takes for the inventors to try to disclose their area to a patent attorney and file it. Another one is the expense of filing patents. I can't even imagine under the post-grant opposition world that's being talked about today what we would have done because at the time we filed our first two patents, literally our burn rate with $5,000 a month.

And filing the two patents cost us about $20-25,000 and we didn't have to then worry about expenses for awhile. In the post-grant opposition world, I think my costs would have been another $100,000 to 200,000 to potentially try to just defend my patents before they could issue, which meant I wouldn't have been able to talk to investors about raising money even more, even longer before doing that.

MS. MICHEL: I see. Jon?

DR. SODERSTROM: I just want to make two observations that build on comments Joe was making. You asked the question about talking to investors about intellectual property. That's actually fairly straight forward and simple. There is no conversation, because without intellectual property, there really is no basis to have a conversation because they're all about how high the fences can be built and how much freedom to operate do you have within that space.

Those two questions, if they're not the first two questions they ask, they're certainly the third and fourth questions they ask because that's all about protecting their investors so it's a prerequisite.

The second part of that that you asked is what do you do before that, and I think Joe's comment in terms of companies is straightforward. You beg, borrow and steal from anybody you can. One of the observations I'll make is that in the current research and development environment -- it used to be that there were ways that you could actually finance the maturation of an idea into something that would ultimately result in a useful product.

And that money, particularly right now in the current economic crisis that we're facing, is becoming extraordinarily scarce, and what is available is

extraordinarily expensive, and it's a problem that we're all going to have to face somewhere down the stream, because the current models that we've all followed, particularly in the life sciences and biotech, for investing in these development of these inventions and new products is pretty broken at this moment.

Everybody I talk to would concur in that. So I think that we're going to have to come up with some innovative new strategies for how we're going to get this done because friends and families might have been the place you went, but last time I looked their bank accounts shrunk.

MS. MICHEL: All right. Once you have that first patent application on file, how do the uncertainties surrounding the outcome of the application process affect your ability to raise capital? Can you raise capital with just an application on file? Tom?

MR. WOOLSTON: We weren't. But the world definitely changes when a patent issues because all of a sudden the rights are defined. There's a claim scope, and it took me from 1995 to '98 to have the first patent issue, and I had a license and was off and running within four weeks of issuance, so it was like magic for us.

The difference between a pending patent really

meant very little other than you had something on file that protected it, and you had a little liberty to go out and discuss things without NDAs because you had a placeholder.

MS. MICHEL: Ron?

DR. KATZNELSON: I think there was a balance between the process of getting NDAs in place with various players on the one hand and having something on file that was done.

The major value of having something on file was obviously that the NDA covered it, but we were still concerned about improvements, changes. Once you disclose a concept and you are still in the development, you haven't finished, and you don't have as many resources as the other guy who you hope will be your partner. You're very apprehensive about the process, about how fast will they come up with -- "Well, we can do something slightly different than race and go back and do the work."

There's an element of deterrence, and if you have the breadth and if you have some of these things in place and you have a non-disclosure that shows a little more, then the process is fine.

One of the strategies we've always assumed and used is to never disclose the claims. We disclose the

specification. We're also concerned about interference. One way to invoke inference is to copy one's claims. You automatically get interference in the Patent Office, so there was a challenge of how to do that. Not all claims were written or applied for initially too, so in some respects, the disclosure was the body that we were disclosing, not the claims.

MS. MICHEL: Okay. Jon?

DR. SODERSTROM: Just again a couple of quick observations. I think it varies by industry. In the area of life sciences in particular, we find that most everything that we license is in the form of a patent application, and that's after a lot of vetting, but the vetting is usually around the quality of the science.

So there's a lot of looking at hiring people to do due diligence that are essentially doing what the Patent Office does for a job, which is trying to see whether or not in their best opinion the claims are likely to issue as filed, and what the supporting data is. That's in life sciences.

Other fields, electronics information technology, *et cetera*, I find you don't even have a conversation without issued claims, and that's just as simple as that. So it mirrors exactly what the two gentleman, Tom and Ron, were saying in terms of the

difficulty of having the conversation, and part of the difficulty is you can't get a non-disclosure agreement in place.

MS. MICHEL: Okay. Does the backlog at the PTO then raise a concern in life sciences if you're able to have these conversations based on applications?

DR. SODERSTROM: The backlog is a concern no matter what because eventually you have to raise more money. While that's okay for the first round of investment, it's not going to be acceptable when you get into the institution, the big institutional investors, and so therefore they do want to see issued claims. They don't want to bet on it.

MS. MICHEL: What do you mean by big institution investors?

DR. SODERSTROM: I'm talking about the hedge funds, private equity funds, the large players that are managing billions of dollars as opposed to hundreds of millions.

DR. KATZNELSON: Trying to stay away from risk.

DR. SODERSTROM: Absolutely, absolutely.

MR. WOOLSTON: It doomed our company.

MS. MICHEL: The backlog at the PTO?

MR. WOOLSTON: Oh, yeah. Hindsight is 20/20 - but we look back now and our major competitors already

had a lot of momentum by 1998 by the time our patent was issued. It was filed in '95. Something I can kind of share with the panel is how compressed -- we were an internet technology -- just how compressed the business cycle was. It was probably a hundred year business cycle compressed into four years, right?

There's only four players left, and usually it takes a hundred years for industry to shake out like that. But, we were late, and we would have -- it would have taken billions and billions of dollars worth of capital, in hindsight, to overcome their first mover advantage that Silicon Valley had over us, but we did it anyway because we didn't have 20/20 hindsight.

DR. SODERSTROM: But it's important to recognize, that the life cycles for different industries are vastly different.

MR. WOOLSTON: No question.

DR. SODERSTROM: If you look for life sciences, even in something that's technology focused like Joe's, it's still fairly long to get the thing into the marketplace versus 18 to 24 months which you see in the electronics and IT industries, so I think you have to recognize that there's a different business model in play.

MR. WOOLSTON: All technology has a shelf life

too. It's a diminishing asset. I mean, people are on to the next big thing and they're innovating around it so there's a finite life span of technology, period, patents or no patents.

MR. IRIZARRY: Tom, Jon mentioned in the area of life sciences, they get licenses on patent applications - you mentioned you have to wait to get the patent, and then within four weeks you have your first license or something like that.

MR. WOOLSTON: Right.

MR. IRIZARRY: What was the vetting process? Did you just show up and say we have a patent and they took your word for it or was there also due diligence work done and who did that due diligence in the field such as yours, in the electronic Internet space?

MR. WOOLSTON: Well, we were in a pretty crazy time that you could take companies public like pets.com on just a concept and raise billions of dollars. So we had an interference proceeding with Priceline.com, which is actually one of your questions -- "What do you do with other people's inventions?" and we filed an interference proceeding to basically say, Well, we want to be able to practice our own invention, you have basically told the Patent Office, well narrow them up, get them off of us, we're superior in time, superior in

rank. That's when the dot.com lightening struck us, and we raised $12 million and got the thing rolling.

Now, we were late and we couldn't overcome the momentum, but it was only the patent that did it for us. I've heard from some of the internet companies that there's too many patents. There were only 12 patents that anybody cared about. I mean, we knew them all. It was open markets. It was open markets. Those are the only ones that had any teeth to them. Everybody else had very late filing dates and were going to have very narrow enforceability, so it wasn't a patent thicket as some people make it out to be.

MS. MICHEL: Interesting. Okay. What was your process when you were in the very early stages and thinking about applying for a patent and then applying for the patent and assessing the patent landscape and what you needed to design around, and were you able to identify those patents, design around them? How did you deal with the fact that perhaps there were applications and not issued patents out there? Joe, I know you've thought about this.

MR. KIANI: Yes. When I first started Masimo, in those days the Internet wasn't there, so I spent a lot of time at Los Angeles public library.

MS. MICHEL: You yourself?

MR. KIANI: Me myself to go through -- those days they had the -- I can't remember what they called the films -- microfiche, thank you, microfiche to see all of the other related patents to what I was thinking of doing, and the reason that was important to us wasn't just because, "Well, are we going to file a patent or not?" I was trying to see if my invention was important enough to start my company or not.

So I spent a lot of time doing that, and before we filed our initial patents, we even had our patent attorneys, Knobbe Martens, to do a check for us to see, Well, is there anything like this, if I missed it.

So I did that early on. I don't do that anymore, but we, throughout many years, have watched and monitored companies as well as titles and interesting subjects to make sure we understand what's getting issued and what's out there.

MS. MICHEL: Okay. Ron and then Tom?

DR. KATZNELSON: To me the initial effort for the technology we developed was to try to find a different way to decode a whole bunch of signals simultaneously as opposed to a single channel at a time, decoding what people view, so it had to be backward compatible to existing encoding methods out there. So,

obviously there had to be a very careful analysis of the patents of these encoders and decoders, and to find a way that we do it totally differently and a way that does a whole bunch of channels instead of just one, but also in a way that doesn't read on the claim so the claims won't read on that.

That is the virtue of a design-around, because it actually produces a potentially different solution for a similar problem and encourages new inventions. We were fortunate to be so different and so differently approaching the problem that we felt pretty comfortable in that process, but going forward beyond that, there's always a challenge of trying to look at the intellectual property of others. What do you do, especially in the internet days when every engineer in a company has internet access and the PTO database is out for free. I mean, people would just look at these patents and google stuff out.

You cannot avoid, you cannot prevent your engineers from looking at these things, and so I've always had a concern with treble damages issues. Do I have a record of all my engineers having seen something, and I don't know about it? So we had a policy that essentially engineers don't look at claims. They only looked at disclosures, so they have to understand the

difference between the two. They're not attorneys.

So once you have a written policy and that's something I recommended, it may not be a solution but it would be some ways to insulate engineers from having an institutional ability to look at claims, and so when they look at disclosures, they learn what the patent teaches but they don't know what it claims.

MR. WOOLSTON: Our industry is a little different because everybody was getting capitalized and grabbing as much space as they could as quickly as they could. We were kind of looking forward to the day we were going to get sued because that would mean we were successful, and it was like paying your taxes. It's like it would have been great to have income and pay corporate income taxes and been one of the survivors.

That's the way the whole industry shook out. It was get big, get fast, dominate a category, and all this intellectual property stuff is going to sort out. It's worked very effectively for the dominant players, but that doesn't mean come to Washington and complain that the patent system is broken. It's part of the life cycle, and it's something people need to deal with.

I mean, I look at the example of Google with the books, the indexing all the books. It's like, okay, through brut force, they indexed the books, and then the

IP copyrights were going to sort out, and it sorted out. Congratulations, Google, you did it, but that doesn't mean the copyright system needs to be thrown out.

It doesn't mean that authors don't need to get paid, and I feel the same way about the patent system. It's okay, you survived. There are a lot of broken companies around. To me the irony of some of this debate is people complain about the trolls and the aggregators, and I'm not even sure what some of these definitions are, but isn't part of this result from the low value of intellectual property that creates the opportunity to aggregate?

I mean, you wouldn't need to aggregate a strong right. You would aggregate weak rights, and so it's part of the unintended consequences you're having now. It's like, well, if patent rights are stronger, there would be more ability to raise capital, more ability for companies to start, to get a product in the market, maybe more M&A work but less patent suits. You only bring a patent suit when you're losing in the marketplace.

When you have a competitor enter the marketplace and you have price erosion or a knock-off, that's when you bring a patent suit. You don't bring a patent suit when you're Microsoft and you're dominating the

marketplace, and you have something much better than a patent. You have market power. That's a lot better than a patent, and so almost by definition a patent is enforced when you are on the down slope of the market share.

MR. KIANI: One of the comments I wanted to make, Suzanne, is I think a lot of people think about patents as forever. We understand -- when you think about it, obviously it's only 20 years, so I think going back to -- the backlog of the Patent Office, well it eats into that life you're supposed to enjoy your monopoly that's legally given to you. But I think what's more important is that going back to understanding other company's patents and respecting other company's patents.

We believe, first of all, that if you find a valid patent out there, either we don't practice it or we go try to buy it or license it. We don't think every bright idea has to be in our product if we can't do one of those two things, so one of, I think, the misnomers is it's so hard to understand what's out there and then you get stopped.

Well, sometimes maybe you do miss something. In fact when we sued our main competitor, they counter-sued us back with ten patents. We were able to defeat

nine out of those ten patents. The one patent that was still standing, we just said, You know what, we're just going to take it out of our product. I think what's important about that, again talking about some of the things that are being talked about today with the Patent Bill, they're talking about apportionment of damages.

And I hear the story that, Oh, well there's some small innovation part of a much bigger thing like let's say the font, some new font in Microsoft Office and somehow they're held hostage for this one little invention, a half a percent of a lot of money.

First of all, the current system allows you to take that out, and under the *Georgia Pacific* factors, you potentially only have to pay the damages on the amount of money it took you to get it out, which is maybe $10,000 or $50,000. The only reason I bring that up is because I think when we're looking at our current patent system, although it's not perfect, it is -- it is much better than anyplace else.

And while we look to improve it, what we shouldn't do is to follow a practice done by other countries that we know didn't get good results. This whole -- you mentioned the first to file versus first to invent. Well, Europe has done this, this whole post-grant opposition. Well, Europe has done that.

Well, they're not better off than us in innovating so I hope that helps.

MS. MICHEL: I would like to talk about the next stage of the process after you've come up with the initial invention and filed that first patent application, and you continue development and how important it is to continue that development before you can sell, license or commercialize your technology and the role of the IP in that stage of the process.

And I know, Ron, you were talking about the importance of continuations at that point. Could you spin that out for us a little bit?

DR. KATZNELSON: Well, there are several aspects of the importance of that. One is the evolving law of claim construction. For example the doctrine of equivalents used to confer quite a bit of breadth to claims at some point. After *Festo* and after *Johnson & Johnson*, there has been an erosion of that through a judicial process where if you didn't claim literally some of the variance that you may have disclosed, you actually dedicated to the public.

So a lot of times you can't really sit there and spend thousands of dollars putting together all the possible claims that are possible with your disclosure where there's clearly a lot of invented material, but

you're focusing on the claims that you know you will need in the next two or three years, and you put aside the others.

So there comes a time when you find other features of the invention that turn out to be important and worthy of protection, and then at that point, you want to file additional claims so the continuation process has to do with the breadth of the claims. In my paper, I show that the breadth of claims over time erodes, not just because of the judicial process but also because of life cycle of products.

They're shorter in life span, and in many cases claims that might have been good ten years ago for some products of yours may not be good at all, even though the disclosure has elements in it that can still survive with new claims.

So that is part of the value of the continuation process, and in some respect, the misunderstanding of the term, and they often call it rework, it's as if you come back to the Patent Office and you want to prosecute these claims again. That's one of the most misunderstood process. If you actually study the claims that people bring, not only request for continued examination, not an RCSE, but on a continuation, they're whole new claims.

A lot of times they're different. They're broader. They're directed at different elements, and so to characterize this thing as rework does quite a bit of injustice to the process. So claim coverage is important and continuation is that step.

CIP is an additional element. We have in this country an incentive to disclose improvements which do not exist in other countries. You cannot file a CIP in Europe, for example, in a way that is similar to this country. Your own priority application may count against you as prior art where here it's not, but the point is that there's an element here that has worked for over a hundred years, and we sure hope it's not going to change.

MR. ADKINSON: Joe?

MR. KIANI: I wanted to add on the whole continuation, one of the thing's Ron said earlier is he teaches people to look at claims and not specification. We actually do the opposite because of the continuation. When we look at our own patents as well as others, we look at the specification, because we think continuation is a very important practice, and if you've specified it, you're able to eventually build defenses.

I liken it to if you've got a big land tract and you're going to build fences around your land, you

can't do it overnight. It takes years of investment to slowly build that fence and without the continuation practice, the value of filing patents is to me almost zero because there's no way the initial patent you filed with the claims you filed will end up protecting the invention you disclosed.

MS. MICHEL: Do you experience the downside of that though in the sense if you want to avoid someone else's patents and you see a specification out there, you don't know what claims might emerge from that patent later?

MR. KIANI: Well, if I could just answer that, we don't think of it as a downside. We actually think we have to do our homework. That's why I said initially we don't look at claims. We look at the specification, and unless we can see that specification part in a prior art, whether it's a product, whether it's a patent or some public disclosure, we stay away from it.

MR. WOOLSTON: We had like 12 restriction requirements on our prosecution. Do you know what that is?

MS. MICHEL: Yeah, yeah. Wow, that's a lot.

MR. WOOLSTON: And that forces you to file a division.

MS. MICHEL: A divisional?

DR. KATZNELSON: Divisional.

MR. WOOLSTON: I don't think you can address one without addressing the other. Abolish the practice, I mean just take it out of PTO's practice if they can enforce -- divisional. You can't have one without the other. You can't let the PTO force divisional requirements and then limit the number of continuations you can file because that's out of your hands.

MS. MICHEL: Okay. All right. Ron?

DR. KATZNELSON: I think as said earlier here, the issue of notice, whether the claims are necessary to give proper notice or whether the specification should suffice, in a lot of cases, as you said, the spec really tells you what could be claimed. In fact, so much so that the Patent Office has in the MPEP a requirement in the search by examiner to not just look at what the claims are, to look at what the spec -- what claims may be brought in view of the spec.

So there's an understanding, a mechanical understanding of the relationship between possible claims and a spec that apparently the PTO understands. When you file an accelerated examination with the PTO, your search report that you have to submit has that requirement that you not only look at the claims -- that the search that you make is not solely for the claims

you're making but also to match your disclosure as to what may be claimed.

If we know how to do that at the PTO, and we know how to do it when we file accelerated examination, I don't understand why we wouldn't be able to do what you're saying. It's true, that should be viably possible, so I think there's quite a bit of notice in the spec itself, and when I said we don't look at the claims, the engineers didn't look at the claims because of treble damages issue, willfulness issue. They look at the spec only for purposes of design.

MR. WOOLSTON: I think there is a statutory provision when 18 month from its filing date that you can relate damages back to the publication date if the claim eventually issues substantially the same.

MS. MICHEL: Okay. Thanks.

MR. IRIZARRY: Once a patent issues and you're a young entrepreneur, sole inventor, many times you enter into agreements with larger companies, your main competitors in the marketplace, all those -- what factors do you take into consideration under a decision to go at it alone and make your own company or to license your technology to others or whether to sue or sell the patent to others?

MR. WOOLSTON: Well, in our case because the

business cycle was so compressed when you're looking at green field all your motives are capitalize and build. You have a green field, but as competitors rapidly move into your field, your business decisions concerning your intellectual property start changing -- which is, oh, gee, well, maybe licensing over here you can find a niche, so we try to build in a niche or try to license here and build over here where there is a green field, try to innovate something else.

I think Joe can attest to the fact that you can't stand still on your innovations. He's constantly innovating, so just the way the market shakes out, that depends on how you treat intellectual property rights at least in my view.

MS. MICHEL: Ron?

DR. KATZNELSON: Well, after *eBay*, even though the ruling in *eBay* may not have expressly commanded that one looks at whether it's a practicing or non-practicing entity to decide whether they're entitled to enjoin the infringer or not. But the reality is, and we've seen it last time that there's -- courts understand the *eBay* decision to actually mean that. That is if you're a licensor and do not practice, your ability today to have a meaningful power in the negotiation is greatly diminished, so much so that it actually changed the

business model for some of the companies -- I'm looking now at Bi-level Technologies because to the extent that I ever thought to be efficient I would go out and license them under patents, now it's clear to me that I ought to be practicing in a way that the licenses are not under the patent but under some OEM arrangement, and there's some tangible element beyond the patent that's conveyed to the customer.

It means that I now have to look at a different structure of the business that requires additional resources to put together a different model, not just a licensing of the patents, but actually a development model, the more people, more investments.

So the *eBay* decision actually caused us to look at the way we do business in a longer path than we thought we would have been able to do primarily because we envision a low ability to interest licensees with just the patent. It's hard to negotiate an arrangement when you know that you're not going to be able to enjoin them if they infringe.

MS. MICHEL: Okay. Jon?

DR. SODERSTROM: Well, I want to build on something that Thomas talked about a few minutes ago, which is from a university standpoint, we're not going to practice our patents. We have to license so the only

question is: Does the company exist or not? From a risk standpoint, you certainly would like to license it to an existing company, to the extent that they're willing to commit that they're actually going to develop it.

What that tells you, and this gets back to the question of weak versus strong patents, from a university standpoint we have to go after strong patents. Weak patents have no basis. Nobody is going to license them and you're not going to be able to raise venture capital if you're going to have to start a company.

So what we've done is, this essentially is very Darwinian in a sense, you have to get very creative: How strong a patent do you think you're going to develop, and then the question is: How long are you willing to develop it for before it's actually going to be licensed either to a new company for which you've gone out and raised money. By the way just before the crash it was taking 18 to 24 months to raise money to start a new company anyway? Now, it's anybody's guess.

But again it all goes to: What are we really taking to the Patent Office in the first place? It's going to be the stronger possible case we can make for products, so you obviously -- from our standpoint you

want to go for composition of matter. If that's not possible you want to go for the next best thing, but it's all about getting the highest quality patent that will withstand challenge.

We have to believe that over time, because universities don't -- we don't have unlimited resources to file patents in the first place, that you're going to see a decrease but you're going to see an increase in patent quality in terms of breadth and depth of claims and in terms of who actually is practicing those.

MS. MICHEL: Joe, could you speak to your experience in deciding to build your own company rather than sell the technology?

MR. KIANI: Yes, I would be happy to. I think Masimo's story is a lot like many other companies where we actually weren't trying to build our own company, but we were forced to. As soon as we had this invention and we could demonstrate that it worked, we set up meetings with the four leading companies in our industry thinking we would license it to them. It would get it out to the market faster, and then we could take that money and do other things like hemoglobin -- that we finally did.

Unfortunately at least three out of the four companies -- well, all of them rejected us. Initially they wanted to do it. One of them even went to the 11th

hour with an agreement, but then was willing to pay us money but was going to put our technology on the shelf, and then eventually all of them took the opportunity. They met with us earlier to begin working on breaking the formula as well, so unfortunately I don't have good advice for my friend here.

It's a tough world to go to these companies and try to work with them. You're actually better off to go with companies that probably aren't competing in the area you're trying to sell your patent to because they all try to get around your patents. They all try to do it without you.

MS. MICHEL: Okay. All right.

MR. IRIZARRY: Do you find that in the last few years there have been more awareness and probably new business models dealing with marketing of patents, whether aggregators or non-practicing entities -- how do you see the role of those new business models affecting or improving or enhancing or detracting from the start ups and small businesses in maximizing the value of your patents?

Ron? Go ahead. Tom?

MR. WOOLSTON: Well, I'm looking at university technology now to license and try to build and capitalize the business, and if it's my own money and

time, I'm a little more free with it, but when I take other people's money as an investor, I feel pretty committed to telling them what the company is going to do and why we're going to do it.

And I feel if you're building a business around a patented technology now and you're out approaching people to capitalize it, you're almost false advertising because the fact is under 35 U.S.C. 134, in the '99 amendments, you have less rights to defend an issued patent then you do a pending patent.

Under the *Zurich* decision, which gave deference to the fact finder of the PTO, dovetailed with the amendments in '99 to 35 U.S.C. 134, Section 141 and Section 145. In a patent reexamination, the office gives deference to their fact findings, and there can be legitimate disagreements on the fact findings, and that deference is enough to tip it the office's way to invalidate the patent. You can only go to the Court of Appeals, and they get deference in their fact finding. So, it has tipped validity toward the Patent Office that an inventor cannot fight for their invention. I have a problem with that because if you're out raising money on the strength of a patent saying, "Well, we can commercialize this and there's an expectation that if we get it to market, we can have an

exclusive right or some market exclusivity," that is part of the recipe for making the commitment of time, money and resources into it this. But the reality is if somebody else can beat you to market, get you in a reexamination, you have very limited rights to defend your patent at PTO.

They get deference. The only reason you're in reexamination is because a patent has become commercially important. People aren't doing it for the heck of it, so you have a commercially important invention. You're in the marketplace. Nine times out of ten you'll have very sophisticated opposing parties, and they can make very good fact-based arguments to the office.

The office can just adopt them. The office has deference to those decisions and you have no -- as a patent owner, you have no ability to rebut that with trial evidence or anything else. You're up on the administrative record, and chances are very likely that the CAFC is going to affirm due to the deference that the office has given on its fact finding.

MS. MICHEL: Are your concerns the same for both *ex parte* and *inter partes* reexamination? How do those play out differently from your perspective?

MR. WOOLSTON: *Ex parte*, I was going to do a

slide here, the Constitutionally anomaly, the black hole because *ex parte*, the way we saw *ex parte*, *ex parte* swallows everything. It swallows *inter partes*. You can go through an *inter partes* and go back through an *ex parte*. You can go through first window and go into an *ex parte*. You can go through the Supreme Court and go into an *ex parte*.

MS. MICHEL: You mean that a challenger to a patent can, for instance, go through *inter partes*?

THE WITNESS: There's no estoppel in *ex parte* so you can go all the way through the *inter partes*, lose and then say, well, let's take all the arguments again, throw all the arguments again into *ex parte* and let the Patent Office do it all over again.

MS. MICHEL: So the challenger to the patent can lose in the inter partes and then put the patent into reexamination again through an *ex parte* proceeding?

MR. WOOLSTON: Absolutely.

MS. MICHEL: That's the concern?

DR. KATZNELSON: Anonymously.

MR. WOOLSTON: There's no collateral estoppel. There's no *res judicata*. There's no finality. It just goes forever and forever, and there's no time lines on the office to do anything so you see them taking six, seven years.

I don't know how you go out and raise money with a straight face on a technology that is covered by a U.S. patent when we put the time, money and energy into the commercializing this, that a faster better capitalized competitor isn't going to move into your market and throw you into re-exam, and then your whole premise for raising money that we had a U.S. patent that would give us some protection is -- I feel like I'm out false advertising what a U.S. patent is to people if you're out trying to capitalize a company.

MS. MICHEL: And when you are out trying to capitalize and you have your patent in re-exam, how does that affect your ability to raise capital?

DR. SODERSTROM: It shuts it down. There is no discussion at that point.

MS. MICHEL: Ron?

DR. KATZNELSON: I thought Armando was asking a question related to the packaging of patents and the market, almost the secondary market for patents and how important that is, and I want to address that. I think it's a very important function to be able to aggregate patents and to get them.

Part of the considerations investors make when they make an investment in a company like mine, okay, let's take a look at your patents, but you know a lot of

people fail and what are we going to be left with? What are the assets going to be looking like at the time? We're going to put all this money in here, there's risk.

They then look at what's their ability to actually monetize some of these patents so the valuation of a company often is done in two different tracks: One is your business model, what you're pushing, what you're saying you're going to do. The other is: Who is it good for? Who else might be interested in this patent should he fail? How much could we get out of this?

So the value of the assets, not through your own activity, that means secondary market valuation is an incredibly important gate for investors to make an investment in your company. So to me, if that secondary market disappears or is made essentially ineffective, it shuts down potential investors and primary effort patentee.

And even in an operating company, in my case the banks would look at -- we would like to have secured assets. I mean, sometimes even a loan’s security by the assets are going to be chilled by the fact that these assets, in fact, will be known not to be worth a lot.

So, if you actually discourage the property

transfer and if you discourage secondary market in patents, you actually hurt primary markets of patents, and to me those are inseparable. I guess my point was there wouldn't be aggregators but for the fact the rights are weak right now.

MR. IRIZARRY: Joe?

MR. KIANI: I'm sorry.

DR. SODERSTROM: I will agree with Ron that in certain areas that's true. In life sciences, the decisions tend to be binary. It either works or it doesn't, and there is no secondary market because the technology either has been proven to work in human clinical trials or whatever the FDA requires or it doesn't.

So I would not make a broad generalization that secondary markets are great everywhere. The reason universities have a little bit of a problem with this is I think that we have to ask ourselves why are we patenting in the first place, and part of the reason that we're patenting is to try to draw forth the investment capital to take the technology into the marketplace.

If we're solely doing it so it can be rolled up by some non-practicing patent aggregator, the question we're really asking is: Well, why are you doing it?

Well, the only reason you could be doing it, it would seem to me is that you think you're going to generate revenue, and at that point aren't we just creating some sort of innovation tax?

And I don't really think that universities should be in that business so that's why we've taken a fairly strong stand against doing that. I'm not saying that there shouldn't be. I'm just saying that universities shouldn't participate.

MR. KIANI: The point I wanted to make is just because you have patents doesn't mean you're going to succeed. You have to succeed commercially and patents are helpful for an investor to decide to invest because they know you can use it as a great equalizer. The patents helped us get to a commercialization mode where we could eventually start competing properly.

I can tell you I know of numerous investors after raising $90 million, I'm sorry, Ron, but they don't look at the secondary value of patents. I've seen companies invest $50 million into them, $100 million into them, and when it doesn't work, the patents are worthless, and they're not looking at that.

They pick them up for 50 grand or a hundred grand. What's wrong with the aggregators of patents?

They take a failed company's patents, and then they start holding up companies that are still trying to make it with the threat of injunction. Fortunately, with *eBay* – I'm sorry, but fortunately with *eBay* that threat of injunction is gone and you can't be held up as badly as before but then there could be damages.

So I'm sorry, I disagree that there's some secondary value for a patent that investors look at. They don't.

MS. MICHEL: We have been talking about strong patents and weak patents. I would like to understand better what you mean by that in the sense of the desire to aggregate weak patents. Are those patents weak because they are of questionable validity? Are they weak because the ability to get an injunction is lessened, and what is driving that kind of aggregation? Tom, you've used that term and talked about aggregators. I just want to impact that a little bit.

MR. WOOLSTON: Well, look, small companies don't stifle innovation, right. Big companies stifle innovation because they've got market share and market power and they don't need to innovate to maintain their profit margins so it's always the challenger to the market leader that's going to be the innovator because it has to be better, faster and cheaper than an existing

property or why bother doing it, patent or no patent, right?

I had never filed for a patent or been involved in any patent in any way that I didn't look to build, and you've got to see some space in the marketplace to build, and if there isn't space in the marketplace, then you're not going to make the business decisions to commit the resources and the time and energy and effort to pursue it.

I have a problem with trying to put into the code this kind of "my commercial motives are better than somebody else's commercial motives" and I don't think you can do that by statute. This is -- a patent is an assignable right. It can be conveyed and so what if they go buy them for $50,000 from a failed enterprise?

That's $50,000 for some creditor of a company. They're obviously buying them for economic reasons. They're not buying them for non-economic reasons. They're buying an asset because they think they can better capitalize on the asset, and so I just sort of have a problem trying to figure out how you're going to put my commercial motives are better than your commercial motives into the code.

MS. MICHEL: Joe?

MR. KIANI: I'm sorry, I do agree that if the

end goal is to make money, maybe you can't. But, if the end goal of patents was to help foster innovation, foster economic growth, then I think that type of a business model is actually hurting the patent system and innovation and what it was meant to do.

MS. MICHEL: We have a wealth of talent and knowledge here and could continue this conversation for a very long time. We're about out of time if any of the panelists have anything to say.

MR. WOOLSTON: Maybe you can fix it with a tax code. Maybe they treat owners with the different provisions in the tax code or something.

DR. SODERSTROM: Yeah, I hate to mix motives. I mean, I don't want to see the patent -- I'm a strong believer in the law of unintended consequences, and I think that messing around in the patent system which has withstood a lot of -- has proven itself over the years, I think we have to be extraordinarily cautious how we change this, and I would hate to see us jump into it simply because people don't like business models.

MR. WOOLSTON: But it's already been changed. I mean, where's our industrial base in this country?

DR. SODERSTROM: It's gone. It's being changed in lots of different ways both by the judicial system and the Congressional but I still urge caution no matter

what.

MS. MICHEL: With that, we will close this panel, and the FTC will continue to take comments and accept comments through May 15th, so if there's a point that we didn't get to, we would love to hear from you in writing.

Also staff here is always willing to talk if you have thoughts. Thanks very much and we'll come back in 15 minutes with a panel on the IT sector.

(Whereupon, there was a brief recess.)

PANEL 2: THE IT AND ELECTRONICS INDUSTRIES.

MODERATORS:

SUZANNE MICHEL, FTC

BILL ADKINSON, FTC

PANELISTS:

SARAH T. HARRIS, Vice President and Chief Counsel Intellectual Property, AOL LLC

NOREEN KRALL, Vice President & Chief IP Counsel, Intellectual Property Law, Sun Microsystems, Inc.

ALEXANDER H. ROGERS, Senior Vice President and Legal Counsel, Qualcomm, Inc.

MATTHEW M. SARBORARIA, Senior Patent Counsel, Oracle Corp.

RUSS SLIFER, Chief Patent Counsel, Micron Technology, Inc.

JOHN THORNE, Senior Vice President and Deputy General Counsel, Verizon Communications, Inc.

MR. ADKINSON: We're going to start up again. I want to thank you all for joining our second panel of the day. We're going to hear from representatives of the IT and electronics industries who are going to offer a different set of perspectives on the operation of IP and technology markets and whether those markets operate efficiently or transparently and also what can be done to improve them.

In particular they'll address licensing practices and the use of patents and uncertainty in the patent system's notice function.

We have a terrific panel of industry leaders whose distinguished bios are on the web site. I'll introduce them very briefly. I guess first I'll briefly introduce myself. I'm Bill Adkinson. I'm an attorney in the General Counsel's Office and working with Suzanne on this project.

Our panelists are Sarah Harris, who is Vice President and Chief Counsel for Intellectual Property for AOL. She is responsible for establishing AOL's intellectual property policies and strategies and managing AOL's intellectual property issues including those related to patent litigation, patent prosecution and copyrights, trademarks and domain names.

Prior to joining AOL Ms. Harris was the Chief Intellectual Property Counsel at Cooper Industries and she also held several different IP related roles at Hewlett-Packard and Compaq.

Noreen Krall is Vice President and the Chief IP Counsel for Intellectual Property Law for Sun Microsystems. Ms. Krall directs Sun's intellectual property law function and provides legal counsel regarding all facets of Sun's intellectual property assets, and she leads

Sun's management of intellectual property law policy issues. In particular, she is responsible for the management of Sun's patent and trademark portfolios and for managing all commercial and intellectual property litigation for Sun.

Then we have Alex Rogers who is the Senior Vice President and Legal Counsel for Qualcomm. He is the head of Qualcomm's litigation group and has managed intellectual property and commercial litigation matters for the company since joining in January 2001. Previously he was a partner with Gray, Cary, Ware & Friedenrich, now DLA Piper.

Then we also have Matt Sarboraria who is Senior Patent Counsel at Oracle. His responsibilities cover all areas of patent practice including patent litigation, licensing, procurement and patent related due diligence in mergers and acquisitions. His litigation experience includes cases involving database and application software, semiconductors, computer networking and telecommunications equipment.

We also have Russ Slifer who is the Chief Patent Counsel for Micron Technology which is based in Boise, Idaho. His responsibilities include managing the company's patent portfolio and advising company management regarding various intellectual property and

related patent issues. Prior to joining Micron, Mr. Slifer was in private practice in Minnesota specializing in IP matters.

Finally, we have John Thorne, who is Senior Vice President and Deputy General Counsel at Verizon Communications where he works on antitrust, intellectual property, privacy, merger review and strategic initiatives. He's also an adjunct faculty member at Columbia Law School and the Georgetown University Law Center.

Competition lawyers in the room will know that he's won three landmark antitrust cases in the Supreme Court over the last ten years: Bell Atlantic against Twombly, Verizon against Trinko, and NYNEX against Discon.

His intellectual property group was named one of the five best intellectual property practices in the world by Global Council Awards 2008. Mr. Thorne is co-author of principle academic treatises on telecommunications law and has published and spoken widely. I'm also reliably informed that he is the named inventor on one U.S. patent for disappearing e-mail.

MS. MICHEL: Thanks, Bill. I would like to start out with just a broad question to allow each of

our panelists to introduce their companies and the role that patents play in their companies. Sarah?

MS. HARRIS: Thank you for having me. I'm very honored to be a member of this panel with my distinguished colleagues.

As most of you know, AOL is a subscriber-based e-mail internet company. That's not exactly all we are anymore. Actually, we have the largest ad network in the country, if not the world, and we also produce more content on the web that's viewed by more users than any other company.

So as a consequence, we have a lot of moving parts going on, but one of the most important roles that patents play for us is -- we use it to encourage innovation, and our company values our patents as significant assets. When we're considering our uses of them, there's not really a primary purpose. We look at all different avenues depending on the situation.

We have about 500 patents. We have 15 active patent litigations that are primarily by non-practicing entities, so we have a very active patent docket right now.

MS. MICHEL: Noreen?

MS. KRALL: Yes, thank you. Good morning, good afternoon, everyone, and thank you for inviting me. Sun

Microsystems is an industry leading global networking company that develops, manufactures and commercializes computer hardware, microprocessor technology, software and related services. Sun has over $13 billion in annual revenue across virtually every computer market including telecommunications, financial services, manufacturing, retail, government, healthcare and even consumer electronics.

Sun reinvests between 15 and 20 percent of its annual revenues back into R&D annually. This investment as a percentage of revenues is one of the largest in the tech industry. As a result, this has created a vast portfolio of IP assets, and patents play a key role in our IP strategy.

The primary role of Sun's patents is to drive and promote greater adoption of our products and technologies and to expand the Sun technological footprint in the marketplace.

MS. MICHEL: Thank you. Matt?

MR. SARBORARIA: Good morning, and thank you to the Commission for hosting this important series of hearings. It's a pleasure to be here. Oracle is the world's largest enterprise software company. That means we develop and sell the software that enables businesses to run their business from the relational database

software used for storing data to middleware, software which provides the infrastructure for retrieving data from a database and interacting with application programs to the application programs that businesses use to run their day-to-day operations, things like human resources, payroll, accounting, supply chain management, customer relationship management and on and on.

We employ over 80,000 people worldwide. More than 20,000 of those employees are in research and development. We invest over $2 billion annually in research and development, and like many companies in the technology industry, a substantial portion of the value of our company lies in the intellectual property that we generate, and so we rely on a mix of protections for our investment in that intellectual property.

Patents are certainly a part of that mix. We also rely heavily on trade secret protection as a software company for our proprietary source code and copyright protection as well. We file over 300 patent applications a year, and we have a portfolio of over 2,000 active patents worldwide, so we have a very strong interest as a user of the patent system in a well functioning, well balanced patent system.

In recent years, we have also seen a dramatic uptick in patent litigation. The first 23 years of our

company from 1977, founding of the company in 1977 to the year 2000, we hadn't been involved in a single patent litigation.

Since then we've had over 20, and virtually all of those cases have been brought by non-practicing entities, so we do see a need for reform of the patent law to address some of those problems.

MS. MICHEL: Alex?

MR. ROGERS: Thank you very much for having me. I appreciate it, Suzanne and Bill. Thank you for that introduction.

Qualcomm is a semiconductor and software company, in part, and a licensing company in part, and we have other businesses. We are actually the largest semiconductor manufacturer for wireless in the world. We are the largest wireless semiconductor company in the world, but we actually consider ourselves to be a technology transfer company.

Qualcomm was founded by Irwin Jacobs in 1985, and his idea for the company was to look for new ideas to develop and essentially get out into the market, and it was funded -- Qualcomm originally was funded through patent licensing. The early Qualcomm patents, last I checked, have been noted as among the top ten most cited patents in the world, and so as a result

of our start as a business trying to get new technology into the market, the licensing part of our business has been ongoing and ultimately very successful.

We have over 160 licensees. We have approximately 7,000 issued patents, approximately 50,000 issued patents and pending applications around the world. We spend over 20 percent of our budget on R&D. We've done that for years. That's an enormous amount of R&D spending. It's well over half of our licensing revenue.

As a product company and as a licensing company, we see both sides of the patent reform issue that's been going on, certainly both sides of the issue that have been presented in these hearings.

We see the patent system as not necessarily being perfect, but we don't see it in crisis, and we like some of the other commentators here are very concerned about unintended consequences, and we would like to make sure that different views be considered and any form of reform be taken very slowly.

MS. MICHEL: Okay. Thank you. Russ?

MR. SLIFER: Thank you to the Commission for inviting me to participate today. Micron Technology is a semiconductor manufacturing company. In the last 30 years since the start of the company, we've gone from a

small start-up company to one of the world's leading innovators in advanced memory solutions. We have R&D operations based in Boise, Idaho, with manufacturing in Boise, Utah and Virginia. We manufacture advanced DRAM, flash, and imager chips.

Micron invests a significant amount of money in R&D every year, and that has led to a U.S. patent portfolio in excess of 18,000 patents. We are annually ranked among the top companies in number of patents, but, in addition, we're also ranked consistently by third parties of having one of the highest quality and strength portfolio in the semiconductor industry.

Micron has historically used its patent portfolio to prevent copying of our innovations and provide freedom of operation. Although we often use our IP to advance business transactions, our portfolio was not developed with the strategic plan of monetizing through licensing or litigation.

Micron continues to invest significant amounts of resources into this large patent portfolio to provide freedom of manufacturing so that we can provide products to consumers and jobs for our employees.

As detailed in the Commission's 2003 report, Micron continues to believe that the primary drive for innovation at least in our industry is competition. We

have seen a significant increase in patent license requests and patent litigation, particularly by non-practicing entities, that drain our economic and executive resources that could be used better for Micron's operations and R&D.

Thank you.

MS. MICHEL: Okay. John?

MR. THORNE: I would like to start, and I don't want to go on too long, but I could, appreciating the FTC's holding these hearings. It is a good time to have somebody with a consumer's point of view looking at the changes that have occurred since your 2003 report.

We have seen an explosion in the number of patents issued, an explosion in the number of patents being enforced, an explosion in the number of patents being sold on the secondary markets. I anticipate with the current financial crisis that companies, big companies, the Microns, the Suns, maybe not you particularly, are going to be selling even more of their patents because they can and so it's a way to raise money.

As was mentioned in the first panel, Congress is looking into some serious reforms. I think the more important reforms are likely to come through the courts, and you can see that, for example, as a by-product of

the work the FTC did in its 2003 report. I'll just give a couple examples.

When the Federal Trade Commission urged a more thoughtful application of the test for obviousness, that was followed up pretty quickly by the Supreme Court's embracing those suggestions in the *KSR* decision. The FTC found in its 2003 report that real world non practicing entities were using injunctions not to stop a company but as additional leverage in licensing bargains, and the FTC report was cited by Justice Kennedy's concurring opinion, which was what I understood, in the *eBay* case.

As Alex knows, the FTC found that patent hold-up can arise in standard setting organizations, and the Third Circuit then issued a key standard setting decision that repeatedly recited both FTC's and DO official speeches, so it's a good time for the FTC to look at this again, and you've got a lot of ability to make an impression if all you do is issue a report.

Now, Verizon is a communications company. If you are a subscriber to Consumer Reports -- the January issue again, as many issues -- as many Januarys as I've seen, rated Verizon Wireless the best wireless provider in the country; it also said that our telephone service and our internet service and our video service were the best

in the country.

For enterprise services we bought MCI, a global enterprise provider. Consumer Reports doesn't rate them so you have to look at some of the enterprise publications to see that we are a very good enterprise provider. Telephony Magazine, for example, gave us their 2008 innovation award for enterprise services.

The reason we're good at what we do is because we spent a lot of time building systems, and I actually looked at this again just to see how we fared. In the past five years if you add up the capital invested by large firms, Verizon spent more cap X than any other firm over the five year period. There were a couple years we didn't win for that year, but over the five-year period we were at about $80 billion of cap X. GE was second at 76, ExxonMobil at a little less than 76, Wal-Mart at 69, again IBM at about 25 billion investing.

But we're spending an awful lot of money on building high quality fiber and wireless networks, so patents are important for us for three reasons. One is that we have about 5,000 patent assets. That's about two-thirds issued and one-third pending patent applications.

Our rate of patenting, I was happy to hear on

the first panel, we're about three Yales a year, about three times the rate of Yale's patenting. We're beginning to enforce more than we did in the past the patents that we have.

Second, we're a defendant in an increasing number of troll patent cases. We have something like two dozen cases pending against us now, and I think all but one are filed by companies that don't practice their patents. They're just in the business of acquiring patents to bring litigation.

The third way that patents are important to us I found out recently that Verizon, being it's a large company, we have a very large number of employees, and they have large families, and we have a lot of retirees, and we're buying all their medicines so in the category of how much prescription medicine Verizon pays for, it's about a billion dollars a year, so the strength of the pharma patents is a thing of interest for us also so I'll stop there.

Thanks again though for hosting this.

MS. MICHEL: A lot of important and different perspectives there. Can any of the panelists comment on the different ways that you use patents within your company, to what extent you use the patent to prevent copying of an innovation within the company versus

accumulating patents for defensive purposes and are there any other mechanisms or any other uses of patents, how those two different uses affect your patent strategies?

Russ, I know that defensive patenting and portfolio cross-licensing is an important mechanism in the semiconductor industry. Could you describe that for us?

MR. SLIFER: I'll try to. A little history would probably help in that from Micron's perspective as a start-up company in basically the late '70s, early '80s, we were somewhat late to the game, if you will, in that technology. There was already an awful lot of innovation from Texas Instruments, IBM and others in a large patent portfolio, so we found ourselves in a position where to be able to participate in the industry, we had to pay license fees to those companies, and we did so.

As we were paying those fees and innovating our own technology, we sought our own patent portfolio as the technology advanced. We acquired a fairly substantial patent portfolio based on strong innovation, which allowed us to enter into cross-licensing agreements with other manufacturers.

MS. MICHEL: When you say acquired, did you mean

purchased or built up internally?

MR. SLIFER: No, we internally created.

MS. MICHEL: Okay.

MR. SLIFER: We did not purchase any assets. We built our own internal patent portfolio as a mechanism to allow us to enter into negotiations with some kind of bargaining power.

As the years went on and the portfolios grew, our portfolio grew, we were able to enter into cross-license agreements that were much more favorable to allow us to basically retain our earnings ourselves.

That was the start of our patent portfolio. There's been a lot of discussion and in the earlier report about patent flooding and creating large portfolios around some initial innovation. That continues to drive our reasons for filing a large number of patents.

With the creation of our new products and life cycle, we need to make sure that others aren't going to necessarily patent around where our next advance is going to be, so we try to continue and keep the portfolio large. Does that help?

MS. MICHEL: Very much, thank you.

Have other companies had similar experiences that you could speak to, the need to cross-license?

Alex?

MR. ROGERS: So should we do the card routine?

MS. MICHEL: Yes, please. Please turn up your table tent, and we'll call on you, and we are creating a transcript, by the way, so if you could speak into the microphone that will help our reporter quite a bit. Thank you.

MR. ROGERS: So let me just address both the inbound and the outbound licensing at Qualcomm and just a very brief snippet on history. Again Qualcomm when it started with about a half dozen people looking to simply do some innovation, they hit on an idea that was essentially rejected as a commercially feasible idea. So because they were left with an open field to do something that nobody else wanted to do or thought was possible and because they made it work, these engineers were able to establish essentially a pioneering patent portfolio.

Licensing was absolutely critical. Outbound licensing was critical in order to make the enterprise commercially successful. It would have simply failed because it was in an industry that had extremely large, established vertically integrated companies from chip-set to handset to other forms of equipment, and so we had to outbound license. We had to have these other

companies, essentially competitors, adopt the technology, and the patent position was absolutely essential in order to get them to do that, not only for revenue but to get them to adopt the technology.

So we were able to form a large licensing program. That enabled us also on the cross-licensing side to bring in patents through licensing, and so because we have 160 licensees, we're able to cross-license their patents. We're able to pass those through to our customers who are actually buying our chips, buying our software and building product. We're able to essentially reduce or aggregate the cost of IP in the industry for a number of people who rely on our products.

MS. MICHEL: Yes, Noreen?

MS. KRALL: Okay. Thank you. I'll offer a slightly different perspective on out-licensing and then echo some of Russ's comments on defensive patenting as well. We've taken a slightly different view of our part portfolio. Again obviously patents bring great value to the shareholders and are an important asset for any corporation to hold.

We, however, focus a lot of our out-licensing activities to drive the adoption of our technology. For example, releasing our operating system Solaris under an

open source license, that created a community of patent rights associated with it, so the greater the access to our portfolio is actually by adopting that technology and following the rules of the open source license under which it was released under.

We've also used our portfolio to maintain our standardization of our platforms. If you look at the Java platform for the last decade -- through technology licensing and distribution agreements, maintaining compatibility with that platform, you get access to all of the background intellectual property that Sun has developed since the early to mid '90s in the Java technology areas.

So it is certainly out-licensing of our IP and our patents in particular but it's not a in a pure revenue generating type of program where we're approaching people and saying, take a license or some kind of a cross-license with us.

And then to Russ's comments, the other aspect of our portfolio really is to build, protect the innovation and the R&D investment by Sun Microsystems but also to have a portfolio that you can use to defend yourself or defend your customers or your technology communities if they are approached or if they have patent assertions against them by your competitors.

MS. MICHEL: Yes, Sarah?

MS. HARRIS: I will echo Noreen's comments because in the internet industry, to my knowledge, there's just not a lot of cross-licensing. Most of the companies that are competitors are in the top, so again we use out-licensing to promote the adoption of our products as well. We're involved in 25 standards organizations. We do a lot of open source licensing-out as well.

From the defensive standpoint we were one of the first people in the internet space so we do have some patents that are pretty pioneering. It's really worked to our benefit because, to what John was saying, we've seen a tremendous increase in activity and people wanting to license our patents, and we have been able to come back and use our portfolio defensively, so that's really promoted and encouraged us to continue filing more applications as well.

MS. MICHEL: Have you used your portfolio offensively in the sense of preventing others from using the technology? Any of you? John?

MR. THORNE: We --

MS. MICHEL: You had one case.

MR. THORNE: We sued Vonage which my shorthand characterization is they didn't do anything except

infringe our patents. They added no value beyond the infringement. We won an injunction that was upheld in the Federal Circuit. We ended up -- because there were unique circumstances, it was a relatively weak player, we ended up trading the injunction for cash.

We have since filed a lawsuit against Cox Communications which is now pending in the Federal Circuit, and depending on how you count them there are three other lawsuits between Verizon and Charter Communications, and in both the Cox and Charter cases, we're seeking injunction to stop the copying.

MS. MICHEL: John mentioned an explosion in patents on the market. Have others experienced that kind of explosion or any other term you might want to use to characterize it? Most of you mentioned it. Can you describe it, spin that out for us and explain what you mean by that and what the consequences are? Russ?

MR. SLIFER: I guess the easiest way for me to address that would be that at least weekly I receive solicitation offers for patent portfolios that are now on the market so I do believe -- and having talked to others in the industry -- they also are seeing a large number of patents that are coming up for sale or for auction or through third-party agents.

So I agree with John that I think as the economy

continues to drive businesses to look for new ways to raise revenue or even as businesses go bankrupt and their assets are divested, that patent and IP portfolios will continue to become available.

MS. MICHEL: You mentioned portfolios. Are these patents being sold as portfolios or sold individually?

MR. SLIFER: Well, I usually don't get notification of an individual patent. These tend to be grouped. Now, whether they're a company's entire portfolio or a subset, it varies.

MS. MICHEL: Is it necessary -- are they being offered for you to buy the whole portfolio at once or is it possible to buy individual patents within the group that you're seeing?

MR. SLIFER: I probably can't answer that because I've never responded back to -- we don't -- unfortunately right now we don't have any cash to take advantage of buying assets on that market right now, even if they were ones that we were interested in.

MS. MICHEL: Okay. John?

MR. THORNE: I can quantify a little bit.

MS. MICHEL: Please.

MR. THORNE: I'm somewhat restrained in telling about my source, so forgive me for that, but I can

give you the numbers. In 2007 we saw almost exactly 10,000 patents for sale, sometimes single patents, sometimes collections in a small portfolio. 10,000 patents for sale that were in areas that were potentially relevant to Verizon's business. In 2008 we saw again a bit more, and the 2008 window was a little more cloudy, and if you took, for example, the fourth quarter and extrapolated the whole year, you would be closer to 18,000 patents for sale potentially relevant to a company like Verizon.

It may have been smaller but some place between 10 and 20,000, but that's what we saw. I'm sure we didn't see everything that was for sale in that period. That came from rough numbers, 60 patent brokers that were offering them and a relatively new phenomena, law firms sell patents, and a law firm will sometimes do a little additional work in selling patents.

They'll give you claim charts. Here's a patent for sale, here's a claim chart that shows how you might be interested, and sometimes companies will sell direct and sometimes individuals will sell direct, but the bulk of the activity comes through brokers, and it sounds like you're going to do some of that in the next hearing that you have, but in rough numbers it's 10,000 to 20,000 patents.

I think that's going to increase as companies now frantically sell everything that they can to raise cash.

MS. MICHEL: How is that different than your experiences five years ago in terms of both the number of patents for sale and the use of brokers?

MR. THORNE: I wasn't involved then.

MS. MICHEL: Or if anyone wants to comment.

MR. THORNE: I don't think it was anything like that in 2003.

MS. MICHEL: Noreen?

MS. KRALL: Yes. So there are a tremendous amount of assets for sale on the secondary market. We've been involved in watching this over the last four years. I would say our resources and time spent looking at these portfolios that are coming across has probably doubled. It's taken twice as long and twice as many patents are coming across.

It's a regular part of the patent portfolio manager function in my organization to actually look at those portfolios as they come across. Interestingly enough, some are truly just pure patent sales in the technology industry from folks that have large portfolios.

Some are small inventors. Some are individual

patents. Some are large portfolios. Some are truly couched as an offer to sale, and others are vague barely disguised assertions, if you don't buy these patents somebody else will who will sue you or they'll shop the patents to some other companies with claim charts against your products.

And I'll get the same set of patents to look at with claim charts against my competitor's products, so it seems to be a new approach to patent assertions that don't necessarily or attempt to get below the requisite threshold for you to be able to file a DJ against potentially the patent seller, so it's certainly a challenge.

Sun has been involved since the earliest inception of Allied Security Trust, which is a consortium of a couple of companies that have gotten together to try and use their collective resources to purchase patents and mitigate the risk of those patents falling into the hands of entities that would be more let's just say litigious with those patents, and that's been successful for us as a mechanism for addressing this volume that we're seeing in the market.

MS. MICHEL: Matt and anyone else who would like to comment on how this has changed over the past few years? Noreen, do you have a sense of how this has

grown? Is it a problem with the secondary markets?

MS. KRALL: I don't know the exact numbers but the volume is tremendous. It really is.

MS. MICHEL: Okay. Matt?

MR. SARBORARIA: I don't have numbers either, but in the software space, we've seen a tremendous increase in offers to sell patents. In contrast to Russ's comments, most of the offers we see are for individual patents as opposed to large portfolios. We've seen this increase sort of track the development or the increase in the number of different entities in the market that were addressed at some length in the Commission's December hearings, the increase in the brokers, agents, auctions, what I think of as the push end of the market, entities or individuals coming to us with patents that they believe would be of interest to us.

And in some ways this has been a positive development in the sense that some of these organizations do some fairly good diligence at the front end and can bring some high quality assets to the table. I remember when I started at Oracle some years ago, we used to receive a lot of letters from individual inventors, patent owners, some of them offering patents that had no relationship whatsoever to our technology or

our business, offering hardware patents when we're purely a software company for example.

We've seen that. We've seen a decrease in those types of offers and an increase in what I would characterize as more sophisticated offers.

MS. MICHEL: Alex?

MR. ROGERS: So our experience has been similar. We've seen the market for patents being sold increase. Certainly we've had more visibility into it over the last few years, and we've had -- like Noreen -- we've had to organize internally in order to be able to handle getting some sort of structure to be able to understand how the market is working and what is out there essentially and being able to evaluate what's being presented to us.

I don't have the numbers that John has. I can say anecdotally it is interesting that a number of portfolios that are being presented to us recently include patents that were sold previously, so we're looking at patents that may have been bought and sold back in the late '90s being presented yet again.

And so I really don't have the numbers to tell you how much it has increased. There certainly wasn't a market previously because we were seeing patents that have already been sold.

MS. MICHEL: Okay. Sarah?

MS. HARRIS: I'll echo the same comments. We've seen a really significant increase in the past 12 months of being approached by brokers, and also like Russ we're not in the business of buying patents. We do look at everything, but it's actually becoming somewhat burdensome now because we see so many that we also talk to the brokers, and what kind of anecdotal intelligence that we're receiving now is that the actual purchasing market is really drying up.

We've heard from two different brokers that a portfolio today would probably draw the sales price about half of what it would have been last year, and people just aren't biting on them. The patent aggregators aren't buying as many. They're being much more selective, so it's kind of a capitalistic market in the patent space.

MS. MICHEL: John?

MR. THORNE: I wanted to follow-up on something that Alex said because I have a Qualcomm example. It's very hard with the volume of patents to make a realistic decision, Is this something you need or not.

MS. MICHEL: Yes.

MR. THORNE: Because even a quick analysis on a single patent, does a complex business potentially

infringe this and is this business -- is the patent valid, was it properly enforced, will run into at least the small number of thousands of dollars per patent. If you're looking at 10,000 over a year, it would be an astronomical thing to actually do a good job of evaluating things.

Here is my Qualcomm story because we were involved as a worried bystander. There was a patent portfolio for sale four or five or six years ago that was presented to Qualcomm, I understand. It was a small number, 100, 150 patents for sale. Qualcomm gave it a pass. Broadcom bought it, went to the ITC, which hasn't learned the wisdom of the FTC's recommendations from 2003. They disrespect *eBay*. Went to the ITC and Broadcom said one of the patents they had purchased was -- actually several of the patents were infringed by Qualcomm's chips.

The ITC should block products coming into America that included those chips, and this would have been the now current generation of wireless phones. Verizon, AT&T, all the other suppliers of wireless service would have had no devices to give their customers had this succeeded but it was an instance where a very intelligent IP group that Alex runs was given the chance to buy the patents and made a

reasonable decision, no, these probably aren't important. The ITC later found otherwise, and was ready to issue the strictest of remedies which would have devastated an awful lot of commerce.

MS. MICHEL: Alex?

MR. ROGERS: John's correct, that portfolio actually was presented to us, and we did pass on it, and we did think that the patents weren't strong enough to purchase or be interested in. We obviously have views on the merits of that still, but that's correct, and, in part, because of that lesson, we've actually become determined to be more educated on this market that's out there, and we are becoming more educated on this market that's out there.

MS. MICHEL: What do you need to do to become more educated? What kind of resources is it taking, and then also how do you make a decision whether to buy and what are some of the motivations in buying patents if you buy them in this kind of market? Are they defensive motivations only? Can they be offensive motivations? Are they just to take the patent off the street so it doesn't fall into other hands? John?

MR. THORNE: I don't want to dominate this but in Verizon's case we have enough of our own patents for offense. We're only buying things that we think might

be asserted against us. The analysis that's necessary when you look at one patent is -- anybody can do it. If somebody gave me 12 patents, we have a very talented group of people that would look at it and could determine if we do or do not worry about them -- there's no risk of infringement or the prior art search shows that the patents should be found invalid given the way the law works on that. But the expense of doing that is pretty large.

I'm told by my outside suppliers of this that no one will do a prior art search on a patent for less than $1000. A worldwide bare bones patent search is $6,000 - 7,000. A more realistic extensive search, which looks not only at other patents but other publications, is in the neighborhood of $15,000.

You do a lot more than that in real litigation, but if you tried to do a serious look at the validity of every patent that came in and you were looking at 10 to 20,000 patents potentially relevant to your business a year -- that's more than my budget.

MS. MICHEL: Okay. Russ?

MR. SLIFER: When I commented earlier that we don't have the money to buy patent portfolios, that's partially true. It didn't mean we don't take a look at what is offered to us. But like most of the high

technology areas you have here, the number of technologies and patents that would affect our products are in the thousands. I mean, everything from material science to chemistry, electrical engineering, process operations, all of those, so we have a large patent portfolio to provide us the defensive positions we need.

What we would be looking for when we look at the portfolios are to see if there are assets in there that would be critical to what we're doing and what might fall into the wrong hands as you say to get it off the street. To be honest, I have not seen that in the portfolios being offered to me, that we've felt that anything has risen to that level, so we haven't engaged in that discussion with the brokers that you're inquiring about earlier, can you split it up or buy one or two patents out of it.

MS. MICHEL: I see. Noreen?

MS. KRALL: So, you asked a couple questions about how to get educated and what is the purpose for purchasing. Just simply on the getting educated side, if you do feel that there's a market out there that you're missing that you want to tap into, I would recommend connecting with some kind of a seller's broker and just giving them some general parameters, if the technology's in my space, just make sure it passes

across my desk.

Be careful if you open that door because a flood of proposals could be coming in as we've certainly found. It becomes kind of a self generating part of your business. To the extent we look at the patents it really is from a defensive purpose. We don't even get to the point of looking at invalidity. If there's a reasonable claim that could be made from an infringement standpoint we usually look and say, okay, now is this reasonably priced and should I just purchase it, unless there's some very clear prior art that you already know of that might have been generated within your own company.

But beyond those, it doesn't make sense to do prior art searches on all the patents that come across. Then I would say the challenges that you face, you face when you enter this market is that there's really no visibility into what these transactions should really go for. There's no real comparable market data.

You can't do a comparable analysis like when you're selling your home about what other prices are in your neighborhood. You're relying a lot on the information of the seller or the seller's agent, and then of course your own risk factors weigh in, what would -- potential revenue that could be tapped if this

patent was asserted against me in litigation.

The other challenge that you face is the fact that there's no consistency in the way these patents are marketed. Some are very robustly packaged where you can see very clearly where the relevance of these patents are, and others are just thrown over the wall and you kind of struggle and say, "All right, what exactly do or could these apply to?" So those are some of the challenges you would face in getting involved in this marketplace.

MS. MICHEL: Do you react differently depending on how the offer for sale is packaged, the patent that comes with some explanation of why it's relevant versus the patent that's just thrown over the wall?

MS. KRALL: Oh, sure. More information is always better. It certainly guides your analysis.

MS. MICHEL: Alex?

MR. ROGERS: Just to clarify, I want to make sure that I think we're all distinguishing the situation where, for example, you're looking at an acquisition of a start-up, for example, that has IP that's valuable and can really advance your development of technology in a complimentary way, and I think we're all distinguishing those situations.

In terms of looking at patents that are now out

there and portfolios that are out there for sale, I agree with John. You can't throw everything at every patent. It's too much. It's unreasonable, so you have to develop some sort of process that's a funneling system where you're skimming as a first look -- probably most of what somebody might present to you, and then you have opportunities to develop groups internal or external that have different types of expertise, engineers that have different types of expertise that are complimentary, and they can help triage to the extent you want to anything that's presented your way.

I agree with Noreen. There are certain instances where these are being presented as "Are you interested in these assets?" There are other instances where there's a subtle hint that you might want to take a hard look at these. But if you sit down and think about it, you can come up with reasonable ways to look at what's out there without spending inordinate amounts of money.

MS. MICHEL: Sarah?

MS. HARRIS: We have just a slightly different approach, and our patent strategy is specifically tied to our corporate business strategy. So to the extent that we get offers, we will only entertain things that are directly tied to the business that we're currently in, and to address this point we rarely get any that are on

point, so we pass up just most of everything because they're not relevant.

MS. MICHEL: Alex distinguished the situation in which you might be acquiring a start-up or acquiring technology. How often does that happen? Is that an important part of your business and an important part of bringing innovation into the company? Alex?

MR. ROGERS: So just briefly, absolutely. I think in the last four years Qualcomm has acquired over a dozen companies. We're looking for companies that can really become complimentary to our research and development and our product offerings. There are companies out there that are very, very forward looking. They may be very, very small, but very, very forward looking and they may have very good technology and very good patent positions on that technology.

And they're essentially looking for somebody to help incubate that, and we're always looking for somebody that can be complimentary, so it is important.

MS. MICHEL: How important is the start-up's patent position when you're making that decision on whether to acquire?

MR. ROGERS: It's absolutely critical, absolutely critical. I've heard it in other panels and from other folks from start-up companies who have come

here to the FTC to talk about it, but I guess I'm repeating myself. I'll do it one more time and I don't know how to better say it but it is absolutely critical.

MS. MICHEL: Okay. Matt?

MR. SARBORARIA: I agree, I'll just echo what Alex just said. We have a very active acquisition program. There's a lot of consolidation going on now in the software space so we look very carefully at technology of start-up companies. There's a lot of good technology out there that's complimentary to our existing product offerings. As a part of that due diligence and looking at those companies, we scrutinize their patents, their pending applications very, very carefully. It's absolutely critical to the transaction.

Of course we also look at the potential acquisition from a defensive perspective, what type of liabilities are we potentially bringing on in the IP area in terms of their own product offerings or their own customer base, but their patent -- their patent position is very important.

MS. MICHEL: Russ?

MR. SLIFER: I'll give a slightly different perspective. Micron licenses, and I like to think of it more as technology or looking at a start-up company

or individual or university work, something that will provide a competitive advantage to Micron, whether that's faster time to market, whether it's complimentary R&D in an area that we haven't staffed up in yet. The intellectual property components of that, including patents, are important, but it's the technology and the advancement of our competitive position that is driving our decision to look at this start-up or look at this IP, look at the start-up or look at the technology.

The IP, of course, is important from the standpoint that IP is important to Micron and we're going to protect what we've innovated so we like to see the start-up and the technology that we're bringing in having protected their IP to give us that advantage.

That's not necessarily the driver. I would like to distinguish between bringing a technology in that advances the company versus just buying a portfolio. Without that back-up behind the patents, the patents really wouldn't mean that much to us.

MS. MICHEL: Alex, when you acquire technology in that way, are you acquiring technology in order to bring it into Qualcomm or are you acquiring more than just patents or are you bringing in the inventors and any know-how? "How does that play out?

MR. ROGERS: Most of our acquisitions in this

area we're talking about involves bringing in engineering talent, product development activities that we think are product development activities that we think we would be able to incubate and bring to market, and the IP protection is critical to protecting that development.

So let me just throw out one example. We acquired a company called SnapTrack some time ago that had very good, very advanced GPS technology, assisted GPS technology, for cellular uses and we brought that company in. They had terrific engineering talent, great patent position and basically every one of our chips that sold in the U.S. has their GPS tracking technology in it.

MS. MICHEL: Noreen?

MS. KRALL: Yes, thank you. So we're also very active in the acquisition process as well. The primary drivers are from either filling a business need or adding complimentary technology to our products, and then secondarily we'll look at their IP and their patent position specifically.

That varies by start-up. Some are very good and very diligent early on in filing their patents. Others get to the point in their development when they have something that's really ready to be offered. They might

only have a provisional patent application where they've put everything in that bucket and if you are to acquire that company, you have to move quickly to actually perfect all those IP rights. So, there's different -- different places along the scale where the patents play in when you're acquiring a company through the acquisition process.

MS. MICHEL: Okay. Why is it important to quickly perfect those IP rights? Is it so that Sun won't be stopped by someone else from practicing that technology or to what extent is there a desire to perhaps prevent competitors from practicing the technology?

MS. KRALL: Well, it again gets back to what our philosophy is about patents, but there's been an investment in intellectual resources in creating something that's valuable that we want to acquire. The technology being the largest bundle with the people behind it and whatever it is, whether it's specs or code or hardware design, and then capturing it and perfecting it in patent rights, so it's very clear that you own those patent rights.

But then again, getting back to our philosophy, we often make that available through our different - either its open source technology, open spec

technology, things like that. So it's not necessarily to just block out competitors.

MS. MICHEL: Okay. John?

MR. THORNE: I was going to make almost the same point. I think most of your panelists have their mergers reviewed over at the Justice Department rather than here, so I think I'm safe talking about there a little bit.

MS. MICHEL: I think that's right.

MR. THORNE: I know increasingly the Department of Justice has given scrutiny to the patent positions of acquired firms to see if under independent income you don't necessarily get a monopoly in a relevant product market with a patent, but you might have a monopoly on one of the ways of doing a process.

And if you're buying a competitor who has the monopoly on the other way of doing it, you've converged the only two ways into a single firm, and so I know that the Justice Department now is spending a lot of time looking at, for example, the mergers of the panelists here to see if the combination of patents creates a competition problem that would potentially be a problem for the merger.

MS. MICHEL: All right.

MR. ADKINSON: Do you want to go to

transparency?

MS. MICHEL: Transparency, that's right where we were going. Noreen raised transparency. Noreen mentioned again in the market for secondary patents and moving away now from this technology transfer, we have heard the comment that this is not a transparent market. You don't know what other people are paying and that makes it difficult to price and value the patents being offered.

Do others have comments on that problem? Do you experience that as an issue? And do you have any suggestions on what might be done about it? Would you like a more transparent market in which, for instance, the price of the licensing deal had to be reported? No problems with transparency? John.

MR. THORNE: I read the reprint of an article by Nathan Myhrvold and Mark Lemley on the idea of transparency. There's a surface appeal to the idea that when you sell a house, that the price that the house is sold for is published. That's interesting but there are so many other factors that go into a license that make them hard to compare to one another.

When I was a baby lawyer, I represented the Chicago Board of Trade in a futures contract for December

wheat. Wheat was a well known thing. It was a commodity, and the only thing that changed was the price. If you knew the price you knew everything about the transaction.

I've never seen two licenses the same. Between different companies, one company is going to do something very different with the license. Its business has some plan, the details about -- does the license include newly acquired entities? Does the license go with things that you divest? There's so many aspects to a license that will be different from company to company.

It's like if you were buying a house and the number of children that you had or whether you're going to cook in the house, do you own pets, are you going to mow your grass or not mow your grass, there's so many different things about it that make it hard to compare one patent license to another, so the price would not give you that much information.

MS. MICHEL: Sarah?

MS. HARRIS: I would like to echo that as well. Some of the issues that we've seen with respect to transparency is that it would be like better in settlement negotiations.

For example, if someone has approached you with some type of a claim, I mean it's been our position we

do want to know what their licensing practice has been with respect to that patent, and pre-litigation, almost impossible to get, so it kind of thwarts any ability to actually settle before litigation.

In litigation you can typically get it. It just takes a very long time, and there's a lot of expense involved in getting to that point, so theoretically, it would be nice, but then if you overlay that with what John was saying, every deal is different, and I assume everybody has dealt with most favored nations clauses in their licenses.

If you've ever had to dispute one of those, you realize that no deal is ever the same and there's always an out on that provision, so I don't know how we could get there.

MS. MICHEL: Alex?

MR. ROGERS: I think there's a question that basically is transparent as to exactly what? Because in a way with these patents and portfolios that are being offered, there is a tremendous amount of transparency. As a matter of fact there's information overload. You can gather tons of information about patents that are out there potentially for sale.

You've got Ocean Tomo patent auctions. That's pretty darn transparent. But there are things that

are not transparent, and rightfully so. I mean, all of these competing entities have an interest in confidentiality in their commercial agreements and whether that deals with patents or some other form of commercial agreement, there is a significant interest in confidentiality that has to be respected even in this area.

So in some respects there's tremendous transparency. In other respects, maybe not, so but I don't know if that's necessarily a problem.

MS. MICHEL: When you see a patent on a secondary market, how easy is it to tell or are you ever not sure who actually owns that patent? Who's the true party in interest or is there situations in which the patent may be held by a Shell company? Russ?

MR. SLIFER: Well, I think the answer is yes, it is difficult to ascertain at times. I'm not so sure though that it's the patents that are being offered on a secondary market necessarily. It's the patents that aren't currently being offered or asserted but are being held back or held by a non practicing entity.

Even some practicing entities don't necessarily even want the extent of their patent portfolio to be known so they may not file some assignments for patents.

It happens for different reasons, but I have seen some evidence that different shell corporations are set up and portions of portfolios are split between them, so if you license this portfolio from this company, you don't necessarily know that you're also exposed to a complimentary portion of that portfolio held by somebody else or if you can't tell who's holding it.

I think there is some intentional hiding of who owns -- who's the true party in interest.

MS. MICHEL: And Sarah?

MS. HARRIS: The other aspect that's a little bit problematic is if, as a developing company - a company doing development -- you're trying to be vigilant about the patent landscape. Say you want to look at a particular industry or possible competitors in that industry when people aren't actually filing in their names, it's very difficult to do, and I don't really quite understand. I've heard there are different reasons for doing it but they don't seem to further transparency.

MS. MICHEL: Okay.

MR. ADKINSON: That brings up a broader question. We've been looking at the question of how difficult it can be just to evaluate a group of patents that are offered to you for a sale. But if one takes a

step back and asks how about the rest of the patents that might have been issued and might be relevant to your businesses, and how does the notice function of the patent system enable you to get some handle on what your potential risks are when you -- in terms of introducing products and how do you address those risks in terms of clearing rights or the like?

MS. KRALL: I'll be happy to answer.

MR. ADKINSON: Please.

MS. KRALL: Or at least get us started in this topic. In the tech industry doing clearing searches is almost cost prohibitive and very likely to lead to unpredictable results, false positives and false negatives, where you think you might have patent -- there might be some patents that would block a technological direction you want to might go in.

It might be actually blocking patents and then your searches might not ever bring to light patents that truly either are blocking or could ultimately be asserted against those products that you're developing down that path. A lot of the uncertainty comes quite frankly from either poorly prosecuted patents or patents that have ambiguous terms, patents that don't have defined claims, patents that are pending in the patent office that haven't even issued that you don't even know

about when you embark in a certain technological direction.

And coupled with all of that, the concern that you might have of having a claim of willful infringement being brought against you ultimately leads to a conclusion that it's better not to look or search or do clearance activities at all and go down a particular technology direction and then address anything that comes up at a later date.

MR. THORNE: I would just add that in agreement with what Noreen said, that the difficulty is not something that can be fixed with tweaks to the way patents are written or published. I tried at one time to count how many issued and still in effect patents might potentially be relevant to a company like Verizon and the number is around 700,000, only 10 to 20,000 of those trading every year, but the number is very, very large. It would be very difficult to do that kind of analysis for the entirety of what's out there.

MR. ADKINSON: Alex?

MR. ROGERS: So doing product patent searches and looking in the area where you're attempting to launch a new product is difficult, and it does require concentrated resources and it's never a simple process. At least in my experience it's never a simple process.

but I do think we ought to step back and look at the big picture and point out why that's a really good problem to have. It's a really good problem to have because we have an incredibly innovative society, and we have a patent system that has resulted in incredible innovation in the United States.

So that problem resides in or simply sits on tremendous inventiveness in this society. So while we certainly agree that the Patent Office can be improved and we can hopefully have more quality in terms of the patenting that's out there, the problem that we all have in building complex products that call upon large numbers of patents potentially is in a fundamental way a very good problem to have.

MR. ADKINSON: John.

MR. THORNE: Alex is one of the best IP lawyers in the world so I have terrific respect for his ability at analyzing things. But, I just remember the patents that he gave a pass on that almost stopped all the chips that his company made coming into America because they were to found to be infringing patents that Alex had a chance to look at.

In the first panel there were some differences between the life science patents and high tech or IT patents described. I do think there's a fundamental

property law kind of difference between the patents. Typically your miracle drug is a molecule, and one patent might be enough to protect it. Often there are more, but sometimes it's one patent, one product. In the high tech business a simple product can have a thousand or more patents on it while one of Vonage's defenses in the case that Verizon brought against them, their damage expert got up and said, "Verizon only has asserted seven patents against us. There are a thousand patents that cover our product."

They may have been right. There may have been a thousand patents covering their product. It's just the number of intersecting property rights on top of a simple -- in Vonage's case a simple high-tech product. It's too big.

MR. ADKINSON: We had wanted to focus on the source of the problem and we had let out several possibilities. Is clarity of patent drafting something that is a difficulty but not really the main source? Are the sheer numbers what really drive the problems?

MR. THORNE: If I was ranking things, sheer numbers is number one. What happens if a patent is enforced? Suppose you make a mistake? Even a good lawyer can make a mistake about whether you infringe and the patent is valid and now you're in the remedy phase

and there's uncertainty about the remedies that would be applied. A company like Verizon that has a lot of sunk capital in the ground worries about whether it's going to be held up by having committed so much investment, and being a big business means you have a big risk in front of a jury or if you're, God help you, at the ITC where injunctions can still be issued.

The uncertainty of the remedy phase is number 2, and then I think the notice function the patent served is pretty far down the list after that.

MS. BELLON: Anyone else on the topic? Russ?

MR. SLIFER: Well, somewhat on topic with that. I would agree with both Noreen and John on that sheer quantity is an issue, especially in a semiconductor industry where we have literally thousands of potential patents to read. But I would also go with the abuse of the system, abuse of the continuation system especially in a product cycle that is less than even the 18 to 24 months maybe or three years of development is less than a pendency or a case might issue within that.

But sitting back and waiting until an industry is fairly mature and has sunk billions of dollars in capital and then what I would consider morphing the specification to provide claims that read on the later developed product to me adds a great deal of uncertainty

even if I spent all of my time analyzing the claims that are out there that I can find that aren't pending in the Patent Office or have been published.

I certainly can't tell in a hundred page specification which one paragraph the owner might grab some support or argue some support for a claim that I never foresaw coming out of.

MR. ADKINSON: Noreen.

MS. KRALL: Yeah, I would certainly add, I agree with the problem once the patent has been issued and you're facing litigation. But some of these problems I think should be at least addressed to some extent upstream in the Patent Office. There should be a greater degree of emphasis on 110 type rejections para one, para two.

The patent examiners don't necessarily have the tools available to use that a lot of the outside analytical tools that we use, OCR searching capabilities that would allow you to find whether or not there's claim terms that are undefined in the specification or not depicted in the drawings.

So if there were some improvements in the patent examination process in some of these areas, to tighten up and very clearly articulate what the patentee intends to be their invention, that might help for the future.

There are also areas where patents are being allowed that there's just a dearth of prior art out there, and following some of the practice that's taken place in Europe where industry is able to provide or populate databases with non-patent prior art to help in the examination process and perhaps result in better quality patents I think is something that should be explored.

MR. ADKINSON: Matt?

MR. SARBORARIA: I agree with John that the number 1 problem is sheer numbers for us in the software industry. But uncertainty regarding claim scope is also a big problem, and I think it's particularly so in the software space where it is often unclear whether a given claim reads on software at all because of the unique ways that software inventions can be claimed, including many hardware elements.

So, even with a very diligent, thorough and costly search or clearance study, we run into the situation where patents are asserted against us, patents that never came up through that very diligent process.

MR. ADKINSON: Sarah?

MS. HARRIS: Our industry has a slightly different issue. Our number 1 issue would not be quantity but it is definitely quality because you'll have the garage inventor sitting going, wow, maybe I

could come up with this new whiz bang thing on the internet where no R&D is required and they just draft a patent.

So we have a ton of patents that are asserted against us that did not result from any investment whatsoever except for the actual drafting of the patent. Many times they're completely invalid but they didn't go through the proper examination process. Then once we get into the litigation, I would say the second one is abuse because there's these people that should never have granted the patents, and then they come after us and use the uncertainty around remedies and try to go after our entire revenue stream for the whole country when really the patent's only directed at one small aspect of one small product.

And finally, our third is the uncertainty and claim scope. At least in our litigation we're not getting any determinations soon or earlier on in the litigation such that it would help us settle it. Usually the *Markman* or any other dispositive motions are heard right before trial so we have to go through the whole thing to get there so that's where our problems have primarily been.

MR. ADKINSON: Alex?

MR. ROGERS: Again just on the quantity issue,

the quantity issue stems from an underlying phenomena that is a very good thing, and that is the degree to which we encourage innovation in this country. It's been enormously successful for a very, very long time, so I'm not sure how you completely solve the quantity issue.

But I think I agree with everyone else on the panel here that focusing resources on the Patent and Trademark Office to give them the tools and the people that they need to examine applications in a way that they really ought to be examined, particularly when you probably have a growing number of applications being filed as you do, clearly we do, is probably -- I think everybody agrees that ought to be done.

MR. ADKINSON: In the shameless plug category, we're going to have a panel tomorrow afternoon that's going to -- an all star group addressing those topics.

It sounds to me like necessarily when you're making new product introductions you have to make a risk analysis based on the circumstances. To the extent you can talk about it, how does the current patent system affect that? I guess John had mentioned remedies as one aspect of how the system ultimately affects it, but if you could speak to the risks you faced, whether you choose to not go forward at times, and how hard it is to

go forward in the face of some of these risks?

MS. MICHEL: Please feel to bring in the damages issue at this point. I'm sure you all have a thought about how that affects your thinking, the potential liability.

MS. HARRIS: Whenever we introduce a new product or at its conception, we do the analysis to see, "Will the patents factor into this," but due to what Noreen said earlier, if it's a pretty quickly evolving technology, a search isn't going to do us any good anyway, and right now like all the patents that are currently being asserted us against in litigation we would never turn up in a search. It would never have dawned on us that anybody would try to stretch the claim scope this far.

MS. MICHEL: Is it because those patents hadn't issued or is it this problem of stretching the --

MS. HARRIS: Both, and it also goes to the issue that they're unpublished applications so they keep them in the chain and you don't know. So the pre-product searching is not something we typically do. We might if it's a totally new space. We might just want to look at the patent landscape but we typically don't do it, so is it a factor in the innovation consideration? Yes. Do we place a lot of relevance on it? No, because of the

uncertainty.

We can't quantify the risk, so we just say, is it a good business decision to get in this market? Is it going to give us a competitive advantage and go forward?

MS. MICHEL: Do others feel you can't quantify the risk because there's too much uncertainty.

MR. SLIFER: Yes.

MS. MICHEL: Alex?

MR. ROGERS: It depends. There's really not a categorical answer, and certainly not in our case. It depends on the size of the product, the size of the market, the number of patents that you're looking at. Look, I have the unfortunate position of being a single lead at Qualcomm. That is I'm an English major, so through years of undergraduate school and graduate school studying poetry and other things that my engineering colleagues couldn't care less about, I've learned that the English language is very flexible.

So even in the patent context while you have rules about defining claims terms that hopefully help you in defining scope, even if you were to perfect those rules to the extent humanly possible, you're still dealing with the English language. You're always going to have differences of opinion. So in our analysis we

come to the best understanding that we can and we make decisions based on it.

Now, it depends on a lot of different things in terms of how risky it is or risky it isn't. To get to claim scope issues, one of the things that I found is that there are sometimes trial lawyers, who are very good at stretching claims. Also there are a lot of judges out there who I'm sure who would be happy to have more education and more understanding and learn more about patent law. That could help at the other end of the process.

MR. ADKINSON: Russ?

MR. SLIFER: The uncertainty in unpublished applications, in pending applications, in claim scope and damages, the sheer number of possible areas that technology could be relevant to a new product, have led us from experience -- have taught us I should say from experience that we can't lead our executives with any level of certainty ourselves.

So expending a lot of energy and resources in the company to attempt to do this has been futile, so we just don't spend that much time. What's driving our investment are competition and consumers.

MR. ADKINSON: John?

MR. THORNE: Another number, in 2008 with a

fairly dim window for most of it, we saw 884 semiconductor patents of the type that Broadcom used to challenge Qualcomm's chips coming in wireless phones into the U.S. That's an awful lot of patents to evaluate. We don't really have a good window into the way the semiconductors work. We have high level requirements for things but how the patents read on semiconductors are things that Alex's business would know a lot better than we do, but there are an awful lot of patents, and those are the ones that were for sale by brokers during that period.

Unlike Sarah, we're not seeing garage inventors with patents that are badly prosecuted. We're seeing patents that were originally prosecuted by the good R&D labs of the fortune 50 companies that are now in the secondary market for sale. That's the main source of what we see, and is the uncertainty a deterrent to innovation?

I think in the case of a Verizon or similar companies, it's a great source of worry. We spent a lot of money trying to deal with it and I see the purpose of patents being disserved by the current system.

MR. ADKINSON: Early in the panel there had been a discussion of some litigation you face and I think several of you indicated that there's quite a few NPE

lawsuits that you're facing.

In panels we had in February, there was a discussion by some of the smaller players that said they face a problem of bringing a new technology to a big company and then having that company decide they don't really need to license it, they already had figured it out, and they might need to have a strong patent protection in order to be able to sue to prevent that large company from practicing what they had tried to license to them.

If you can disclose it, of your litigations, how many are alleging that this the assistive technology that was brought to you with an idea of jointly developing it as opposed to technology that you saw the first time when you got a demand letter or something akin to that?

MS. HARRIS: None of ours are related to that.

MS. KRALL: I would agree. The majority of our IP litigation is really NPE lawsuits against Sun, patents we never saw before until we were served with the lawsuit, and that is unfortunate because we do respect IP. We respect the IP of third-parties, and if somebody were to present something to us that was interesting then we would engage in productive discussions and realistic discussions, there might be a

different result, but unfortunately the operation as it is now is simply to sue first.

You then are faced with spending significant amounts of legal resources getting to the point where you have enough information to drive realistic settlement discussions, and that's unfortunate.

MS. MICHEL: You mentioned sue first. Has *MedImmune* increased the sue first phenomena versus negotiate first?

MS. HARRIS: In terms of?

MS. MICHEL: Patentee being worried about a declaratory judgment action being brought and so just going right to court? I have heard some people --

MS. KRALL: I think it was *ST Microelectronics* was --

MS. MICHEL: The *SanDisk* case, right, based on *MedImmune*.

MS. KRALL: After that it was rare we saw any demand letters. In that one year alone I think we had eight NPE lawsuits filed against us without any prior notice.

MS. MICHEL: In what jurisdiction were they filed in?

MS. KRALL: Texas.

MR. THORNE: We have about 24 cases pending,

almost all in Eastern Texas. One of them we got notice of the patent before the lawsuit was filed and that's because they filed a parallel lawsuit against other companies and we saw the other lawsuits, not the patents so we filed a declaratory judgment action in New York anticipating that they would sue us in Texas and settling that case, but otherwise they're all in Eastern Texas.

MS. MICHEL: Matt?

MR. SARBORARIA: It's a similar at Oracle. The vast majority of our cases are ones in which our first notice of the patent was the filing of the lawsuit. We too have seen a decrease in numbers of assertion letters post-*MedImmune*. We've seen an increase as we talked about earlier this morning in offers to sell patents which are unambiguously offers to sell.

We have seen a decrease in outright demand letters as well as this sort of vague carefully worded letters I think that are fairly interpreted as demand letters based on the declaratory judgment case law.

MS. HARRIS: I've been at AOL for just a little over a year, and we have eight lawsuits filed, all by non-practicing entities, and no notice ahead of time. In the last three months, we actually did receive,

I would say, a few requests to license, and I hadn't seen those at any company that I've worked for before but it's people -- it's these licensing entities that are representing larger companies, and they said we have sometimes large portfolios, sometimes a number of patents in this specific area, but I wouldn't have expected that with *MedImmune*.

MS. MICHEL: How have the number of lawsuits you've been defending grown over the past five or seven years? Anybody have a sense of that?

MS. HARRIS: We've seen a 30 percent increase in the past two years year after year.

MS. MICHEL: Matt?

MR. SARBORARIA: We've gone from zero to 20 in the past five years.

MS. MICHEL: Okay. Alex?

MR. ROGERS: We've had a lot of litigation in the last three or four years, but it's been --

MS. MICHEL: Besides the Broadcom litigation?

MR. ROGERS: Besides the Broadcom litigation. We've had some NPE litigation. We actually are a co-defendant in a case with Verizon, and we have other situations involving NPEs, but for the most part I would say that most of our litigation time and expense has been, I'm lacking a word, traditional in the sense that

it is involving other product companies.

MS. MICHEL: John?

MR. THORNE: These are approximate numbers. 2004 I think we had one NPE case or troll case filed against us. 2005 three, 2006 three, starting in 2007-2008 one a month, and across a large number of companies, it was a handful of dozens in 2004 growing into the hundreds by 2007-2008. There's been a very large increase.

MS. MICHEL: Noreen and also I would be interested in your theories on why?

MS. KRALL: I will simply share statistics. Until about 2004 we typically ran one to two patent cases on our docket over the course of a series of years, and it was around 2006 the numbers just jumped up into the double digits and has stayed around the 10, 12 active cases since then.

MS. MICHEL: What happened in 2004? Theories on why? What are the reasons? What do you think is driving this behavior and why is this a good business model for the people bringing these lawsuits? This is your chance.

MS. KRALL: Money.

MS. MICHEL: Russ?

MR. SLIFER: Why is it a good business model?

Well, it doesn't require as much capital investment. It certainly doesn't require even on the litigation side nearly as much to bring the suit. The uncertainty of how the patent is going to be interpreted, the uncertainty of how a jury is going to view damages, certainly it has -- I mean, there have been a few things that have changed, whether it be injunctions or *KSR*, that certainly might affect that business model.

But I guess to your main question is it's a business model that tends to pay off quite well and in certain industries, can be asserted against an awful lot of defendants so collecting just enough from each one cumulatively pays off quite well for the investment.

MS. MICHEL: Matt?

MR. ADKINSON: Would anyone like to comment on how the developments like *KSR* and *MedImmune* and willfulness have potentially affected this evaluation, and *eBay* of course?

MS. MICHEL: And your other theories on why this is happening and the effect of these sort of developments on what's happening. Alex?

MR. ROGERS: I'll start. Clearly these cases have pushed the balance in favor of the potential defendant and against the interest of the patentee, so *eBay* has obviously done that. *Seagate* has

done that to some extent with the objective standard for willfulness, and so there has been a shift, and there has been -- I think John said it earlier, that there's reform occurring in the courts, and I think that's definitely true. There is reform occurring in the courts, and the discussion in *eBay* even points to the reform being directed towards that non-practicing entity.

So there has been this shift, and it's a relatively recent shift. I think there's a lot to be done to see how it plays out and how the courts continue to apply *eBay* and continue to apply *Seagate* and work some of these issues out, and the shift could continue again against the patentees in favor of the defendants in the court system itself without ever getting to any legislative issues.

MR. ADKINSON: In light of time, if people would also add what -- in addition to this particular topic of the impact of these cases, what additional things they think might need be done given all we talked about today. John?

MR. THORNE: Again it's hard to disagree with Alex on anything, but *eBay* was decided in 2006. We have seen much more troll patent cases in 2007 and 2008 than ever before, so *eBay* had no affect on troll cases being

filed. There's a terrific uncertainty in how damages works. Thanks to my colleague Gail Levine, we're going to submit a paper that goes through some suggestions to the Commission on damages later this week. There is reform going on in the courts. There's a lot more that needs to be done. I appreciate FTC's getting interested in this again.

MR. ADKINSON: Noreen?

MS. KRALL: I would like to address one last thing while we're here today, and that has to do with standard setting practices.

MR. ADKINSON: Oh, yes.

MS. MICHEL: Yes.

MS. KRALL: The standard setting practice is really a critical part of the technology development process. It really is when companies get together under a set of standard setting organization bylaws and develop an agreement on the common platform and parameters that technology is going to be developed on so that interoperable and< quite frankly, at times, interchangeable products can be developed.

One of the problems that we're seeing partially driven by the secondary market is the fact that participants in the standard setting process have made commitments or assurances to these organizations in the

development of these standards that might not necessarily be honored by successors in interest when those patents are subsequently sold so we're seeing that as a problem.

Once you've got broad industry adoption of a standard, lock-in and investment, irreversible investments in developing products on that standard when somebody comes out and asserts patents against products to that standard, it causes quite a bit of disruption in the technology market and ultimately impacts the consumer.

The other problem that we've seen in the standard setting process is the lack of disclosure, if you would, of patent rights while the standard itself is being developed, and again greater transparency in that process, *ex ante* type of policies being driven by standard setting organizations I think would be a benefit for the tech industry in general.

MS. MICHEL: Any other comments on that?

MR. ROGERS: Can I finish up in response to Bill's request we make one last comment?

MS. MICHEL: Please.

MR. ROGERS: So as I said I do think that reform is recurring in the courts, and while that plays out, it often takes a long time for things to play out in the

courts. One of the things I certainly wouldn't want to see happen is the focus on NPEs cause a circumstance where we're undermining what is such an incredibly valuable patent system for our country and for innovation.

Qualcomm is a huge product company, but we think of ourselves as an R&D and a tech transfer company, and our ability to do what we do in R&D is dependent on a strong patent system and our ability to license and fund the R&D, so we certainly would hate to see that undermined.

MR. ADKINSON: Got you. Any other closing thoughts of any kind? If not thanks very much. We ended on time.

MS. MICHEL: Thank you.

(Applause.)

(Whereupon, a lunch recess was taken from 12:15 p.m. to 1:45 p.m.)

AFTERNOON SESSION

PANEL 3: MANUFACTURING AND DIVERSIFIED COMPANIES

MODERATORS:

SUZANNE MICHEL, FTC

ARMANDO IRIZARRY, FTC

PANELISTS:

JENNIFER M. STEC, Intellectual Property Counsel, Ford Global Technologies

GARY GRISWOLD, Retired President and Chief IP Counsel, 3M Innovative Properties

CARL HORTON, Chief IP Counsel, GE

STEVEN W. MILLER, Vice President & General Counsel, Intellectual Property, The Procter & Gamble Company

RICHARD F. PHILLIPS, Chief Attorney, Technology, ExxonMobil Chemical Company

MS. MICHEL: Thank you for returning and attending the FTC's hearing on the Evolving IP Marketplace. I'm Suzanne Michel, the Assistant Director for Policy here, and this afternoon we will be talking about the role of technology markets and patent markets for diversified manufacturing companies and in the life sciences industry.

We are web-casting these sessions this afternoon and our sessions tomorrow. Our sessions

tomorrow will address economic perspectives on IP and technology markets, and we'll have some of the leading academics and economists thinking about those issues.

Our next session will be on April 17 - the press release will be out soon - and will look at some of the newer developments in patent markets. We'll have the CEOs of Ocean Tomo, Acacia, ThinkFire and some academics who have been thinking about this and some people who have to live within these systems talking about their experiences with secondary patent markets.

Our final hearings in this series will be on May 4th and 5th in Berkeley. We're very kindly being hosted by the Berkeley center for law and technology. We'll be covering many of the same issues that we've covered throughout the hearings in D.C. within those two days.

We welcome all comments. Feel free to call any of us, we would love to hear from you. In addition, the FTC has the record open so that any member of the public can submit comments about any of the topics we're discussing. We'll leave that open until May 15th so people can comment on the sort of issues that are coming up in these hearings, and then we will have to close it down and buckle down and begin working on our report.

So thank you very much. I'll turn it over to Armando to introduce our panelists.

MR. IRIZARRY: Good afternoon. I'm Armando Irizarry, Counsel for Intellectual Property here at the Commission. This panel is the Manufacturing and Diversified Industries panel, and we have a distinguished group of panelists representing some of the better known companies that make products that we are familiar with.

I'm going to begin with Gary Griswold. Mr. Griswold is a Consultant for 3M and was, until recently, the President and Chief Intellectual Property Counsel of 3M Innovative Properties Company. He has practiced intellectual property law, at 3M and also at Dupont, for 34 years.

He's the past President of the Intellectual Property Owners Group and the American Intellectual Property Law Association. He's a member of several other professional associations where he has held leadership positions.

He's been a member of the U.S. Secretary of Commerce Industrial Function and Advisory Committee on Intellectual Property Rights for Trade Policy Matters and an alternate member of the U.S. Secretary of Commerce Advisory Commission on Patent Law Reform.

Next on the panel is Carl Horton. Carl is GE's Chief IP Counsel. He joined GE in 1992. Prior to

becoming GE's Chief IP Counsel, Mr. Horton served as lead counsel for GE's healthcare business where he was responsible for all intellectual property matters. In the past 12 years Mr. Horton has lead IP teams in over ten countries in protecting a wide range of products and services for GE.

Mr. Horton was lead IP counsel on over 40 acquisitions ranging in value from 10 million to over 10 billion dollars as well as lead IP counsel for countless IP disputes. In 2008, Mr. Horton was featured on the cover of IP Law and Business, in its article "Top 50 under 45." Mr. Horton is on the IP board of directors and chaired its U.S. Patent Law committee.

Steve Miller is Vice President and General Counsel of Intellectual Property for the Procter and Gamble Company since 2001. He joined Procter and Gamble in 1984. In this position he oversees about 150 patent and trademark attorneys worldwide and advises Procter and Gamble's senior management on intellectual property issues.

Mr. Miller has authored numerous P&G patents and has been involved in licensing agreements, acquisitions, interferences, arbitrations and litigation both in the United States and abroad. Mr. Miller is currently President of Intellectual Property Owners Association

and the IPO and on the boards and committees of several other professional, educational and academic organizations.

Richard Phillips is the Chief Intellectual Property Counsel of ExxonMobil Chemical Company. He began employment with ExxonMobil in 1982 and held positions in various ExxonMobil affiliates and ventures prior to assuming his present position in 1998. He began his IP career with Caterpillar Corporation in Illinois.

He also worked for a year as a field engineer overseas, immediately after getting his law degree. This on the theory that he would be a lot more fun than practicing law. According to him it wasn't. Mr. Phillips is a member of the IPO Board, and he's active in other IP related associations. In the IPO, he serves on the Board of the Education Foundation, and he's active in the Amicus Committee.

Before I introduce our last panelist, I just want to mention that if you saw the earlier agenda, Bill Coughlin, President and CEO of Ford Global Technologies was supposed to be on this panel but unfortunately he could not be here with us today. In his stead, he sent a very able replacement in the person of Jennifer Stec.

Jennifer is Intellectual Property Counsel for

Ford Global Technologies, a wholly owned subsidiary of Ford Motor Company, responsible for all intellectual property matters across Ford's worldwide enterprise.

Ms. Stec manages Ford's patent litigation as well as patent and licensing matters related to Ford's telemetrics and infiltronics technologies. Prior to joining Ford in 2000, Ms. Stec was Counsel at another automotive OEM and also practiced intellectual property at a Detroit area intellectual property firm.

We're now going to begin with introductory remarks, so each panelist will have about five minutes to make introductory remarks, and why don't we begin with Gary.

MR. GRISWOLD: Thank you. Thanks for the introduction, and as was mentioned I am now somewhat retired but actually not totally retired, but I'm here on behalf of 3M, and thank you for having these hearings. I think they'll be very interesting. I listened to part of the hearing this morning and it was good.

Just speaking from 3M's perspective, the patent system is a very significant issue for our company. 3M and its affiliates own a patent portfolio of more than 6,000 issued U.S. patents. We have a long standing committee to protect our research and

development investments which totaled $1.4 billion last year and it's resulted in many inventions and innovative products.

3M's business interests are extremely diverse. We sell over 55,000 products in six different industry segments. The segments that range from industrial products from sand paper and adhesives, consumer products like post-it notes and Scotch tape, safety and security products like RFID tags and readers and respiratory masks, displaying graphics products like optical films for computer screens and reflective sheeting for road signs, telecommunication products like optical -- fiberoptic connectors and healthcare products like stethoscopes, dental implants and medical billing software.

Just as an aside, I actually managed the dental business for six years, so I ran an operating division of the company, which makes me a little unique in the patent circles I think.

One thing that 3M does very well is it takes technology from one industry, for example, abrasives and puts it to work into another industry like dental. We did that, and that's why the patent system is very important to protect those inventions because once we've done it, other people say, "Gee, we can make that

connection."

The bottom line is 3M is very interested in making sure we have a strong patent system and we often are on the offense asserting our patents but not always. Sometimes we're sued for patent infringement, so we like to see a balance to patent law and that's the way we've participated in the debates that have been continuing on patent reform.

MS. MICHEL: Thank you. Carl?

MR. HORTON: I do want to think the FTC for holding these hearings and for allowing companies like GE to come in and give our thoughts and opinions and perspective on the issue of intellectual property.

I think it's not only important today but I think it's going to be increasingly more important particularly in the environment like we have now. I thought I would give a 60 second version as well about what GE is.

It's not surprising we're a quintessential conglomerate, and that we've got a lot of businesses in a lot of different spaces, but the way I kind of break it down is I start with the technology pieces of it and that's what we call our infrastructure business, and as the name applies, it's products necessary to build up the infrastructure of our country.

So you would start with energy and supplying energy as well as the oil and gas equipment and pipelines that feed that. Then we get to the transportation segment where it's aircraft engines and avionics as well as the rail systems that move products from one end to the another. Then finishing that out with probably security and water.

Then we move to another industry segment that we're in which is healthcare, also a significant business, although only about at third of the size of the others, but still about $17-18 billion.
We are predominantly a diagnostics company, all the equipment and life science tools around the diagnostics as well as information technology within hospital and other health care information technology within hospital and other health care.

Third, is the consumer and industrial business, products that people tend to know a little better, lighting, appliances and things like that, as well as lesser known products along the electrical infrastructure pipeline, so once the energy is generated, anything that's necessary to get it from the generation side back into the home or an office building or a plant as well as the safety electrical infringement that accompanies that as well as factory

automation and the like.

Then finally one of our other technology or investment intensive businesses is NBC Universal where we are a broadcast company, a media company that owns a number of different cable channels.

And then finally the part of the company we don't like to talk about in today's environment is financial services, so it was a very big part of our company. It's now a lesser part of our company but still very significant, so we're in consumer and commercial finance.

So that is the background. You had asked a main question around the uses of IP, and as I look at our company - and the various companies in our company - we really break down the uses of IP into three buying categories: Offensive, defensive and facilitative, and not surprising you see a correlation.

Those businesses that tend to use it offensively are those that invest most heavily in R&D or invest heavily in the contest side with respect to NBC Universal, and where the degree of predictability - unpredictability is the highest. So where you got that kind of a business model, you need very strong IP rights to guarantee that you will get a return on the successful investments sufficient to make up for the

unsuccessful investments.

Then we have those that are more defensive where I think that the R&D investments are a little lower, the unpredictability is also much lower, and therefore you have a lot more competitors. The products tend to be a little more commoditized, and so we tend to build our portfolio primarily with gaining some competitive advantage for the features that we may put forth in the market first, but for the most part, I would say that their structure around IP is more of a defensive model.

But I would say for all of GE, the IP serves as a very valuable function in being a facilitating force in collaboration with third parties, joint ventures, joint developments. It's a tool that enables us to do more business with more players in a more open and collaborative fashion.

So with that as kind of the backdrop, that's how we view IP, but on balance I guarantee we see IP as a very strong motivating force to drive innovation and investment in R&D. I also see it as a strong factor in preserving American jobs because it's one of the few defensive tools we have left to kind of keep those jobs here in the U.S. and keep the low cost would be copyists or fast followers if you want to call them that from

taking over where we have invested and driven forward technology and innovation.

MS. MICHEL: Steve?

MR. MILLER: Thank you, Suzanne, and thank you for inviting Procter and Gamble to participate. Three billion times a day Procter and Gamble brands touch the lives of people around the world. We have a strong portfolio of trusted quality leadership brands including Pampers, Tide, Pantene, Bounty, Crest, Olay and Gillette.

The P&G community includes approximately 138,000 employees working in over 80 countries. In 2008, *Business Week* selected P&G as the world's 8th most innovative company. While many associate innovation with computer companies rather than consumer products companies, that association is too limited.

At P&G innovation is our life blood. Innovation is everything that we do that improves consumer lives and improves the value consumers get from trusting P&G brands including new products and packaging designs to improvements to supply systems and organizational productivity.

P&G invests over $2.2 billion per year in research and development and we employ over 8,900 scientist and 29 research centers in 13 countries.

Patents and trademarks protect this investment in R&D as well as ensure P&G maximizes its return on its investment. Without strong IP protection, the value of our brands can be significantly diminished. Competitors would be free to copy our technological and commercial innovation without making the same investment or incurring the same risks.

IP provides us a competitive advantage that leads to increased value for shareholders and improved products for consumers. P&G maintains over 36,000 active patents worldwide and over 110,000 trademarks worldwide.

Traditionally, P&G's success resulted from internal invention that led to innovation. In 2000, our CEO, A.G. Laffley, challenged the company to reinvent our innovation business model. He understood that the key to future sustained growth was a new concept of open innovation, leveraging one another's innovation assets.

He made it a key strategic goal to acquire 50 percent of P&G's innovation from outside the company. This year P&G will exceed that goal. Through our connect and develop innovation model, R&D productivity is increased by nearly 60 percent, and our innovation success rate is more than doubled while the cost of innovation has fallen.

An important learning from our Connect and Develop program was the realization that innovation was increasingly done at small and mid-sized entrepreneurial companies, universities, government labs and by individuals.

These entities were eager to form partnerships with industry and to license and sell their IP. One critical aspect of this program thus became the ability to create and optimize the value of IP for both P&G and its partnerships through sale, licensing, or alternative

means of commercialization.

We've restructured our thinking on ownership and utilization of IP to better benefit all parties. The licensing of technology provides P&G with access to other's IP to accelerate P&G's innovation. We do much more in licensing of technology than we've ever done before.

We also out-license P&G's internally developed IP. The out-licensing program results in a source of revenue, decreased costs, and new opportunities for licensing joint ventures and strategic alliances. Over $3 billion in sales by other companies is powered by P&G IP.

In terms of patent litigation, P&G is typically

about equally enforcing its rights against infringers and a defendant. Because we are in both positions we take a very balanced viewpoint on litigation.

As a defendant, patent assertions has some effect on our ability to innovate in that it divers research away from core research. However, given the time and effort we devote to avoiding issues with other patent owners before we market our products, this is a minimal cost compared to the overall R&D budget.

Rather than hindering innovation, we often find that patents and patent litigation spur our competitors and us to find new and innovative ways to solve the problem by designing around the patented invention, often leading to a better and cheaper solution for consumers.

I look forward to discussing these issues in the roundtable, Suzanne. Thank you.

MS. MICHEL: Thank you. Thank you very much. Richard?

MR. PHILLIPS: Thank you very much for the invitation today. ExxonMobil probably needs no great introduction. We're an integrated oil, gas and petrochemical company. We use innovation and technology to find, develop, produce, and refine fuel, lubricants and petrochemicals in over 140 countries around the world.

Research and development is key to our existence. We invest more money in R&D than any of our competitors in any nation of the world.

We use that technology not only in our own operations but we license dozens of our competitors in dozens of countries around the world to use technology that we have developed. But for a strong patent system in the United States, much of that technology would not be developed, or if developed, would not be licensed. A strong patent system is key to us.

MS. MICHEL: Jennifer, and thank you for stepping in. We very much appreciate that you're here.

MS. STEC: Thank you very much, and thank you inviting Ford to participate. As with the other companies, patents are very important to Ford, and I don't think Ford needs any explanation in terms of its product. In fact, we've been divesting everything that is not very core to automotive.

In that regard, we've still been focusing on improving the technology and fostering innovation in our vehicles, and for those kinds of activities and our R&D patents and the IP system are very important to us.

First of all, they help us provide hard core inventions. They help us to encourage our inventors and engineers to keep inventing, to come up with new ideas

and to be rewarded for their competitions.

They also help us leverage that investment in joint ventures and other kinds of relationships that we have with others. It's a way for us to get value and to bring equity into a transaction in order to get something back.

We also use patents to help support our brands and our advertising. Recently, we've been advertising patents that we've obtained in vehicles and like everybody else we use patents for defensive reasons. Each year, Ford files about 500-600 patent applications in the U.S. on inventions that we make in the U.S. as well as additional patents overseas.

We have a very active licensing program and bring in tens of millions of dollars a year in licensing of technology -- not only patents though -- software and know-how and other kinds of property. We are called upon frequently to defend against patent infringement allegations, and we also enforce our patents. Most recently we enforced our design patents on body panels in the ITC.

MS. MICHEL: Carl gave us a very useful framework by talking about the offensive use, the defensive use and the facilitating use of patents and, Steve, you talked a lot about Procter and Gamble's

reaching out to bring technology into the company. Can you elaborate more on that and how it's going? Is that successful, a successful program? Do you see it continuing at P&G?

MR. MILLER: It's going to continue for a long time. I think I cited some stats in my opening statement, but that it's actually reduced our costs of R&D. We're making more connections and we're bringing more products to the marketplace than we ever had at a faster rate, and I'm proud to say that many of the folks on the panel are my suppliers.

And so we've reached out and we've worked with them and we've used the expertise and the knowledge that they have and the intellectual property that they have and bring that together with ours, and one plus one makes three or five instead of two, and so I think this has been a huge benefit but it wouldn't happen without intellectual property.

If each side wasn't able to bring, and protect what they bring, into the relationship, and then manage how IP comes out of the relationship, there wouldn't be an incentive for anyone to get together because we would not be able to take that risk because others could come in and exactly duplicate what we do, quickly and without the risk and the money that we put into it.

MS. MICHEL: So you're talking about bringing in technology from both larger companies and then in your opening statement you talked about start-ups and universities.

MR. MILLER: Right.

MS. MICHEL: Does the process work any differently depending on who you're dealing with, a start-up versus --

MR. MILLER: Not really, other than the sophistication of the party. We found that small entrepreneurial companies, universities, and even the government is very receptive. We've all heard over the last 10 or 15 years about monetizing your IP assets, and so that word has gotten out.

So they want to partner with good partners, and in our case and I know in the other company's case, they know how to market products. They know how to bring things to market quickly with their expertise, so usually the small entrepreneur can get their product to market much more quickly by partnering with a larger company, and it works extremely well, just as well as with the larger companies.

MS. MICHEL: I will say that any panelist who wants to comment, just turn up your table tent, and we'll call on you and we'll throw out more questions.

Steve, I want to follow-up for just a minute because this is such an interesting and I think important area that we've been hearing about from a lot of different angles, and this is our first time hearing about it from the large company perspective.

When you're thinking of bringing in technology from a start-up, how do you filter through the different possibilities that are out there or identify a promising technology? Are people bringing you a lot of offers and how do you get through that?

MR. MILLER: It's a little bit of both, which is really great. Because of the connections we're able to make, both with the large companies and small companies and individuals, people are now willing to bring things to us as well as us going out and searching the marketplace for those ideas that we think will work.

And by them bringing it to us it's often things that we haven't thought of before. To give you an example, Mr. Clean Magic Eraser which I hope everyone has seen or used, was an idea that was in Japan that someone found and then came to us and said, "Would you think this is a good idea?" We were able to bring it to market very quickly based on that.

So it's those connections that normally our researchers wouldn't make -- that says we can combine that

with Procter and Gamble technology and make this even better for the consumer, and that's happening faster and much more efficiently because they know we're willing to partner and give them a win/win situation. They can own some of the intellectual property or they can be licensed out so they'll get revenue from us using their technology.

MS. MICHEL: We've often heard from independent inventors and start-ups that it can be very hard just to get a foot in the door of the large company and partly because of the large number of these offers that a big company might get and how to think of it.

Do you have any ideas or comments on that problem? Do you just have people who filter through all these ideas that come in and try to spot the good ones? Is there some other mechanism?

MR. MILLER: The problem is I think everyone thinks they can invent detergent or they can invent a diaper, but they don't realize the high-tech that really goes into these products but for every one idea we would accept, there's probably a thousand ideas that we don't, so it does go through a strong filtering process.

But our people still look at all of the ideas because no idea is a bad idea, and there may be one that fits, and it can be difficult but I think what -- I know

some of the other companies here is you change the culture from a not invented here culture where everything has to come from your own laboratory, to boy, there are some pretty smart people out there and they have great ideas that they can bring to us, and when that happens you make more and more connections and those better ideas tend to flow in.

MS. MICHEL: Thank you.

MR. IRIZARRY: P&G's C&D program has received some collaborations and we're aware of it and it's even got a web site I saw this morning, and I'm just wondering if the other companies are thinking about doing some of the same thing or similar thing or have something in place already?

MR. GRISWOLD: 3M historically has operated with outside ideas a lot. Most people would think that we don't because we tend to have a reputation for substantial internal innovation but actually we have that but we also -- that tends to be stimulated by these outside ideas.

Actually many acquisitions that we have, when they come into the company, they wind up stimulating whole new areas and our researchers and connections that they wouldn't have before and that happens with individual ideas that come in. We are a supplier to P&G

and one of these companies that worked with P&G cooperatively, and it works well because we have certain expertise, P&G does.

We want to make sure that downstream we have an ability to operate our business the way we need to because we're using the technology broadly. P&G wants to be able to operate effectively through that cooperation, so it helps define the relationship.

The patent rights are very helpful in defining who does what, how the cooperation works and organizing the whole function, so it's a really good way for companies to get together so that's what we've done.

MS. MICHEL: Carl, you also mentioned using patents to facilitate.

MR. HORTON: Yeah. Along the connect and develop front, I would say we kind of -- we run the full spectrum, from our more consumer driven businesses, a little more commodity style. We tend to have a more collaborative approach and we do some connect and develop, not nearly the kind of success that P&G has experienced.

On the other end of extreme you're talking about jet engines, and not a lot of people tinker with them in their backyard so we don't get a lot of ideas or help in that area, but I would say in the healthcare space we see a

fair amount of activity and it's largely the way that model has evolved. We take in a fair amount of technology in the life science space where people do go out, and a fair amount of research is done in labs all over the world.

And then with the equipment that we put in the hospitals, we create some fairly sophisticated equipment that university professors and doctors tinker with to find better ways to use it. So they are the ones that really put into practice and develop new practices, new processes using that equipment that we then license back in, make it part of our standard offering and push it back out again so there's a fair amount of collaboration but it's with I would say a more sophisticated base predominantly within the university setting.

MS. MICHEL: Any thoughts on using patents to facilitate joint development cooperation agreements, bringing in technology from outside of the company?

MR. PHILLIPS: We have a slightly different angle on this that our business is different. We're largely a resources business. Most of the world's resources in oil and gas are owned by government, not private entities, and it is almost impossible for any private company to own those in another country. The

way we get access to resources overseas in most countries of the world is by doing a venture of sorts with a government or quasi-governmental entity, and the way we get access to that is through three things.

We present ourselves as being more talented from the standpoint of managing huge capital projects. We can bring the capital to those projects, but the third advantage we bring is technology, and the thing that makes ExxonMobil and some of the other majors a very attractive partner in many parts of the world is that we can bring a packaged technology to find, produce and deliver at low cost and environmentally safe manner, resources that governments, acting on their own, could not produce. They may have the money but they don't have the expertise.

So where do patents come in? Most of the countries in which we operate do not have effective intellectual property systems, and that is a fact of life. If you're going to operate in parts of the world, we don't need to name countries, you are not going to be able to protect your intellectual property there, but I must be able to protect it in the United States. I must.

To the extent that I disclose technology in some parts of the world that necessarily will come into the

public domain, I need to be able to protect it in the United States, in Europe, in Canada, in Japan and in Korea. To the extent we have an effective patent system that gives me, ExxonMobil, a stronger tool to get access to these resources that our countries needs.

MR. IRIZARRY: Why do you say that you must protect them in the United States if they're not going to be effective in using them in other countries?

MR. PHILLIPS: Well, the United States of course itself is a very large market for hydrocarbons, and to the extent that people are actually producing hydrocarbons into the United States or importing into the United States, I can use the U.S. patent system to protect our position, so it creates a greater incentive to me than would otherwise exist to invest money in R&D, to protect technology at least in those parts of the world with an effective intellectual property system.

Imagine a world in which the United States did not have an effective intellectual property system. What advantage is there to ExxonMobil to investing a billion dollars a year, developing new technology for finding oil inexpensively if that then can be disclosed to and used by our competitors, not just say in the Middle East but also in North America?

MS. MICHEL: So we have talked about licensing

in. What about licensing out technology? Is that an important mechanism for partnering or just for bringing in licensing revenues to your company, and what are some of the concerns that you face in licensing out your company's own technology?

MR. GRISWOLD: I can start that. We didn't license out that much, 3M didn't for many years but in the last I would say eight or so years we've done a lot more of it. The benefit has been that certainly we've put to work investments that we made in the past and they converted into intellectual property. So that was valuable. We got a return on that so that was very good.

The other thing is when you license somebody else to use some of that technology, you wind up developing a relationship then that leads to another relationship and then perhaps we wind up with a joint collaboration which leads to more technology development, so it spurs relationships, so it's been very helpful. The whole concept of monetizing assets or putting to work assets that you don't use has been helpful to our company.

The reason we didn't do it so much in the past is because of what I mentioned earlier is that we tend to put IP to work that is developed in one area like

abrasives that I said we used for dental filling materials somewhere else. We don't know. It may wind up over in another area so you're always cautious about licensing it or working with somebody that you're licensing it out in this area when we might want to put it to work over here so you have to be careful, but it's been very helpful, very good for us to do more licensing out in our revenue, and that area has jumped dramatically.

MS. MICHEL: Carl?

MR. HORTON: Yeah. I would say we license out and not infrequently, but I think if you were to look at our total patent portfolio I think we have about 18,000 active patents. There are far more that are licensed to competitors and business partners than just simply licensed out for cash.

That is a primary source of establishing some of those relationships. As Steve mentioned earlier without the clear parameters that the intellectual property gives you, it's hard to enter into those transactions to know that I bring X, Steve brings Y, and together we can go and venture in a new place, knowing that I have a certain amount of protection to cover what's important to me, and he has adequate protection to cover what's important to him.

That's the kind of certainty that we need to enter into that relationship. Absent that, having those clear boundaries and parameters defining and giving us some degree of control over our future, because I think in the end it's knowing that we can control our future that gives us the confidence to take that step forward in an unknown direction.

MS. MICHEL: Steve?

MR. MILLER: I think as Carl said it's a lot about those connections. To give you an example we had invented some enzymes that were useful for detergent. Well, we thought they were only good for detergent but somebody came and said, "We would like to use those to clean contact lenses." So people see your patents. They see your technology. They realize there's another use for that technology, and then you can help the consumers, you can help the public by then giving that technology for a different use that you wouldn't have thought of or probably didn't think about commercializing in the first place.

So it's a win/win for everybody. We get new to the world products that we never thought of, but we're also rewarded for that innovation in making the new technology.

MS. MICHEL: Jennifer?

MS. STEC: Ford does substantial licensing-out, although we don't call it licensing-out. We call it technology commercialization because in our view that's what it is. It's more than just bare patent licenses. It's bringing technologies that we've developed to others for various reasons. One obviously is for income.

The other is we've been able to do this kind of thing to improve relationships. We have a new program with minority suppliers where we try to help them by making some of our patents and our intellectual property available to them, and another way we reap benefits from that is through improvements that others -- that licensees might make to a technology.

For instance, we have some basic night vision technology. Night vision is something that just hasn't quite made it into vehicles. By licensing it out, we take rights and improvements back so that applications for night vision, which might be security systems or those kinds of things might foster improvements that ultimately we can use someday if they end up implemented in vehicles.

MS. MICHEL: Yes. Richard.

MR. PHILLIPS: Folks talk frequently about monetizing existing intellectual property. It's

important to remember that the IP system promotes not only transferring technology you've developed for your own use, but also many companies, including ExxonMobil, have businesses that themselves are developing and licensing technology, not necessarily technology that you use commercially.

Like ExxonMobil, many of our competitors developed centers of expertise that become very, very powerful research engines. We run that engine, develop that technology, license that technology to other companies, some of our competitors, even where we don't use the technology ourselves. We invest money. We transfer the technology to somebody to help make them more profitable. We get some cash back. Everybody benefits. The consumers get better products.

So it's not just monetizing existing intellectual property. It's also the patent system a driver for developing technology even where a company may not use it itself.

MS. MICHEL: In that scenario, when the initial thinking is done about going down a particular R&D path, is it part of the thinking from the beginning we may license this out and not develop it ourselves or is the thinking in the beginning this is something we might want to do but then you get farther down the line and

for whatever reason decide to license it out?

MR. PHILLIPS: In our case, we never set out to create technology that we don't intend to use.

MS. MICHEL: Okay.

MR. PHILLIPS: But often, we'll create technology that for whatever reason we decide we're not as well positioned as a competitor may be to use. Once we've developed it, we say "If we invest another $100 million and develop this technology, we can make $200 million, and so we get a group of scientists with great expertise involving technology that's used by other companies but not by ExxonMobil but we're making money on it.

MS. MICHEL: Okay. Carl?

MR. HORTON: I was going to say I would add to that the other phenomena that takes place very frequently is we're faced with a problem. We don't necessarily know what the winning solution will be so we invest in multiple different R&D efforts not knowing which will be superior at the end of the day but you have to see them to a certain degree before you can make that determination.

Ultimately, that leaves you with three or four or five or six areas of technology that weren't commercialized because you picked the one that was best

and went forward with it, but you're left with an investment, a sunk investment into R&D and those other areas so naturally you look for ways to find applications where it could be used or license it out to others in other industries or even within your own industry.

MS. MICHEL: Okay.

MR. GRISWOLD: I'll make one point on that.

MS. MICHEL: Yes, please.

MR. GRISWOLD: When you get done with all this R&D we're talking about, you have notebook records or you have some record of it. But, really, when it gets down to it, the thing that turns that into a return is the patent rights. If you don't have the patent rights, you have notebook records, this information in people's heads but you don't have assets to put the work and define what you've done, and it's not easily transferable.

There is trade secret you can transfer and do that sort of thing but the patent rights are really the key ones.

MS. MICHEL: Okay. How does what we've been talking about differ from what Carl called the offensive use of patents using patents to maintain an exclusive position, maybe just an exclusive feature with regard to

your own technology developed internally? Is that something also that's important to your company, maintaining exclusivity and how do you use your patents in that context? Is it important to be clear that you're willing to go to court if necessary? Gary?

MR. GRISWOLD: Absolutely. If you're not willing to enforce your patents, then over time you have a reputation that people get closer and closer to your inventions and pretty soon they're -- what you've developed is not valued by others, so it's important to enforce your rights, no question about it.

Also if you want to -- if you are, as some of the others have talked about, willing to license those rights and different uses, it's also important for people to understand that, so that they know they can collaborate and you can actually get the leverage of other companies putting to work your technology in areas that you wouldn't put it to work in, but the willingness to enforce is important.

MS. MICHEL: Okay. Defensive use of patents. We heard earlier today about the IT industry, maybe perhaps buying or developing patents to be able to use a portfolio defensively if someone else charges that company with patent infringement. Does that happen? Does that dynamic play out at all in your companies and

in industries, that you acquire patents thinking -- either through internal development or purchase with the thought I want this just in case someone comes after me? I'm trying to understand if this is an IT only phenomena.

MR. GRISWOLD: I would say we tend to have more of -- 3M has more of -- I would say more of an optimistic look. We tend to think in terms of "What can this do for us business wise?" We have acquired patents and technology that have added to our -- helped other investment in developing the technology, so when we get downstream we have a better scope of protection for that technology against other people that would infringe it.

So that would be more of a view of -- more of a positive view of the situation than putting together a portfolio for use as you describe.

MS. MICHEL: Okay.

MR. MILLER: I think the thing that we tend to do and a lot of other companies tend to do is they acquire patents to get freedom to practice or freedom to market. They don't acquire them to look for trading in the future. When we go out and we license or we purchase rights, it's because we think we're going to market something in the future that may be blocked by

that patent or that we may be innovating into that arena. Now, sometimes we don't, and then we have that asset and we have to determine what we're going to do with it, but I don't think that strictly speaking we would acquire assets just to have them for trading purposes.

MS. MICHEL: Carl?

MR. HORTON: I guess the only two areas that I can think of where we don't do exactly what Steve described, which I think is the vast majority of why we would license in or require patents is for our own access to market. In the life science business we have acted as an aggregator of types for some patents that we didn't necessarily practice but that made it easier for us to get the whole package of technology to market because part of it involved licensing the underlying technology, and people weren't willing to do that if they had to license it from 10, 12, 15 different entities.

By aggregating it ourselves, we essentially became a one stop shop and rights and funds flow went back to everybody who contributed to it but we just acted as the go-to market channel.

I would say the other time where we acquire without absolute certainty that we're looking first to

market is where you're going down multiple paths simultaneously. We may license in for several different patents, again not knowing which one will play out in the long run. We firmly believe that the most cost efficient way to deal with other's patents is up-front, identify them early, license them in where you can't design around them and make them part of your commercialization path knowing at times you're going to license in more than you need.

But if it's done primarily on a royalty basis and you don't commercialize it, you're only out the up-front money anyway.

MS. MICHEL: Okay. What are your abilities to do that, to identify the patents up-front and bring them in? How confident can you be that you've identified all the patents that you need, and if you can't be what are the problems you face in doing that?

MR. HORTON: We've had reasonably good success I would say. There's few of the litigations that we can point to where we didn't identify the patents and maybe had some disagreement over whether or not they should have been entitled to the patent, the scope of the patents. That happens fairly frequently, but very few times where we didn't see the possibility, and again those breakdown into two camps: One, where we think

that the patent holder is straining the interpretation of the claims well beyond reason so we didn't even think it was an issue to begin with, but secondly, occasionally you don't pick up everything.

And I think there is some minor differences between the types of technology. The chemistry arts are being probably the simplest because the convention is so clean and consistent throughout the industry so they're easier to find the right patents and the total number is probably a little lower.

MS. MICHEL: By that when you say the convention is consistent, you mean the terminology within the industry?

MR. HORTON: The terminology.

MS. MICHEL: So you can tell by reading a claim what it covers.

MR. HORTON: Yeah, absolutely, an alkali group is an alkali group.

MR. PHILLIPS: I wish I could hire you. I have more trouble.

MS. MICHEL: We'll go to Richard because I would love to hear about his troubles, and the other technologies you deal with, so how does it vary?

MR. HORTON: Their tends to be -- in some areas we have just a higher frequency of patents so there's a

lot more to sort through. Again we try to automate as much as that as possible but sooner or later you just have to plow through one at a time and read the claims and develop that certainty.

In the software arts, the same kind of thing, the number is higher but people tend to call things very differently. Each of us could describe it in almost a different way, and so the automated portion of finding the right prior art is a little more tricky, a little more challenging.

MS. MICHEL: All right.

MR. IRIZARRY: In a company such as GE which is so diversified, in applying for a patent, in drafting the patent application, do you use different criteria that reflects the different industries that you're going to be using them in, different criteria for IT technology than from life sciences technology or is it just one big patent application pool?

MR. HORTON: We use the same generic criteria. How they play out within a given business or P&L may differ and the amount that they're willing to invest in intellectual property based on the potential return may be lower depending on the power, so to speak, that the patent would enable them over the long-term. So, we see

differences in the amount they invest in IP but we use the same general criteria to determine whether or not to file a patent application and the same criteria in terms of clearance to do the opposite review.

Again the investment levels vary slightly but the approach is very similar.

MS. MICHEL: Richard, what is your confidence in your ability to identify patents in advance and clear the rights when thinking about new products?

MR. PHILLIPS: I was poking a little bit of fun at Carl, and really unfairly. He's certainly right, that those patents that cover a pure chemical are relatively easy to analyze. The challenge of course is that patent attorneys know that, and a lot of our competitors don't draft claims in a manner that makes it easy for me to analyze.

Most of our products are not individual chemicals. It's not as though we're a pharmaceutical business - we are instead consumers, if you will, of chemicals. Gasoline is not a molecule or ten molecules. It's many, many, many dozens of molecules. Oil is even more complicated; polymers more complicated yet.

And the challenge we have is that often some patentees will develop terms, we call it a

parametritis, parameters that are not known and recognized in the industry. They'll create a term, and they'll say, we claim a polymer, we claim an oxyl-alcohol, we claim a method of seismic stratigraphy that has some property that is not recognized in science, so you're put to a cruel dilemma. Do you try and go in and understand that property?

It may be very expensive to determine just what the patent covers. In Europe, and many other countries, there are pretty good systems to deal with that, like the patent opposition system. In the United States, I do not have an effective tool for testing the scope against the validity of a patent, and that is a fundamental failing in my company's judgment of the U.S. patent system, no good mechanism short of litigation, the courthouse door, for testing just what a patent really covers.

MS. MICHEL: Would there be any other ways to address that problem within the PTO, within the examination process?

MR. PHILLIPS: Well, reexamination of course has been in existence for a long time, and generally we feel it's not nearly as level a playing field as the opposition system that many other patent systems have, so we would favor a single phase opposition system, somewhat along the lines of what we have in Europe.

MS. MICHEL: Jennifer?

MS. STEC: We have almost two distinct worlds in that regard. One is the strictly automotive vehicle world in which our business works. The other world is all of the things that we buy from others, and we have very difficult time with respect to assertions of patent infringement for purchased parts, not only purchased components that we might buy from tier one suppliers but even sub-components of those parts, things like microprocessors and accelerometers, and it's almost impossible for us to go out and understand what the patent landscape is for all of the various intricate parts that end up in a vehicle.

MS. MICHEL: Can you rely on your supplier, the manufacturer of that part, to have been the party to clear the patent rights? Why does Ford need to worry about that?

MS. STEC: We don't and we do rely on the suppliers. The problem is when there's an infringement suit, the defendant is Ford.

MS. MICHEL: Explain why.

MS. STEC: They think we have deep pockets. It's very difficult for us to defend non-core businesses. We don't have expertise. We probably don't have the best prior art, and it's a lot more cumbersome and

complicated for us to get suppliers involved and get the real parties involved. I think their damages model usually starts with a theory that goes towards some percentage of the entire price of the vehicle, which is obviously very expensive.

MR. IRIZARRY: Do you ask for indemnification from your suppliers in the case that there is a patent infringement suit, that they indemnify you?

MS. STEC: We do.

MR. IRIZARRY: How does that work into this process when you say that Ford ends up being the defendant?

MS. STEC: Typically pretty good but everybody is always reluctant. There are assertions of infringement that the supplier might feel are unfounded, and so therefore, feel like we don't infringe. "We don't want to defend you because this is clearly not covering our product."

There are instances like when you're on a rocket docket and it takes a long time to get all those ducks in a row and to get all the suppliers involved and many times there's multiple defendants when we get sued. Typically there other automotive OEMs and it's enough of a struggle to get everybody together and on the same page early on.

MS. MICHEL: Will Ford and your supplier be in the same lawsuit then of multiple defendants? Will they go for both places in the distribution chain?

MS. STEC: No.

MS. MICHEL: You can't do that.

MS. STEC: And they don't. They don't want the supplier in. They want us in, and typically the supplier to the extent that they indemnify us or pay for our defense, will defend as Ford.

MS. MICHEL: Yes.

MS. STEC: Rather than jump in themselves as a defendant or intervene.

MS. MICHEL: I assume you've settled some of those lawsuits. In those settlement negotiations how do you get to a place of damages? What kind of damages can you agree to and I'm wondering how you talk about what the royalty base ought to be since this is the proverbial car that we're dealing with in the damages calculation?

MS. STEC: In our view, which is always different than the plaintiff's view, the value goes to the incremental improvement that the invention makes, not to the entire vehicle, but sometimes it's difficult. There are things like safety devices.

In one case we were sued on accelerometers for

safety systems, and the plaintiffs view is that we very actively market safety systems, and it's a bigger factor in the sale of an automobile than just some small percentage of the price for that little accelerometer component. It's a struggle.

MS. MICHEL: Carl?

MR. HORTON: I would say on the valuation question because it is so tricky, you could put ten patent attorneys in a room and you could get valuation differentials that would be several orders of magnitude different, and it's partly because they're context specifically. The value of a patent is truly context specific.

It may be worth X in one environment, one transaction. It may be worth ten X or a hundred X in a slightly different one, and I'll give you a perfect case in point.

We had a situation with a business partner of ours. We happened to hold IP that was instrumental in their space because we choose in the end not to do commercialize that because it wasn't core to our business. They were building a business model on it, they were new to the space so we allowed them to do it and we offered them a license under four patents for a particular value.

They came back with something one order of magnitude less because they just couldn't justify and we tried to explain why we thought it was worthwhile and part of that discussion was, look, you've got a competitor in this space that has better IP than you, it's very likely that they will sue you, but we couldn't reach agreement.

Six months later they were sued by their competitor in the way that we had anticipated. They came back and were willing to pay the asking price without any discussion and for only half the patents that we had put on the table initially. I mean, just because the context had changed and there was more certainty and now the value was clear that we were pretty much on point.

But that differential is always going to exist, that you could see the value of the patent quite significantly different. We see where we in-license the most technology we have the greatest experience. In the healthcare space we have determined our royalty base under almost every different model you can imagine, and it typically comes down to how is it easiest to do the accounting?

Is it easiest to do the accounting on some feature function of the software or is it easier to

account on how many times we ship a product with that feature in it? And the royalty percentage is drastically different but the total package price is about the same, but we do what is most economically feasible, easiest to audit, easiest to track and account.

MS. MICHEL: Do you determine that base first and then figure the royalty off of that?

MR. HORTON: We typically decide what the value is to the parties. If we disagree, which is typically the case, on the value, we'll talk about a royalty based on some structure that we agree upon. Again whatever is easiest to account for we'll base it off of that, and then we'll take one step further and say -- usually they believe it's more valuable because they think it will drive our sales by a 50 percent increase.

If we think we're going to see a 5 percent increase then we build that into the royalty structure. If it's a 5 percent increase as we think, the royalty rate is X. If it's 50 percent like you think then it's a sliding scale or some difference in royalty, so that we can account for the difference in what we think the actual value is, and then we let the market decide.

The market will tell us what it's worth. They

have to place some value on our ability to try to maximize whatever it is we're trying to take to market but otherwise it's the market that makes the final decision.

MS. MICHEL: Gary?

MR. GRISWOLD: One of the things that I think gets lost sometimes in these discussion about damages or licenses -- at the end of the day we're looking at the impact on a P&L, typically, of an operating business unit, and if you're looking for a forward reaching license, you're taking an exclusive license and you're going to add this product to your product line, a heavy driver on that valuation is certainly what's the value of it in the marketplace.

That's what you're looking at but in the end, the data converts into a number and a cost in your P&L and that has to fit into your whole business model of how you operate so that's an important thing particularly as you're thinking about bringing in technology that you're going to take a license under and then use, put to work and use that advantage in your product.

So, I think, sometimes we lose that perspective when we're talking about as patent attorneys as opposed to business people.

MS. MICHEL: Can others talk about your experiences in licensing technology and deciding what's a good price, evaluating a good price for the patent, thinking about what the base ought to be and what the rate ought to be? I would like to just understand some real world experiences in doing this, and if you just agree with Carl, that's great too or if you can tell us more about your own experiences.

MR. MILLER: Well, from our experience obviously one of the things we have to look at is what is the consumer going to pay at the end of the day. They're not going to pay $50 for a bottle for Tide so if somebody --

MS. MICHEL: It's good but not that good.

MR. MILLER: Someone may but usually not, so even though -- let's say we get a 10 X cleaning advantage by that invention being put into our product, then we may be willing to pay a bit more because the consumer is going to see the benefit. It comes down to what is the economic value of the benefit that we're going to see at the end of the day and what is the consumer willing to pay for it at the end of the day, and it comes down to a number.

And then I can price it based on the total packages that I sell of Tide or I can value it based on

that little piece of it that went into the product, but if it's 1 percent of a hundred dollars or 10 percent of a dollar, it's still a dollar, no matter what increment I pay on it, so the royalty and the base are fairly flexible because at the end of the day what you want to look at is what is the value that you're getting and what is the consumer ultimately going to be wanting to pay to get that feature.

MS. MICHEL: Do you agree with Carl then that the base is determined by the convenience of the accounting?

MR. MILLER: Normally, because it's much easier -- in our case we base it on cases is what we call it in our business, and a case may be let's say 144 diapers, and so rather than do a per diaper, my accounting people can do it much better on a case basis, and so you may set the royalty on that. You may set the royalty on some other base.

I don't think there's good understanding out there right now or on the Hill that the base and the royalty rate are the flexible numbers. It's what's the economic value that the invention brings.

MR. HORTON: Absolutely.

MR. PHILLIPS: Absolutely.

MS. MICHEL: Everyone is agreeing. Richard is

nodding. Jennifer is nodding. Okay. Thank you. That's very helpful.

Have any of you had experiences or had to deal with what we talked about in the IT panel as the secondary markets for patents, patents that are being bought and sold and licensed to companies that have independently invented whatever? It's covered by the patent and incorporated into a product and then a patent holding company or a troll comes and says, you need to pay -- that's one way in which that market works.

Another might be that a patent broker comes and says, here's a patent you might be interested in buying, it's on the street, do you want it? Is that anything that affects any of your companies or industries?

MR. MILLER: I'll start out on that. I think if we want to use -- I don't like troll. I'll use non practicing entity.

MS. MICHEL: I would like to distinguish though between patent holding companies that's not transferring technology. This is about rights clearance and not technology transfer because you're already using the technology.

MR. MILLER: Okay. But I think we've had that problem since the beginning of time. We have had people

that have always said, well, look I have a patent that covers this and you owe me a lot of money, so this is not a new problem I think to any of us. It's problems that we've dealt with for years. The difference is that we tend to invest early on in the process and we'll try to know all of those patents before we even go to market and we'll either clear them before the product hits the marketplace or we'll have designed around it.

So there's typically not that problem or we'll know that the patent's invalid because I think most of our companies have the policy that we will not infringe another's valid patent, and so we're willing to invest up-front to make sure that doesn't happen.

Now, there are some that may get through that we don't know about or they're straining the reading about what their patent could potentially cover, but we've dealt with that forever, and what we have done is usually we've gone to court and we've litigated those issues because we either know the patent's invalid or we're not infringing.

So I really -- maybe the rest of the panelist can speak to that but I don't see this as a major new revelation to our industry.

MS. MICHEL: You've said you've seen it forever. Has the frequency at which you've seen it increased at

all in the past ten years? Five years?

MR. MILLER: At least from my perspective I haven't seen an increase. I don't know about anyone else.

MS. MICHEL: Jennifer?

MS. STEC: Significantly for Ford. At any one time we used to have two lawsuits, and now it's a dozen or more of non-practicing entity suits.

MS. MICHEL: Is the increase almost solely attributed to non-practicing entities or is there -

MS. STEC: Yes.

MR. IRIZARRY: Do you think that's common throughout the automotive industry or is it particular to Ford and is it focusing on one type of technology, say a technology that involves electronics versus other types of technology?

MS. STEC: No. It's various kinds and in addition to technologies, it's systems, IT systems, web sites. We had a lawsuit involving audio and video streaming, so things that are not very core to our business.

MR. IRIZARRY: And is that also true to the extent you know for other car manufacturers like GM and others?

MS. STEC: Yes, yes, yes, yes. Most of the time

they're in the same lawsuits that we are. With respect to the other automotive companies we've managed to get along. It's rare that one vehicle manufacturer sues another. We've found a way to license. It's not always perfect, not always easy. There are always issues on value and that kind of thing, but pretty much in the automotive OEM industry there aren't many lawsuits in between companies.

MS. MICHEL: Carl?

MR. HORTON: I would say if I took a long look over a ten year horizon the frequency has probably gone up over ten years but what we've seen more of I think than the change in the frequency is the parties doing it. What used to be a lot of contingency fee cases eight years ago may now be traditional troll-like patent holding entities today, but the fact of the matter is for us we're a big company. We've always been a big company so we're always a big target.

That's just the way it's played out, so we haven't seen a dramatic rise in frequency but the composition of some of those cases has changed.

MS. MICHEL: Okay. How has GE responded or any of your companies responded if at all to that increase?

MR. HORTON: Again we've run the economics. We've lost some big cases. So it's not like we're

immune from the problem for sure, but about ten years ago when we had a big case, the *Fonar* litigation, it cost us over $100 million. We went back and we structurally looked at the whole of the system and the issue, and we broke it down and what we do today that is the biggest difference is our clearing processes are three times better than they were ten years ago.

We weren't good enough. We weren't tracking them well enough. We weren't investing enough on the front end, and so we redesigned our systems and redeployed assets to get that front end right. We look at a lot more patents. We look at them more carefully. We oppose more patents. We watch them from cradle to grave.

MS. MICHEL: You oppose patents. How do you do that?

MR. HORTON: In Europe we keep a good eye on them. We'll watch them in the U.S. We'll get our opinions. We'll do our due diligence. The best avenue for us is to design around. It's almost always the cheapest. We can't live with the uncertainty. We'll either design around it as a first option. If the price point is too high we'll try to license it in and usually there's some kind of parallel structure going on for both of those. Until we know the price, we don't

know whether it's cheaper to design around or license in.

If the price is right, we'll license it in and take that path. If we don't, then we'll design around but if we can't see a good design-around, then we almost have no choice but to license it. We'll put structures in place. If there's any degree of uncertainty around the patent, we'll even agree to license it subject to some future resolution. There may be a mediation around the scope of the claims or an arbitration from some third-party arbitrator to say what the scope is and the value may change on the outcome of that.

If it's a pending application, if it's the outcome of opposition in Europe, what will that determine, so there's a lot of ways to get at that uncertainty that's inherent in that dynamic, but we've just found it so much better to deal with it on the front end, not the back end.

MS. MICHEL: And the design-around cost, is that something of a cap on what you're willing to pay?

MR. HORTON: Absolutely. You get back to the economic value question, what is it worth? If I can design for a penny less I'm going to design around, it's that simple.

MS. MICHEL: Gary?

MR. GRISWOLD: The addition I would make on that is that there are times when you have to try cases.

MS. MICHEL: Yes.

MR. GRISWOLD: And a good program in addition to all the things you've talked about as far as good clearances and everything else is if you have a case that's just inappropriate, you have to be willing to try it just like you're willing to try them on the offense. If you're not willing to try cases, you tend to have an outcome that you don't like so you have to be willing to do that and I think most companies certainly sitting here are willing to try cases.

MS. MICHEL: Given the high cost of patent litigation how does that affect that decision of one to try a case? If you can pay to get rid of the problem for less than it's going to cost you to go to trial, do you ever go to trial anyway?

MR. GRISWOLD: Sometimes you would because there's a history you're developing. It's the next case and the next case so you need to be -- you have to work off of principle.

MS. MICHEL: Carl?

MR. HORTON: Occasionally a deep pocket can work in your favor. You do want to establish certain

precedent that we won't be shaken down by a really weak patent or somebody who thinks they can just hustle up a quick settlement out of us.

MR. GRISWOLD: Going back to your first question though on this, there have historically been people that have developed patents that they don't put to use or that they don't transfer technology and there's an infringement question, and these patents -- the secondary market is providing an opportunity for people to get value, for independent inventors to get value from their work.

So there's another piece to this and there was a struggle -- all the companies sitting around here have been around for a 100-150 years or so, and we were just talking about that the other day when we were talking about this. But, anyway we're long in the tooth. We have -- over time, people have come to us and asked us to take licenses for one reason or another. This provides a basis to do that. Actually, if it's handled in an appropriate matter, it can be effective way to handle rights like this.

MS. MICHEL: Steve?

MR. MILLER: I'll just add two points because I think it's on point where we want to go. I think all of us or most of us feel that an opposition system that we

could oppose patents early in the Patent Office would help get rid of some of that problem, and then if we could strengthen the examiner's ability to have the time and the tools to do a better examination job, that we're not going to see some of these poor patents that are coming out of the Patent Office.

So if there are ways that we can -- this is one of my big issues -- fully fund the Patent Office so they keep their money and we get a good examination and then we have a quick opposition procedure in the first 12 months, a lot of these problems will be solved.

MR. GRISWOLD: I would add one point to that.

MS. MICHEL: Yes.

MR. GRISWOLD: To me, the way to get the patent system to operate in its best manner to incent innovation is valid patents issued promptly, cost efficiently. You do those three things, and you're going to wind up incenting innovation because the rights are clarified earlier. The inventors have rights to then transfer.

You need cost efficiency so that the cost of doing the process is effective. And valid patents – That's another key piece, the valid patents. If you have those things -- that goes back to the operation Steve was talking about at the Patent Office. If we have that, I think you deal with many, many of the

problems that people talked about today.

MS. MICHEL: Carl, do you want to add to that?

MR. HORTON: Yeah, the only thing I would add to that is the 18 month publication. I think it would be worthwhile to know because occasionally there are some things that we don't see. We tend to pick it up later than we would like, and that always causes trouble, especially where our cycle times are more compressed.

I mean, for the longer cycle businesses like aircraft engines and turbines, trust me, we've seen them plenty by the time that the product hits the street, but some of these others you have to see them promptly and if they can be kept secret, then that makes that job a little more difficult, so having that capability would be very helpful.

MR. IRIZARRY: You know it's been said in other forums that companies, at least at some level, will not look at competitor's patents because they were concerned with willfulness and even though that has changed, the law has changed a bit there, I take it you've been doing this for a long time and this was not a concern of companies such as yours?

MR. GRISWOLD: No.

MR. MILLER: No.

MR. HORTON: No.

MR. IRIZARRY: So you would start a company --

MR. GRISWOLD: That's almost an offensive comment in my respectful opinion, because the patent system is about incenting innovation, looking at the technology that's developed, and then to be concerned that you have an infringement problem and you're not willing to look at what other people are doing and the patents out there? How can you -- I don't know how you can defend that.

Of course I come from a history of clearance. We always clear, and we look when we are coming up with a new product, but also you get ideas to figure out your next innovation. That's the way it's supposed to work so to not look at other people's patents never made any sense to me.

MR. IRIZARRY: But you were aware to comment.

MR. GRISWOLD: Absolutely. I have had smoke coming out of my ears on that comment plenty of times.

MR. IRIZARRY: So it doesn't --

MS. MICHEL: Richard, did you want to say something?

MR. PHILLIPS: I can't resist the temptation to say what's already been said, but it can't be said too often. Anything that improves the predictability, the efficiency, and the speed of the patent system will

incent American corporations to spend more money on research and development, and ultimately that is where we want to go.

The patents are just a tool. What you want is research and development for better healthcare products, better turbine engines, better adhesives and sand paper, for better gasoline and petrochemicals and better and safer automobiles.

MR. GRISWOLD: How about Tide?

MR. PHILLIPS: Tide, absolutely.

MS. MICHEL: I'm for that.

MR. MILLER: If you don't read your competitor's patents first of all, you're not up on the latest technological advances, which I can't believe that a competitor doesn't want to know what their other folks are doing, plus it incentivizes you to make the next breakthrough beyond that and to worry about willfulness, by looking at them I actually avoid willfulness because I have an opinion, and I know whether the patent's valid, and then I either design around it or I try to license it in.

So why would I ever be held to be willful when I know about the patent and I've dealt with it? So the whole statement to me, at least, doesn't ring true. It's burying your head in the sand to try to make a problem

go away.

MR. HORTON: I'll add one caveat to that. Before *Seagate*, I had concerns over willfulness, not because we weren't being meticulous in looking at the patents but because we're such a big organization that my fear was that a patent that was being handled by one law firm in city one and a patent that was being handled by another law firm in city Y that were on similar technologies and there was no communication but because they both said GE at the top, there's some expectation that I knew everything that was going on in those patents.

MS. MICHEL: Personally.

MR. HORTON: That's ludicrous. Inequitable conduct still does cause me heartburn and we had to look at these issues. The more rigorous we try to be on the clearance side, obviously that's the push back we get. Every time we have our processes and our tools scrubbed by the litigators, the outside litigators, they come back and say, oh, you're creating the potential for this risk on the other side, but on balance there's no doubt that the right thing to do -- at least we've made the call the right thing to do is be more rigorous on the clearance.

MS. MICHEL: All right. Going back to the 18 month publication, you said that helps but you don't yet

know the claims when you see that published patent application.

What's your ability to try to predict what is going to come out of that application and how it might affect your products and your need for clearance?

MR. HORTON: It's decent. There's always some degree of uncertainty, but they do have parameters from the prior art, and we can guess those just as well as the company who filed the patent application. The drafter had to do through that same exercise.

We put our teams to work doing the same thing and if we can get a design-around that is clear enough, far enough away from what would be an acceptable parameter, then we go forward, but otherwise we watch it, we oppose it where we think it's gone too far or we may even license it under some conditions.

MS. MICHEL: Okay.

MR. HORTON: Based on what might take place down the road.

MS. MICHEL: Richard, you were nodding.

MR. PHILLIPS: I think Jennifer had her card up.

MS. STEC: But you're being your own examiner in that case so you're really not getting any predictability out of the Patent Office. You have to figure it out.

MR. HORTON: You have to do your own --

MS. STEC: That patent has to sit on top of your desk for awhile.

MR. MILLER: Private PAIR and with other tools that we've got we know now exactly where that is in the Patent Office, what stage and we can follow it much easier because it's an open process, so we kind of know how things are happening, where everything else used to happen in secret and we would have no clue.

MS. MICHEL: Jennifer, I would think in an industry that's combining components from different suppliers that aren't part of your core technology, that it is a lot tougher though to keep an eye on pending applications that don't pertain to your core technology and really pertain to the technology of a competitor.

MS. STEC: We don't so much. We rely on our suppliers to do that and sell us products that are free from infringement.

MS. MICHEL: Okay. Richard, you were nodding. Do you follow the application in the same way?

MR. PHILLIPS: I'm very much in accord with the value of the 18 month publication. Almost all the attorneys that work in my group do keep track of their areas of responsibility. To the extent a patent publishes in the United States or Europe or where have

you, we do identify it and track it and it is our job to predict what is the likely coverage.

Sometimes our prediction is this looks like it could be a problem for a program we've got in place, and we either reevaluate the program or sometimes we'll go and take a licensing to a pending patent just to eliminate the risk. Often, we can say there is no way you can get a patent from this spec that will simultaneously be valid and cover what we're doing.

And so it's not a real fun job to do but it's a very important part of our job and the 18 month publication is truly critical to that. I do worry about those applications filed in the U.S. only, where I don't get that opportunity to see what may be pending out there for three or five or seven years.

Those represent a real threat to expensive R&D, and each year I have to go on a team to justify how much R&D we're spending, and to the extent I can make the case that R&D is bringing a return on Exxon's investment, I'm going to get money. To the extent that there's uncertainty, unpredictability, risk they're going to spend less money on R&D.

MR. GRISWOLD: Suzanne, one other point on this is that many companies require that their R&D people follow the art very carefully because they don't want

them reinventing things. There was a study done -- I haven't looked at this for awhile, but there was a study that was done in Europe that at least 40 percent of the R&D that was done over there was just a repeat of something somebody had already done. Think about that. I don't know what the number is now but you don't want to have that going on in your lab.

And one of the ways that people learn about these things and know what the direction is, as Steve was talking about, is to look at the patent art. That's a key area for the technology people.

MR. IRIZARRY: In entering into licensing deals and arrangements with other companies, those terms are usually confidential, and when you settle a litigation, it's also confidential. Now you all do a lot of licensing deals and so have a lot of knowledge within the industry that you work with but we heard from smaller companies and from entrepreneurs that for them it's the first time and they don't have any idea what their technology, if it's meritorious technology, would be worth.

You deal with small entrepreneurs, I suppose all of you do. How do you deal with the concern that small companies or you have the big company licensing to the small entrepreneur or the university?

MR. MILLER: Well, I think two things you worry about: One, is your reputation because the first time you take advantage of an individual or a small inventor or university, word is going to get around very quickly that they will not want to deal with you again because you're going to take advantage of them.

So you make sure, and what we try to do is get a win/win because when we create a partnership with a small individual that leads to another individual wanting to come to us that leads to another group so it's all these networks of collaborative things so you treat people right and they want to come.

As far as not knowing what the terms are, I think it would be devastating to the industry to have to publish what our licensing terms are. There are many times where I know my company is looking at a brand new product line or a product area and to then have to publicly state that we're interested in a technology for this amount of money not only gives our competitors a competitive advantage that they shouldn't have but it really hurts I think the process because people may not be as open in their discussions.

I think generally people know again what the economic value of things that they're going to get from their inventions, and if you don't, you structure the

deal, as Carl said, to take care of that so that if it is a huge success, then the person is rewarded for that being a huge success. If it's not, they don't get as much, and I think that's what happens.

MR. HORTON: I would just add, I cannot think nor am I aware of any of my colleagues who have ever confronted a situation where the other side had undervalued the invention. They usually come in asking for ten X or hundred X of what we think the street value is of whatever it is they've got so that's not much of an issue.

MR. MILLER: That's true.

MR. HORTON: I do think that is -- I would say 80 plus percent of the negotiation is the dollars and cents. The other terms you can usually work your way around.

Now, the question, I don't know if you were angling at, is there enough of a marketplace around the terms of these licenses to know what should be done? Our experience has been if someone's coming after us and they want us to take a license and they have other licensees, they're pretty vocal about it. They're very quick to tell us, oh, you should sign up because we have this other list of licensees who have already done that so why don't you just get in line and do as they've

done.

So they're pretty forthcoming and then a sophisticated negotiation almost always has a most favored nations clause that kind of brings everyone down to roughly the same place. Whether I see those terms or not, I know that a third-party can intervene and take a look, and we have some degree of comfort that we're paying what everybody else is paying.

MS. MICHEL: Okay.

MS. STEC: Being greedy is a double edge sword because that can come back to bite you in litigation if you're sued, if you are commanding a high royalty on something and you get sued on the same product.

MS. MICHEL: I see. Okay. Very good. The recent changes in the patent system through the court cases such as *KSR*, *MedImmune* and *Seagate* have been discussed somewhat as weakening patents. Is that your view of those cases or any one of those cases, how have they impacted your ability to use patents to both incentivizes technology, transfer technology and all of that?

MR. GRISWOLD: I'll make a quick comment on *MedImmune*. I think it's important that people when they're negotiating licenses be able to do that in some comfort zone, and so if people had to work out

arrangements as it did before and they have to now so we don't have people suing each other as the discussions go forward, so that's put more pressure on that dynamic and so I think that's just one example.

Your overall comment, have these cases weakened the patent system or taken away some of the value? I think they have. They've all chipped at it one way or the other. It's moved the balance away from the patent owner to the infringer unfortunately.

MS. MICHEL: Okay. Carl?

MR. HORTON: We've had discussions with numerous parties even as we've traveled around the world and met with parties from other companies, and we've met almost no one who thinks these are anything but shifting the balance of power away from patent holders in favor of non patent holders or would be licensees to a person both raising the level of patentability or making it easier to challenge the patents or making it harder to get willfulness for those who hold patents. I mean, all of that is signs of the pendulum swinging back away from the patent holder.

MS. MICHEL: You all talked about the importance of quality in the patent system. Can you view *KSR* then as a positive thing in that?

MR. HORTON: It is.

MS. MICHEL: It is.

MR. HORTON: On balance we think we do real technology. That's why we invest $7 billion a year to do real technology, solve real problems so we're not afraid of a higher patentability standard. A lot of the lawsuits with the ankle biters as we call them, people coming after us with random would-be patents, we think those are questionable so we think it works in our favor.

MS. MICHEL: Steve you nodded.

MR. MILLER: I think it's been good from the standpoint that we're going to see less of these marginal patents that really contribute nothing to the technological arts.

Now, on the other side of the coin I think the Patent Office has taken it way too far now and we need to look at how the examiners are applying the case law because I think they've swung the pendulum from here all the way to the other side. One of the reasons their allowance rate is so low is they've over-applied the *KSR* case.

Almost any mechanical case that you see these days says that, well, it's a simple invention where you put two things together, and so I think we've got to get the Patent Office back to where it should be and then

KSR is going to be a good thing for all the parties.

MS. MICHEL: Any thoughts about the cases, *KSR* or any of the others?

MR. PHILLIPS: I'm certainly generally in accord. I think most of these are incremental changes Rather than radical, and they have not had a profound impact on our practice. Also significant, you have to pay attention to them but they weren't profound problems.

MS. MICHEL: Okay. Great. Thank you. We're just about out of time. Would any of the panelists have any last points you would like to make and we'll wrap up?

Hearing none I will thank you very kindly. This has been a very interesting and helpful discussion for us and thank you for participating. We'll be back in 15 minutes to talk about the Life Sciences Industry.

(Whereupon, a brief recess was taken.)

PANEL 4: LIFE SCIENCES INDUSTRIES

MODERATORS:

SUZANNE MICHEL, FTC

PANELISTS:

CHRISTINE P. BELLON, Vice President of Intellectual Property and Legal Affairs, Hydra Biosciences

STEVE JENSEN, Partner, Knobbe Martens Olson & Bear, LLP

JEFFREY MYERS, Head of Global IP Enforcement Group, Pfizer, Inc.

MAGGIE SHAFMASTER, Senior Vice President & Chief Patent Counsel, Genzyme Corp.

STEVEN SINGER, Partner and Chair, Technology Transactions and Licensing Practice Group; Co-Chair, Life Sciences Group, Wilmer Hale

MS. MICHEL: We'll get started now with our last panel of the day, in which we'll talk about the life science industry or industries, industries that are obviously focused heavily on patent protection.

Our panelists today are Christine Bellon, who is a Ph.D. chemist and Vice President of Intellectual Property and Legal Affairs for Hydra Biosciences where she's responsible for all legal matters for the company. She was an attorney with Fish and Richardson and

intellectual property counsel for Wyeth and Infinity Pharmaceuticals before joining Hydra Biosciences.

We have Steve Jensen who is a partner in the Orange County office of Knobbe Martens Olson & Bear where he works on intellectual property litigation, negotiation, licensing and strategic counseling matters with clients in a wide range of technologies including a large portion of his work in the medical device industry.

We have Jeff Myers, who is Vice President and Assistant General Counsel for Intellectual Property Enforcement for Pfizer where he manages all of Pfizer's worldwide patent litigation. He's also drafted and prosecuted patents in chemical and in biotechnology arts for Synaptic Pharmaceutical Company, and he was a patent attorney at Fitzpatrick, Cella, Harper & Scinto before joining Pfizer.

We have Maggie Shafmaster, who is Senior Vice President and Chief Patent Counsel at Genzyme Corporation, where she's responsible there for managing the creation, protection, licensing and enforcement of Genzyme's intellectual property worldwide. She has also been a patent attorney at Fish and Neave in New York.

And over on my right, Steve Singer, who is chair of the Technology Transaction and Licensing Practicing

Group and co-chair of the Life Sciences Industry Group at Wilmer Hale, and he's focused on the life sciences industry for three decades.

MR. SINGER: 1978.

MS. MICHEL: He serves as counsel in the life sciences sector including biotech medical device and pharmaceutical companies. His practice focuses on joint ventures, strategic alliances, corporate and securities law, public offering, venture capital transactions involving the biotechnology and other life sciences industries.

Thank you all very much for joining us today. I think you can see that we have people coming at these industries from different perspectives, start-ups, big companies, medical devices, biotech, pharma and I think we'll have a very interesting discussion.

I would like to start with just a broad general question to allow each of the panelists to tell us a little bit about your company or your clients, and how your company or clients use patents primarily, why patents are important and why you were willing to very generously give us your time today to talk about this topic. Maggie?

MS. SHAFMASTER: Thank you. Thank you very much for having us and thank you for giving me this

opportunity. Actually I'm looking forward to talking a little bit more about Genzyme and what we do because I think we have a unique business model in terms of where we started and where we've ended up and in hearing about that, you'll understand why patents are so important to us.

We are now a global biotechnology company dedicated to making a major positive impact on the lives of patients with serious unmet medical needs.

We started as a very small start-up in 1981 and we've since then grown to a large enterprise with more than 11,000 employees bringing services and therapies to patients in more than a hundred countries around the world.

We are technology agnostic. We don't do just small molecules or just biotech proteins. We also have diagnostic and genetic testing services, cell therapies, bio materials, and a lot of research efforts in gene therapy.

The diseases we target are also diverse, including rare inherited disorders, kidney disease, orthopedics, cancer, transplant and immune disease. We have a substantial investment in these diseases as well as neurodegenerative diseases, cardiovascular disease, *et cetera*.

Throughout our history we've partnered with universities, research institutions and private companies in order to find and develop products and bring them to market. We consistently spend about 20 percent of our revenues on research and development. That has allowed to bring us to patients first-in-class therapies addressing serious unmet medical needs at an average rate of about one new therapy per year over the last six years.

In 2003, we launched two new products Fabrazyme and Aldurazyme. Both of these products were the first therapies ever approved in the United States to treat these very rare, often fatal genetic disorders. In 2005 we launched Clolar. It was the first new leukemia treatment approved specifically for children in more than a decade.

In 2006, we launched Myozyme, the first treatment ever approved for Pompe disease or for any inherited muscle disorder. The lists go on and on.

And of these products, seven in the last six years, five are protected, at least in part, by intellectual property that we've licensed in from universities and two were based on IP that was developed either by Genzyme or by another company that we acquired.

In 2007, Genzyme was chosen to receive the National Medal of Technology which is the highest honor awarded by the President of the United States for technological innovation.

So needless to say, our primary use of patents in the marketplace is to protect our products for a period of time sufficient to ensure that we're able to continue to innovate. As everyone here knows biotechnology is a very risky business. It's very expensive. Our development time lines are very lengthy.

And given that enormous investment it's critical that we are able to achieve enough sales revenue for our products and of a sufficient duration that we can recoup not only our development costs but generate enough profit to fund the development of new products.

So prior to making any decision to embark on development, whether it's home grown or looking at a product as a potential acquisition target, we engage in very detailed financial modeling. The strength and duration of patent protection is a very critical factor in those models. Our projected revenue curves decline very rapidly upon loss of exclusivity.

The promise of being able to generate new IP is also behind our decisions to fund early research both within Genzyme and at academic institutions. We do some

out-licensing of patents generally around research tools, and we non-exclusively license third-party patents usually just for freedom to operate purposes.

We take great care in our freedom to operate searches. We thoroughly analyze all of the patents out there. We keep an eye on third-party patents and what's happening with them, and we make sure before embarking on development pathways that we will have all the rights we need.

MS. MICHEL: All right. Thank you very much. Steve?

MR. JENSEN: Thank you for inviting me here. First, I ought to mention that since I'm not here from any particular company or representing any particular client, I need to state that the views I express are not those of my firm or of any particular client. They're my views and shouldn't be attributed to any given matter that we have going on.

I have to be careful about that. Although I don't have any particular company to give the views of, I can tell you a little bit of where I come from and where my views come from. I'm an electrical engineer by trade, turned lawyer and originally started representing companies principally in the giant technology computer industry.

Shortly after I started practice, I became exposed to what we call life sciences, and in my case, mostly medical device technology companies involved in improving medical monitoring or other types of things. I quickly turned most of my attention to those types of clients as I found them much more interesting, and a large portion of my practice has therefore been taken over by that particular segment of the market.

I've represented companies, to give you an idea of where my views come from, just to name a few, pulse oximetry -- one of which we saw this morning in Joe Kiani and Masimo and the Chairman of the MDMA -- noninvasive blood constituent monitoring of all different types, glucose monitoring companies, ultrasound imaging, cardiac output measurements, respiration rate, interventional cardiology, refractive surgery, medical lasers, corneal surgery, infusion pumps and something that's going on quite frequently today which is the use of semiconductors in diagnostics where you might put a drop of blood on a semiconductor and it will tell you what kind of cancer you have or what's wrong with your genes. The technology is evolving. It's evolving quickly and it's very exciting.

Where do patents fit with these companies? They are used mostly to protect their technology. They

invest heavily in this technology much like a drug company would. There's a great deal of runway to get these products to market, to make sure they don't hurt patients, number 1, and then to make sure that they do good. The early stage companies in this arena will spend usually at least 10 percent of their R&D spending on protecting that technology through the patent system.

Their spending on intellectual property actually goes up as they get closer to product release and start looking for clearance information, which they start very early in the process. Most of these companies will start that very early in the process to try to understand the patent landscape, what they have to deal with, what else is out there and do what the system is designed to do which is to foster the innovation and encourage the innovation.

I think it's pretty important to note that our constitution recognizes that patents were put into place to encourage innovation, and that's what they have done in the medical device world. It gives my clients the confidence to know that they can invest in the technology, that they can raise money in the technology, that they can make business decisions and move forward with the technology.

If you think of the list of technologies and

there's been many more that I've worked in, how many of us haven't been touched by one of those technologies or many of them improving our medical care, and in many cases making medical care less expensive and better and bringing things to improve our lives.

So that's what my clients use them for is to protect. Now sometimes they're also defensive. They may be acquired or licensed-in, because there's a particular area in the clearance process that we find a stumbling block or a thorn, and we evaluate those much like the last panel spoke in determining what -- where the problems are. We look at those and figure out which ones will cause a problem and which ones won't, and some we purchase. Some we license in, and some we believe are not a problem and we go forward and provide those clearance matters, so that's what my clients use them for.

I think any adjustments to the system have to be done very cautiously. There's been a lot of talk today about the changes in the law. I'm not sure that we know what those are going to entail just yet because they haven't been there long enough, but certainly I think there's one thing that I've noted since I've been in practice for almost 20 years, and that is that since 1982 when the Federal Circuit was put into place, I

think it's hard to argue that innovation has not flourished in our country, and that the patent system hasn't been accomplishing what it's intending to do.

That doesn't mean it's perfect but it has been fostering innovation by giving people the confidence to invest in, take risks. These are very risky ventures. If they don't work there's nothing to be had for them. There's been talk of the secondary market today, but that's not much left over if there's a half a billion dollars invested in getting a new product into the medical device world.

MS. MICHEL: Thank you. Jeff?

MR. MYERS: All right. I thank you for inviting Pfizer to participate in this. Thanks to Suzanne, Bill and to Tom Mays. I think Pfizer is very well known. We sell Lipitor, Celebrex, Viagra among other products. We also sell oncology products and are involved in a lot of different therapeutic areas.

We are a global company. We are research based, and our goal is really to apply innovative science to improve world health. In 2008, Pfizer spent $7.9 million on R&D efforts. That, like Genzyme, is about 20 percent of our revenue.

Our spending on R&D is a simple reminder that drug

discovery is very, very expensive. It's also time consuming and unpredictable. So, just as a little bit of a benchmark typically one out -- only one out of thousands of compounds will be proven to be both medically effective and safe enough to become an approved medicine.

That can take a long time to show to the FDA and other agencies. It could be ten years from discovery to approval, and after all of that, a product that receives regulatory approval may not achieve commercial success. Exubera being one example if people are familiar with that.

So in this context, innovation by our R&D operations and strong patent protection for that innovation is critical to the company's success. Our innovations come from a lot of sources: Internal research, contracts with third parties, collaborations with universities and biotech companies and with other pharmaceutical companies.

We also seek out promising compounds and innovative technologies by third-parties to incorporate into our discovery and development processes as well as our product lines through acquisitions and other arrangements.

So given the challenges and risks inherent in

the drug development process, strong IP protection for innovation both here in the United States and abroad is critical to our success. So, to put a sharp point on the issue, our business model is highly dependent on our ability to obtain injunctive relief to prevent copies of our medicine from being sold in violation of our exclusive rights. So if you're a generic manufacturer we want you to stay out of our front yard as long as possible.

So as already noted we are a licensee, more frequently a licensee than a licensor, and we are an acquirer of IP rights. Not all acquisitions are as big as the one that's being contemplated right now, but if you look at your 10-K, you will see that just in the last year we acquired several companies for different amounts of money. I mean, $300 million or a couple hundred million dollars is on the scale of what would be a normal acquisition for us.

So because we are a licensee and we use a lot of IP both in connection with our products and also with the processes for developing and making those products, we're not only a plaintiff, although usually a plaintiff, but sometimes we're a defendant in patent infringement actions.

And I think I just want to stop and move on to

the questions that Suzanne has posed to the groups with the note that we're very keenly aware of the need for balance in addressing the needs of different innovative industries that we've been hearing about, technology, universities, pharma, and the diversified products companies. I think it's interesting that virtually everybody who has come in here who has basically been at this for a long time says, let's be careful, let's not be afraid to act but let's be careful in crafting legislative solutions for everybody that don't necessarily leave any one industry short changed.

MS. MICHEL: Thank you. Steven?

MR. SINGER: Like the other Steve, I'll make the statement that my views are my own, not the firms or any clients, and I'll also make the statement that unlike everybody else on the panel here, I'm not a patent lawyer. I'm a corporate lawyer, so I approach things with a different perspective.

I've worked with companies in the life science sector almost exclusively for about 30 years, as you said, and I've had a substantial opportunity to observe these companies and really get a sense of what makes them tick. What does it take to discover a potential drug, to test it in extensive clinical trials, to try to launch the produce in competitive markets, to try to

deal with generic competitors, to finance the heavy costs involved at all stage.

The process and the financing part is where I get most involved. I work with a broad span of companies so the views I have are influenced by that. I work with professors at universities who have an idea but not much else, with early stage companies who are trying to raise financing, with mid-stage companies that are moving forward with potential products, that are seeking to raise capital to develop these products, of course today in a very difficult financing environment, with more mature biotech companies getting ready to launch products, with pharmaceutical companies that are seeking to access the pipelines of some of these biotech companies, and finally with the financing sources, companies like venture capital firms, investment banks and the like.

There's one clear and consistent message. I think you've heard that from everybody today but it's particularly true in life science, and that is without a strong vibrant and productive patent system, a very strong patent system there won't be a biotech industry.

When investors are considering making an investment in a biotech company, the very first diligence item they face after they look at the science

is the patent position.

When a pharma company is exploring a potential collaboration with a biotech company, if there's no strong patent position, it's simply not going to happen. This focus on patent protection is not irrational. It takes ten years or more of sustained substantial effort and investment to develop a drug from concept to market.

The average cost -- independent sources estimate that it's over a billion dollars per drug. Most promising drugs, as Jeff said, fail along the way, and when a drug is finally approved, after all those years, a good chunk of the patent life is already gone and generic competitors are chomping at the bit to interfere.

So when you consider the fact that we're addressing an industry today that develops products that are life preserving, life saving, that's incredibly productive. It's considered to be one of the most productive, the best in the world, employs hundreds of thousands of people and has the prospect for increasing employment when you think about bio fuels and everything else. I think we just need to be really careful and cautious when we make changes to the patent system that may impact the industry negatively.

MS. MICHEL: Thank you. Christine?

MS. BELLON: So unlike a lot of the other companies that you've heard from today, Hydra Biosciences is probably a new name to a lot of you so I appreciate the opportunity to come talk about Hydra and about Hydra's views on patent reform.

Hydra Biosciences is a private venture-based company in Cambridge, Massachusetts. We're trying to develop drugs against a class of ion channels called the TRIP ion channels. Ion channels regulate the flow of ions across the cell membranes so this affects things like nerve impulses, muscle function and cardiac function.

In the past the ion channels were hard to design drugs against because a lot of the ion channels are homologous which means they look alike and act alike, so if you tried to develop something that hit one ion channel you could inadvertently affect another ion channel such as the one that controls cardiac function.

The trip ion channels are a new class. They were discovered ten years ago, and what makes them special is that they're not homologous to other ion channels and they're not that homologous to each other, so you can selectively target one trip ion channel and not other ion channels, so you can do

things like treat pain without stopping the patient's heart.

MS. MICHEL: Okay.

MS. BELLON: So Hydra doesn't have any products yet, and we probably won't have any products for several years. So, we rely on venture funding and partnerships, and as you've heard today it costs a lot of money to develop a drug so we need a lot of money.

Because the trip channels are such a compelling target, a lot of the large pharmaceutical companies have their own programs, so we're competing with companies like Pfizer, like Novartis and like Amgen.

Hydra has 36 people. We don't stand a chance against these other companies unless we have something that brings value, and one of our most important assets is our IP portfolio. We have a very strong patent estate, and that is what allows us to attract venture capital and partners. This has been said throughout the day but I'll repeat it one more time, a strong IP portfolio is critical to Hydra's survival.

MS. MICHEL: Thank you. When did Hydra start developing its intellectual property portfolio? You're a young company and you already have a portfolio. So I would like to understand the life cycle of the company and when IP starts coming into play.

MS. BELLON: Well, some of the IP for Hydra actually started because we licensed-in some technology from a university. This is kind of typical of how a lot of start-ups, especially in the Boston-Cambridge area, get started. So we licensed in some technology from university, but Hydra was very forward thinking in that as soon as they started doing research, they also started building their IP portfolio because they knew -- I wasn't there at the time but they knew that that was going to be the value driver for the company.

So it started -- almost the moment that research starts, they started building the IP estate.

MS. MICHEL: All right. And other early-stage technology, Steve, can you talk about these very early-stage developments and how the IP plays in there?

MR. SINGER: Sure. The way products typically get developed is you have an idea that comes in from a university, a professor as I mentioned who has a particularly good idea, and the university licensing offices works with venture capital firms or angels in some cases, but more likely venture capital firms, and the crux of the transaction is in licensing of an interesting patent estate.

And without that patent estate there's really

nothing for the venture firm to make an investment in, and that's how these companies get started so Hydra is very typical.

MS. MICHEL: Christine, can you talk about how a start-up keeps building its patent portfolio? You don't just stop with those first patents, from the professors, do you? As you continue to develop new technology how important is it to keep patenting?

MS. BELLON: It's important for everyone I think in the life sciences. I think it's particularly important for small companies like Hydra. One of the advantages that Hydra had is Hydra is a pioneer in the trip ion channel field, so because Hydra was one of the first companies researching these trip ion channels, there was essentially a lot of IP space and so we were able to build a really strong portfolio around this space.

MS. MICHEL: This concept of there being a lot of space, how important is that in thinking about where to put the money, where to do more research?

MS. BELLON: It's important, and I think a lot of us have the same view that we would not invest the hundreds of millions of dollars into developing a new drug, if we didn't think we had clear IP space. If we thought there was going to be an FTO [freedom to operate] problem, we

would not go into that area or we would try to license in what we could to take away the FTO problem.

MS. MICHEL: Jeff?

MR. MYERS: Yeah, I think this notion of space actually illustrates a lot of problems and the conundrum in that the differences between the tech industry and maybe, in some ways, the biotech industry and pharma, someone mentioned that in the chemical arts, the terminology is very clear and well established.

Well, yeah, the chemical arts are in reality more than a hundred years old. The terminology that we are using today was essentially developed a hundred years ago. That's totally different in the biotech space, and it's different in the high tech space, and as a parent, I'll say that also gives rise to some problems because when you give your kids too much room, sometimes they run around and make trouble.

So one of the reasons that -- in some of the early days of the biotech industry you saw very, very broad claims for admittedly pioneering technology. Of course I think uncertainty around how far those claims could be enforced was to some degree an impediment to innovation, and so again this goes back to this need for balance, right.

I think the courts have always recognized that pioneers deserve broad patent protection, but you have to balance that against the need for a fair disclosure of what it is you've really invented, and when you have arts where the terminology and maybe the technology are fairly immature, which I think is frankly the case with the software industry and the semiconductor industry, you know you have people grappling, trying to get as much as they can, working with terms that not everybody agrees on and tests that not everybody knows how to perform.

And so I think you have to be willing to live with that a little bit, and I guess my view, jumping all the way towards the later parts of your questions about how do these cases affect that -- a lot of times we see a case come down, and it doesn't look so great at first glance and we all freak out and run around and say this is the end of whatever.

And then we watch while the courts who have a lot of common sense develop these doctrines, so I think sometimes we're in a hurry for certainty. Businesses are in a hurry for certainty. We look at court cases and we think, "oh no, now it's uncertain" and we have to kind of work through that.

I think what you see when you have a lot of

space in a particular technology is that it can be difficult and time consuming and a bit of sausage making to watch the courts and the companies and the government try to figure out what to do with it.

MS. MICHEL: Okay. Steve?

MR. JENSEN: I think that raises an issue of something that's come up earlier in the day which is the notion of the continuation practice in patent applications. It's very hard, particularly when it's a pioneering technology and my clients are principally -- I'm not a chemist so it's not the drugs. It's the devices.

These are technology devices. They're software. They're computers. They're sensors. They're semiconductors, catheters, things that you can hold, and you're not always sure right when you start. A lot of these start-up companies don't even have the funds to try to figure out or pay their patent lawyers enough to figure out exactly where that fence can properly be drawn.

MR. MYERS: Especially those lawyers at law firms.

MR. JENSEN: So the continuation practice, is particularly important for those start-up companies so as the portfolio develops, they can craft it so that it

properly covers the space as opposed to, oops, we stepped a little over here and captured the prior art because we were a little too broad or we were too narrow. We only captured precisely what we were doing but everybody can do exactly what they're doing without stepping on the patents.

So the continuation practice, which has come up a few times through the day, is critical for developing that portfolio, as the client, as the company learns really what is the protectable space.

MS. MICHEL: Interesting. Do any of the other panelists have comments on this concept of the importance of continuations in protecting the space outside medical devices? Does it come up for chemical, biotech? Do you face the same kind of problems? Jeff?

MR. MYERS: Yeah. I think we see that and we see that when we're trying to evaluate technology, trying to figure out whether we have freedom to operate in a particular area. One of the things I think that has offset that to a degree is the publication of U.S. patent applications.

And as one of the earlier -- one of the panelists on the earlier panel had mentioned, at some level you look at it, and you figure out what can

reasonably be granted out of a specification. I have to tell people internally at Pfizer all the time, there is no such thing as a risk-free path. You just have to figure out what the big risks are, what risks you can address and what risks you just have to live with.

So, a continuation process creates some uncertainty, but by the same token it is probably better than forcing companies to either give up too early or to unduly narrow their patent claims versus forcing the Patent Office into a position where they're either not granting anything or they're letting things out that are too broad. So again with continuation practices it’s babies with the bath water.

MS. MICHEL: Maggie?

MS. SHAFMASTER: I would just like to agree and expand a little bit. Continuation practice is extremely important because at the time that you're filing your original application, this is work that's being done at the bench. You may have some in vitro studies and a few animal studies, but it's years before you would even get into your first human patient, and then continuous years through your clinical trials. And all that time you're learning more about the drug and how it works and how to formulate it and how to dose it,

and the continuation practice allows us to ultimately come out with stronger patents that are more specifically directed toward the final product, and stronger patents means more certainty. It means less risk and it means we're more likely to invest in that product.

With regard to the criticism of continuations that you don't know what someone is going to claim and therefore, there's no way to clear them, we don't seem to have that problem. I think we're very capable of reading a specification and being able to tell what kind of claims might come out of that specification.

There may be some uncertainty about changing standards at the Patent Office in terms of what's valid or what's patentable, but in terms of the scope of what that specification will support, we don't see an issue with that.

MS. MICHEL: Okay. And how is your ability to assess what patents are out there that you will need to license in or deal with in order to get freedom to operate?

MS. SHAFMASTER: So, when we do a patent clearance search, we look at granted patents but we also look very closely at pending applications, and the question is not what claims are in that application, the

question is what claims could that specification support.

MS. MICHEL: Okay.

MS. SHAFMASTER: Could they write a claim that would cover us?

MS. MICHEL: Do you have any concerns about the ability to interpret the claims predictably? Claim interpretation has been called a very unpredictable process in a lot of industries, 50 percent reversal rate and that sort of thing.

Is that a concern that you face when you're thinking about where to invest money and what kind of freedom to operate you need? Christine?

MS. BELLON: It is a concern but I want to point out that you don't get faced with an issued patent and then have to wonder how those claims are going to be interpreted. The vast majority of applications nowadays, the prosecution history is available on Public PAIR so you can go into any pending application and look to see how the applicant himself or herself is in fact defining the terms in the claim.

So you get a lot of guidance as the application is going through the Patent Office on how both actually the PTO and the applicant are going to interpret those claim terms.

MS. MICHEL: Okay. And once the patent issues, are the doctrines surrounding claim interpretation satisfactory, at least in the biotech industry, to have some confidence in how a court might interpret those claims and be able to identify those claims that you need to deal with? Jeff?

MR. MYERS: Yeah, I think that the uncertainty around -- or the notion that there's a lot of uncertainty around the scope of issued patent claims, echoing what Christine said, to the extent that's out there, I suspect it's probably overblown.

We also have not just the file histories now but we also have *Festo*, which really provided some clarity about what you can do with the file history, so I'm thinking back a few years ago to the *Purdue Pharma* case where they reached back into the specification in a continuation and pulled out basically an example and wrote claims around it, and the Federal Circuit said, "No, no, no, that's not an invention."

So there are cases where companies have frankly overreached in trying to say, "Oh, somebody else is out there, we want to try to capture them," we still have a continuation pending so we're going to go back and write our claims to cover these guys by straining, turning this example which was not -- clearly not part of the

invention *per se*, we're going to turn that into a claim. The court said, "wait a second, this isn't correct, this is not an invention," so out goes your patent.

So I think there's enough case law out there to give us sufficient guidance. Like I said it's never a matter of having zero risk. You start with the granted patents, and then you move along the spectrum to the things which are less and less clear, and therefore at some level you have to accept they present a less clear risk -- so you're going to value those as a bigger risk.

MS. MICHEL: Maggie?

MS. SHAFMASTER: I was just going to say there is some uncertainty. There's always some uncertainty that the court might not come to the same interpretation that you've come to, and that plays into risk and how much risk you're willing to accept, and that plays again straight into your models of what's the value here, and how much am I willing to invest given this level of risk.

MS. MICHEL: Do you have any thoughts on how to improve that situation? In an ideal world wouldn't patents be predictable -- we take the patent, look at it, here's what it covers? I know as a business how to react. Is that something to be strived for, and

if so, do you have any thoughts on how to move in that direction?

MS. SHAFMASTER: Well, throughout the years - there was a time a few years ago when people thought the case law was pretty clear about claim interpretation and whether or not it was permissible to read limitations from the specification into the claims. Then things changed again, and now I think the seminal case on the issue didn't give a whole lot of guidance.

So, again it just kind of comes down to what is your gut telling you that a court's going to do with this, and if you're really not sure, are you willing to accept that risk.

MS. MICHEL: And you're referring to the *Philips* case?

MS. SHAFMASTER: Yes.

MS. MICHEL: Steve?

MR. JENSEN: When we talk about predictability, and the reversal rate, I think they're not necessarily exactly tied. When jurors were deciding claim construction, we had very little ability to predict what the construction of the claim was going to be at the end of the day -- less than we have today, and so it may not have been reversed by the appellate court because there was more deference given. There was

a standard that was harder to overcome.

But, predicting in advance, before the case started what the eventual construction would be I believe was harder than it is today. Even though we may get a reversal, I think that it's more often that we have an understanding of where that reversal will come because of the claim construction rules that we've been given.

In addition, the claim construction rules, I think the unpredictability is coming more from the changing as was just mentioned of those rules. When we know what the rules are, we as patent lawyers are able to look at those claims and say, here are the rules we're given.

If the rules changes, that changes the advice we gave to our clients sometime ago. We may be in the middle of litigation while those rules change, and sometimes I think that throws more unpredictability into it because we don't know what the law will be tomorrow.

MS. MICHEL: Okay.

MR. ADKINSON: At the IT panel earlier, the number 1 concern that was raised regarding risk was the sheer number of potentially applicable patents. I just want to confirm whether that's not a major issue in your view in your industries?

MS. SHAFMASTER: When we do freedom to operate

searches, we will review -- potentially thousands of patents come up on our searches that we'll take a look at to make sure they're okay. I don't know that we've ever had to contend with hundreds of thousands, if that's really what they're contending with, but we're willing to put in a lot of effort because by the time we get to market, if we've got a freedom to operate problem, that's not a problem you can get around by designing around.

There's way too much money and time invested to find out you have a problem that late, so we have to do that work, and we do that work.

MR. ADKINSON: Jeff?

MR. MYERS: Yeah, we do extensive freedom to operate work on projects as they're ongoing. Typically when a compound is sort of nominated to be a clinical candidate, then the level of that work goes up, but I think honestly to be fair to our IT colleagues, their product life cycle is much faster so we have more time to do those FTO searches, and of course we talk about how much it costs to get a drug to market.

Most of those costs, the greatest proportion of those costs are in the large scale clinical trials, and so we don't have this huge bolus of money dumped into a project at the beginning

and then ten years later we find out if we get approval.

It's sort of a continuous investment that goes up and up and up, so we have the luxury, if you will, while even though our patents are running down, we get term extension. There are various mechanisms for addressing that. I think they're very effective in the pharmaceutical industry, but I don't think generally for small molecules, we're not looking at thousands of patents.

We may be looking at a couple dozen. We have time, and the amount of money invested in a single project and product is substantial enough to justify a bigger investment in that FTO effort. On the other hand, if you're developing a product, and you're already taking a hundred licenses to various components, and you're thinking, well, now I have to go out and look at 500 more patents, there's a risk benefit ratio in that evaluation, which I think is different when you have a really fast product life cycle.

So I think we sort of have to recognize that there are differences that are inherent in the different industries.

MR. ADKINSON: Steve?

MR. JENSEN: I would just echo that a little further and that is that representing device companies

which really are computers in many respects, there can be very, very large numbers of patents that have to be looked at, and we have processes that we can go through to funnel those down to the point where we get them to a point where they are the ones we think we are looking at the right ones.

I think that the main difference in that technology and the IT space from the panel earlier today really has to do not so much with the sheer numbers but to do with the time period of the duration of the market. It's a much shorter life cycle for those products.

And so even though we may have just as many patents to look at, with my clients that are in the medical device sector, there is usually -- it's a stickier product. It has a longer life cycle. It doesn't change as quickly because of many of the regulatory and other issues that touch the medical device industry.

MS. MICHEL: Steve, is the timing, the development timing also -- the time that it takes to develop the product also important?

MR. JENSEN: That timing gives you the runway to do the clearance search. Even if there are thousands of patents to look at, you don't have to read all of the

thousands of patents. You might look at abstracts at one level. You might pull 20,000 patents and look at abstracts, that's a paragraph you're looking at and then you look at -- drill down a little bit deeper, maybe look at the pictures. But, that ramp gives you more time to do the clearance work that needs to be done in the medical device area.

MR. SINGER: Same in the biotech. It's not an optional thing to check out very carefully the patent landscape. It's more mandatory. I'm not aware of any companies that don't undertake that review, and I don't think the boards of directors of small companies would permit them to go forward unless they were doing that in a very vigorous basis.

MR. JENSEN: Neither will the venture capitalists.

MS. SHAFMASTER: Just one last point about doing the clearance as development occurs is a very important one because you can in the beginning just look at the patents around the protein. At that point, you're not really sure how it's going to turn into a product, and then as the scientists start figuring out well this is the expression system we want to use to express it, then you can start clearing those patents.

Then this is the way we think we want to

formulate it, and then you can look at those patents so it is much more amenable to staging than having everything all of a sudden at once you have to clear the entire product and every step you used in manufacturing it.

MS. MICHEL: Christine?

MS. BELLON: I want to add one thing. It's not always the most fun to do an FTO analysis, but it's also an incredibly rich sources of information. First of all, I'm not sure if I told the scientists in my company to stop looking at the patent literature that they would because that's where they get a lot of their ideas.

As you're looking at other company's published patent applications in the same fields, you get a lot of new ideas how to innovate your own research. So, while we do it to protect ourselves from a legal point of view, it's also really helpful to the scientists to see what other companies are doing.

MS. MICHEL: Do you have a question?

MR. ADKINSON: One quick one for Steve. Because your devices are -- of your clients tend to involve high tech issues, do you get non-practicing entity suits more so than some of your colleagues might here?

MR. JENSEN: I think it's more common in the medical device arena than it would be in the pharma and

bio areas, and we do receive lawsuits, and they have increased in the last few years with respect to non practicing entities. But, again I think it's important to note that word is a little too broad. We don't see attacks from universities. They're trying to transfer technology.

It is usually -- it's often a failed medical device company that now has IP, which is all that is left which has ended up in some kind of an aggregator or venture firm that then looks to obtain some value from that as opposed to technology transfer, and they are increasing. They aren't overwhelming by any stretch of the imagination, but they do occur in that space on a regular basis.

MS. MICHEL: And have they increased over the past few years?

MR. JENSEN: I think slightly, not significantly, not like some of the things we heard earlier today with the IP panel, but I think slightly they have increased. I think one of the reasons is that the nature of those claims changed in the last ten years where many more of those groups are going after the end product developer as opposed to the manufacturer of the particular component that's at issue.

So even the medical device companies will

see an attack by an area that really has to do with a technology in the microprocessor, and I would say that properly belongs in a dispute with the microprocessor company, not the medical device company. But those entities do come after -- it's just started so they're coming after the medical device companies. We've been able to deal with them I think fairly effectively, but they are occurring and they're increasing.

MS. MICHEL: Why? Do you have a theory on why they're going after the device manufacturer, not the microprocessor manufacturer?

MR. JENSEN: I don't have a theory. I think it's just another target that has developed and the realization that there are competitors out there in the medical device world so there's another target to go after. It isn't a new problem.

There have been various ways that these leftover patents so to speak get asserted to try to obtain some value from them after a company has failed or they have not seen at the technology make it to market. There are just different avenues, and I think the system can get skewed a little bit -- if you can choose a path of enforcement that will lead to uncertainty, if it can lead to uncertainty, then maybe you can obtain

more value out of those patents than someone would normally anticipate.

I think that most companies in the medical device arena are simply fighting those and succeeding. I've been involved in several where at the end of the day the cases are just dropped and with no payment at all.

MR. MYERS: Put another way, once you payoff the blackmailer it never stops. So, you do have to make some choices about going to court with some of these people.

MS. MICHEL: Is this a matter of establishing reputation of a company as a fighter? Is that a conscious decision? If it's possible to settle for less than it's going to cost to litigate, what's the decision process there in fighting?

MR. JENSEN: Many medical device companies will not evaluate it in that sense. They will evaluate it in a sense of: Is it a meritorious claim, and if it is not, most, if they have the resources, will fight it through. They will not withstand being held up.

MR. MYERS: I'll add one more comment because I was here for the panel on injunctions, and there was the analysis by -- was it someone from Sidley? I'm trying to remember who gave the analysis, but the courts -

MS. MICHEL: Yes.

MR. MYERS: -- if you look at the analysis of cases involving injunctions or a request for injunctions, courts have not been that friendly for the sort of quintessential non-practicing entity. They don't get injunctions that often, and I think it's for a lot of these reasons.

MS. MICHEL: Okay. Has that affected -- Steve, have you noticed whether *eBay* has affected the frequency of suits or the amount of settlements or the extent to which a company will fight?

MR. JENSEN: I think it has given an added number of companies -- there's varying levels of risk aversion in different clients and some can take more risk than others. They're just more comfortable with more risk. I think since the *eBay* decision more are willing to stand up to that attack if they believe that there are no merits to the case.

I think that has also resulted in a reduction in settlement amounts, when settlements do occur. The threat of the injunction is dramatically reduced, and that had previously resulted in sometime some anomalies in the system where the patent may have commanded more than it would have prior to *eBay*.

MS. MICHEL: Has *eBay* had any effect in the

biotech industry separate from the medical device industry?

MS. BELLON: Well, I would say both *eBay* and *KSR* have certainly had an indirect effect. It's hard in these economic times to tease out the hard economic times versus fear of investing in life sciences because of cases like *eBay* and *KSR*.

But to elaborate a little bit on one of Jeff's points earlier, when *KSR* was decided I think there was a lot of panic in the patent community like, "oh, no it's going to be impossible to get a case through the patent office, everything is going to be found invalid for obviousness." After a while, we saw the cases that were coming out and we decided that in fact that wasn't the case.

You can still get patents on new inventions. But, significantly after the patent community had come to that realization, I was at a meeting with a bunch of investors, and the investors are still referring to *KSR* as that Supreme Court case that makes everything obvious.

MR. SINGER: One thing I would add to what Chris is saying, the question is really when do we get to the tipping point because *KSR* in and of itself, *eBay*, *Seagate*, *Quanta*, *MedImmune*, patent reform, at what point

have you made so many changes to the system that investors will throw up their hands and say, "It's better to invest in the IT industry or it's better to invest in medical devices as opposed to drugs." That's the concern that the biotech industry generally has.

It's not one case in particular. It's the pattern, and when do we really hit the point that investors are just not going to be willing to play anymore.

MS. MICHEL: Is it possible to argue that *KSR* was a benefit and the patents that issue now are stronger? Can the investors look at it that way?

MR. SINGER: I would defer to my patent colleagues, but in talking to companies I work with, I think their belief is the patent examiners have not really known which way to go in terms of analyzing patent applications and that there's just a lot of uncertainty as a result of that.

MS. MICHEL: Okay.

MS. BELLON: For us, uncertainty about the IP estate is always bad because it makes the investors hesitate to invest in us.

MS. MICHEL: Okay. And what do you feel are the sources of that uncertainty right now? Actually, can I ask Steve, what kind of uncertainty are investors

worried about separate, with regard to the patent estate?

MR. SINGER: I think first of all what Chris said is really important, which is we're not dealing with a controlled experiment here in that there's a whole economic situation out there that impacts what everybody does and the risks that people are willing to take. To some extent, it means that people can point to something when they really don't want to make another investment. They can just point to, "Oh, the patent laws are whacky so I'm not willing to make the investment."

But investors who are giving serious considerations to making investments, as I said I don't think it's one thing over and above the others. It's just the dimension of things. It's the climate for patents and patent enforcement and the sense that there is a hostility in the judiciary, and there's hostility in the administrative branches and legislative branches right now against strong patent protection.

MS. MICHEL: Okay. I'm curious how much of that sense of hostility is a perception and how much do you think it's really grounded in reality though? What I'm wondering is how sophisticated are the investors in understanding the impact of *KSR* on the biotechnology industry and the impact of *eBay* on the biotechnology

industry or is it more just a gestalt that they're reacting to? Maggie?

MS. SHAFMASTER: I was just going to say -- talking about the uncertainty, I think a huge source of uncertainty is change in case law. In every case it seems where the Supreme Court takes a patent case, it's not to affirm the Federal Circuit. It's to change the last 10 or 15 years of law that the Federal Circuit has developed that we've all been relying on in analyzing patent estates, our own and third-party patent estates and the value of those patents.

So I think changing law and the retroactive effect on those changes is a huge source of uncertainty.

MS. MICHEL: Okay. Steve?

MR. JENSEN: I'm not sure I need to say anything beyond that. I was going to talk about the investor's view, the venture capitalists who see it at a very high level.

MS. MICHEL: I guess that's a better way to articulate my question, yes.

MR. JENSEN: But they then try to drill down, and I represent some venture capital firms as well, and they ask a lot of questions about what this all means and try to ascertain because they're in the business of taking big risk, and they want to know how much risk

they are taking and whether or not the investment is going to payoff. If the law changes mid course, that just changes the formula under which they invested, and that worries them, and so they do ask many questions to drill down what does this mean about each individual one.

But the overall sense is that as they drill down on each one is that right now they're in an environment where the pendulum is swinging against the patent owner.

MS. MICHEL: Okay. Jeff?

MR. MYERS: Yeah. I was going to say I think to echo a little bit, maybe expand on Steve Singer's comments, I think the perception that's out there is that the patent system has been substantially weakened by some of the actions of the Supreme Court and the Federal Circuit. I was even at a conference about a year ago where Pauline Neumann stood up and talked about the historical basis or the policy basis for the establishment of the Federal Circuit itself was to promote innovation.

It was a time when innovation was perceived to be really suffering in the United States, and she questioned whether the Federal Circuit was at least to some degree losing its way, and in that kind of a climate, investors particularly in our field, in the

drug field *per se*, they're saying: How long are you going to be able to sell this product before generics come on the market? What's your LOE [loss of exclusivity] date?

And echoing what Maggie said before, our valuation models and the valuation models of the investors, you try to quantify that risk, and the fact, simple fact is that whereas five years ago somebody in some hypothetical might be willing to put an 80 percent chance of success on a given dispute or issue, now that's 60.

So you just -- you might have passed your hurdle rate. You just don't know. I think that's what's happened is that in cases where you were close to the tipping point, now you're below it, and you're going to move on to something that's less risky. So, I think it really has had a chilling effect, and it hasn't been any one factors.

It's just that when you start to add in that kind of uncertainty you cross the tipping point and I think we are in a negative scenario right now on that.

MS. MICHEL: Is there an expectation that more biotechnology patents would be found invalid if litigated because of *KSR*? I'm trying to understand -- I'm hearing that a lot of the combination of the cases

creates more uncertainty and wanted to drill down a little bit into the individual cases to understand the substance a little more.

MR. MYERS: Let me only speak very briefly and defer to Maggie and Chris, but there have been some post *KSR* cases in the chemical arts, and it really doesn't seem to be having a very direct impact on the chemical arts. There's a recognition and in the Federal Circuit and the courts that drugs are not gas pedals.

MS. MICHEL: Okay. It's fair. Christine?

MS. BELLON: Just to elaborate on that point, we took a really very careful look at the statistics and the cases that have been decided post-*KSR*, and in fact it's actually very reassuring from being at a life sciences company to see that *KSR* has had I think much less of an effect on life science patents than we thought it was going to.

MS. MICHEL: All right.

MS. BELLON: But we still have the perception hanging over us that there's the Supreme Court case out there.

MS. MICHEL: Steve?

MR. SINGER: It's not just limited to *KSR*. Maybe we shouldn't focus so much on that case.

MS. MICHEL: I was going to break them down and

go through them one at a time.

MR. SINGER: Because I think *eBay* is probably a very significant one, and I love my patent colleagues to talk about it, but the fundamental issue for a company with a drug going onto the market with a potential infringer is to get them off the market.

MS. MICHEL: Yes.

MR. SINGER: Getting damages is nice but it's not really what the game is about. It's getting them off the market. The extent that *eBay* makes it harder or makes it more uncertain that you will get a permanent injunction, it's one of those other negative factors that are affecting investors.

MS. MICHEL: All right. Any concrete sense that *eBay*'s actually going to make it harder to get that infringer off the market? On our injunctions panel, there was a lot of fear about this. We didn't hear anything concrete.

MR. JENSEN: I think you simply have to sample the cases, which I haven't done statistically. Anecdotally, I know that among patent firms, each time an injunction is now denied at a district court with the advent of the internet, I think every patent lawyer in the country knows within about 15 seconds. They are occurring anecdotally. From what those e-mails I see

they are occurring more frequently at the district court level.

MS. MICHEL: All right.

MS. BELLON: For one concrete example, ultimately I think the injunction was granted but there was the *Amgen v. La Roche* case about a year ago, and that really made a lot of people in the pharmaceutical industry very nervous because it really cuts at the heart of the patent. A patent is the right to exclude, and if a court is going to say to the patent owner, "Well, actually we're going to let this other party on to the market and pay you some royalties." It completely takes away the power of the patent.

MS. MICHEL: Yes. And in the court's discussion of the public interest in that case, as I understand that was one source of the concern there; is that right?

MS. BELLON: Yes, it was very much a concern because one of the factors that the court used was, that there's a public interest in getting cheaper drugs on to the market and so if we allow the infringer on to the market, the drugs will be cheaper, and isn't that good for the public. But, that's balanced by, I think, the public's interest in better drugs, and if you take away the incentive to

develop better drugs, I think the public is actually very poorly served in the long-term.

MR. ADKINSON: Has there been an increase in the systemic uncertainty in the sense that the level of change in the system over the last five years creates uncertainty as to whether there will be a great deal of more change over the next five years?

MR. SINGER: It's a hard question to answer because when you're talking about systemic uncertainty and you're not dealing as I said before in a controlled experiment environment, there's a lot of systemic uncertainty right now. How much of it is attributable to the changes in the patent law, I'm not able to determine.

MR. JENSEN: I was going to add, on the right to exclude, I can give you data there that is instructive. I think in terms of that being the fundamental patent right, and we do have good data there, probably came from Janicke, and that is that the average patent infringement judgment is well below the average price to take it to trial.

So the fees exceed, on average, the judgment, the damages judgment, and that tells you that those cases are principally about excluding, not about recovery on average.

MS. MICHEL: Let's go back and talk about the business model in which we have the start-up company transferring its technology to a larger manufacturing company that can take it to market. Steve, you've had a lot of experience helping setting up these deals. Could you walk us through one and the kinds of problems, the kinds of concerns that come up about the IP estate and anything else?

MR. SINGER: Sure. The reason that a smaller company, a Hydra, or an Infinity, will do these deals in the first place is some of the factors we all talked about before, which is that it's mostly not feasible for a small company to develop a product from discovery through to phase III clinical trials on its own.

I mentioned the cost before, which is an average cost, but if it's not a billion dollars, it's certainly several hundred million dollars, so it's not feasible. Not only that, the smaller company typically doesn't have all the resources and all the expertise that it needs, so there's a real impetus to collaborate, and the crux of the collaboration is what the small company has to offer.

Now, it's made a scientific discovery that people find compelling, but if that scientific discovery

isn't backed by the IP, the deal won't happen. So, in an ideal world, a smaller company will talk to several pharmaceutical companies.

And they'll all do due diligence on the patent estate and on the scientific discoveries that have been made and what will hopefully end up in an ideal world for the small company working through a term sheet stage with a couple of these companies. IP is not the -- there's an assumption that the deal wouldn't even be being discussed if there's not a strong IP position, so in the term sheet stage the IP is dealt with not in very exhaustive terms.

But when you get down to negotiating a final agreement, who enforces the IP, who prosecutes the IP, it's a serious point of negotiation between the companies. Usually it's not a deal breaker, but it's usually resolved, but it's a major point, and then another critical question that comes up is intellectual property indemnification, which is something that as a small company you avoid like the plague.

And I don't know if I'm answering your question but that's typically the way the transactions would evolve.

MS. MICHEL: No, that's very good. Thank you. In that technology transfer, what's being transferred

besides just the patents, just the patent rights? Do the inventors go along with the technology, other know how going along with the technology?

MR. SINGER: Sure, and it's typically a license for the patent rights and the know-how and the data, to the extent there is data. It's a package that goes well beyond the patents, but doesn't include people other than on a collaborative basis.

MS. MICHEL: All right. Very good.

MR. JENSEN: That probably differs in the device arena where often, if you're picking up a technology, you do want the engineers to go along with that technology to sustain it because most devices require sustaining engineering as things occur out there. You get MDRs, medical device records with the FDA. The engineering team is usually needed when a technology is acquired.

MS. MICHEL: Jeff?

MR. MYERS: Yeah, and I think you would see in an acquisition or a licensing, more typically in an acquisition where you're getting technology that is new but has something that's been proven or where there's a lot of trade secrets. I mean, getting those people is a big part of the deal. It's fine to have trade secrets but the trade secrets have feet, and if they leave, out go

your trade secrets as a practical matter.

MS. MICHEL: Maggie?

MS. SHAFMASTER: I would just echo that when licensing in technology from a university, it may be a straight patent and know-how license, but getting it from a small private company, it's either an acquisition or it's usually some kind of partnership or collaboration because those are the people that developed it. They know it better than anyone else.

They know where they want to go with it, and we want them very involved. They're the experts in that technology.

MS. MICHEL: What is the importance in the biotech industry of this externally developed technology that then becomes acquired by a manufacturing company versus internally developed technological for biotech?

Jeff, your company licenses or brings in this kind of technology and develops some internally but why is that?

MR. MYERS: I'll talk about biotechnology versus small molecules. In the small molecule space we have a lot of R&D expertise and manufacturing expertise, and we have all the people and the know-how that's necessary to do that.

Pfizer, I would say, traditionally had not

invested in the biotechnology area sufficiently to say you could just bring in patents and maybe a development project. We don't have the manufacturing capacity. We do have some -- a lot of the biotech manufacturing that involves things like human growth hormones which we have products in, recombinant human growth compound, that's acquired. We outsource a lot of that.

But a big difference in the -- I don't want to get sort of ahead of ourselves here, but we all know that Pfizer's proposing to buy Wyeth, and that would turn Pfizer from essentially an insignificant player in the biotech space to number 4 and 5. As I mentioned before, clearly the people -- and it's not just the vats and the plumbing. I mean, the people are a huge part of that value.

MS. MICHEL: Maggie, do you have any thoughts on why the biotechnology industry has developed in this way where much of the innovation is done by start-ups and then brought into a larger company, or Christine? It's interesting not every industry operates this way. Do you have a thought about that, Christine?

MS. BELLON: Well, to some extent small start ups are sort of uniquely set up to concentrate and to really focus on a single technology, and these

technologies are really complicated, and we have people working at Hydra who have been working in the trip ion channel field. They've been working in this field since the field started, so that knowledge is invaluable to the company, and a small company -- it's a little bit more flexible than a Pfizer, for example, and able to sort of follow the technology a little bit more nimbly I think.

MS. MICHEL: Okay.

MR. MYERS: Maybe a fair way to say it is look, the biotech industry did not spring out of the pharmaceutical industry, right. It really came out of universities and government sponsored research, *et cetera*, and so you have long haired academics and people who are not really going to fit into the corporate environment.

I mean, we even have these discussions internally about when you acquire certain types of technology, you want to avoid Pfizer-rizing it (and I like to say the word is spelled with a P but it sounds like something else), and so we actually now have two independent research units.

We have Pfizer global research and development, the small molecule group, and then we have our BBC, which is San Francisco and Cambridge,

and those are the biotech guys, and we're trying not to Pfizer-rize them. We're trying to let them do what they do.

You're dealing with very esoteric biology, very esoteric physiology like TRIP channels for instance, or RNA or DNA based technology. This didn't come from any of the big pharmaceutical companies. It really came out of academics.

We also have this incubator in La Jolla called the Pfizer incubator, TPI, which is funding collaborations with highly speculative, very academic ventures. What's really interesting about this, and I'm jumping a little, you talked to earlier panels about transparency and value, and you mentioned others. I listened to one of your people talking about biotechnology and the DNA, the genetics revolution.

And there's a lot of knowledge out there about the value and what people are willing to pay for that kind of technology, and as it has gone from pie in the sky to maybe we can get something into patients that won't be degraded, the cost has gone up and up and up steadily, which make makes perfect economic sense, but none of that really came out of pharma frankly.

I think that's just being honest about where

that's come from.

MS. MICHEL: Okay. Steve?

MR. JENSEN: I was going to say after having watched inventors for almost 20 years, I think there is a particular type of person that innovates, and they have to have around them the freedom to innovate, and I think what Jeff was talking about is precisely so.

In fact, I think there was an article in the *Wall Street Journal* this morning about Genentech and Roche and the acquisition and the same issue and whether or not the engineers would continue and the scientists would continue to be given time to think.

And as I watch inventions come in through our doors, they're usually from people who have time to think, and they're thinking about problems that they're intrigued by, and they will do this as long as they're given the freedom to do it. That is I think one of the reasons that sometimes you see that in smaller companies. There's sometimes more freedom to do that, but large companies can do it, as well, if they're set up right.

MS. SHAFMASTER: I would agree. As I mentioned in my opening remarks, some of the products that Genzyme has developed and brought to market were done completely internally, and others were acquired in from

universities or small companies that were spin-outs of technology from a university.

A lot of it just has to do with focus and being able to do what you're good at and being able to see opportunities wherever they arise. But, if we tried to say that all of our products were going to come from basic research done at Genzyme, we wouldn't be able to bring nearly so many products to market. Too many other things need to get done.

MS. MICHEL: In structuring these deals for bringing in this technology from the outside and making it commercializable, how do you value that technology? How do you set up that deal? Steve?

MR. SINGER: There are a lot of available sources. This is the transparency issue I think you've been addressing with some of the other panels?

MS. MICHEL: Right, and also I would think you have no product. How do you assign a price to this technology when you transfer it? What do you think about?

MR. SINGER: Right. Well, people are aware of what's going on with other companies because of SEC filings and various databases that are out there. Executives go from company to company. While they

have confidentiality obligations to their other companies, they can talk about ranges of royalties, ranges of milestone payments and upfront payment, so there's a lot of information out there in the system.

Smaller companies I don't think are at an informational disadvantage to larger companies, and it hasn't posed a major issue as far as the fact that very often you're licensing an early stage technology and you don't know how valuable it's going to be.

That's really what the structure -- how the structure of the deal works. That influences mostly the up-front payment that you can get, but the milestones. If you're successful, you will get larger payments as you go forward. If you structure your royalties to reward the company when the product has higher sales, you address the uncertain valuation issue to some extent in that way.

MS. MICHEL: So even when you're licensing early stage technology, would you have a royalty based on a product that may come out in the future?

MR. SINGER: You wouldn't do the deal if you didn't have a royalty based on the product in the future, and the companies typically are not doing it for an up-front payment, although that's important for their current operation. Why

they're doing it is to build a company, and to build a company they need royalties and milestone payments down the road.

MS. MICHEL: Okay. Good. I don't have another question at this point. This has been a great conversation. Do any of you have points that you would like to add to the discussion?

MS. SHAFMASTER: I do.

MS. MICHEL: Please do.

MS. SHAFMASTER: I wanted to make the point that when you look at our industry, the biotech industry and you look at what's happened over the last 10, 15 years, more and more of the market is becoming generic and "me too" projects. A smaller and smaller percentage is left for innovators, and there are more and more things that are happening that are going to accelerate that shift.

We welcome a pathway for bio-similars, but we need to recognize that will also accelerate that shift, and any new legislation that weakens patent rights is also going to accelerate that shift. I think it's important that somebody keep their eye on the long term impact of what happens when the entire market only has a very small part getting new products to meet unmet needs for patients.

And all the rest is "me too" products, and I think that administrative agencies may be very well suited to have that long-term view, and I would urge you to try to keep it in mind.

MR. SINGER: I would like to make a point about damages and the calculation of damages.

MS. MICHEL: Please do.

MR. SINGER: We haven't addressed that issues, and it's probably the hot button issue in the patent reform legislation for the life sciences industry, and it really is, in part, immeasurable. We were saying before that the courts have evolving standards. They apply them pretty well.

There's the *Georgia Pacific* tests where there's 15 or so tests, one of which takes into account the contribution of the invention over the prior art. But it's not mandated that has to be the critical standard, and the concern that I've heard -- and this is at the investor level as well as at the industry level, is that moving in the direction of some of the proposed legislation on damages calculation and mandating a prior art subtraction method would once again get you closer to that point of when will people just decide that it's not the best industry to invest in.

MS. MICHEL: And what is the concern by

investors with the way that reasonable royalties are calculated in damages in that wouldn't it be more likely for a biotech product to get lost profit damages if there were infringement?

MR. SINGER: It might be, but the concern is once again the uncertainty that's caused by prior art subtraction method and how that would be applied in a biotech context. It's more the uncertainty than how it might actually work out.

MS. MICHEL: Okay. Yes, Steve?

MR. JENSEN: I was going to say on that damages topic, I was going to say I still have yet to see any data that suggests that there is a big problem in the way damages have been calculated traditionally. I hear anecdotes, but I have yet to see any data on that supports that.

If anything the data I've seen suggests it might be going the other direction, although I haven't seen any good data on that. The lost profits question you posed, lost profits for an early stage company is a difficult proof. It requires several factors, and they probably will not be able to make out those factors in most instances because they will not be able to meet demand yet.

They haven't grown to that level yet. The most

common lost profits methodology and lawsuit is a market share approach to lost profits where you obtain your lost profits based on your market share. Well, if all you have at that point is two percent, you have to make the other proof elements part of lost profits, and that's very difficult for an early stage company to do.

Then they are stuck relying on reasonable royalty even if they have a pioneering technology because proving that, even if it would be a but-for test that has to be met -- but for the infringement the company would have made the sale they also have to be able to meet demand on several other things.

So it's a difficult proof. Not everybody gets to move to the lost profits envelope, particularly early-stage companies. They have to rely on reasonable royalty, and if we look at just focusing on the base of the royalty, that has never made sense to me.

None of these deals -- I've done many, many deals over my career, and no deal is about the base. It's about what is the value, in that deal, that two people can make a good business deal over, and the base will be chosen mostly out of convenience in most of the deals I've done.

I don't know about Steve, but the base has to do

with the counting convenience once you've figured out what the value in the deal is and maybe you think it should be 10 percent on a particular piece, but the base turns into the whole product, and the royalty moves down to half a percent, right, so they can't be talked about separately like they're being talked about in the current legislation in my view.

MS. MICHEL: Steve, would you agree with that?

MR. SINGER: Yes.

MS. MICHEL: Yes. Okay. One question, Steve Jensen: When you talked about the base being a matter of accounting convenience, is that true or does it vary depending on what the claim scope is?

MR. JENSEN: The claim scope of course defines the scope of protection, and as patent lawyers we will often try to do something with that claim scope to impact the royalty base. However, again it comes back to what the value is in that invention, right, and so the claim scope may define a particular piece. It might define the cap on this bottle but that's not sold separately.

The bottle is sold together so while the cap is worth two pennies and the bottle is worth another penny, we'll still, from an accounting standpoint, look at what is accounted for so the claim defines what the parties

are talking about, but not at the end of the day how the royalty is actually calculated.
Sometimes it will, if that's already in the accounting systems for the licensor or the licensee, but if it's not easily accounted for in database systems for tracking, it will usually become something that is more convenient, but again scaled back to what the claims covered.

MS. MICHEL: Okay. All right. We are out of time, and I thank you all very much. This has been very helpful and interesting. Thank you.

(Whereupon, the workshop was concluded at 5:00 p.m.)