FEDERAL TRADE COMMISSION

THE EVOLVING IP MARKETPLACE

Friday, April 17, 2009

9:30 a.m.

Federal Trade Commission

FTC Conference Center

601 New Jersey Avenue, N.W.

Washington, D.C.

FEDERAL TRADE COMMISSION

I N D E X

P R O C E E D I N G S

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MS. MEYERS: Good morning. My name is Erika Meyers. I'm an attorney with the Federal Trade Commission's Office of Policy and Coordination, and I would like to welcome you to the April installment of the FTC's Hearings on the Evolving IP Marketplace. I want to say hello to everyone watching the web-cast.

Before we dive into today's subject matter, I want to remind everyone that we welcome public comments. You can submit those comments through our web site until May 15th. We will also be holding our last round of hearings in Berkeley, California, on May 4th and 5th. Unfortunately, those hearings will not be web-cast, but the transcripts will be available on our web site six to eight weeks (we hope) after the hearings.

Let me make the requisite security announcements. Since you've made it into the conference center, you figured out the metal detector, so I will skip that except to say that every time you leave the building, you will have to go through them again.

In the unlikely event that there is an emergency, we'll be told whether to stay or leave the building. If we're asked to leave, our rallying point

is across the street at Georgetown Law School. We will have your name on a list so please meet us over there to check your name off so any emergency personnel will know that you've gotten out of the building safely and won't have to come running back in to look for you.

Also if you spot any suspicious activities, please let one of the FTC staff or one of the security people that you met coming through the metal detectors know.

With that done, let's get to today's topic. One of the most significant changes to the patent frontier over the last five years has been the development of new markets for patents. Today we will explore the development of these markets and how patents are bought, sold and licensed. I can think of no better way to start, off us on that topic than to introduce Jim Malackowski of Ocean Tomo.

Mr. Malackowski has been a visionary in this area, and has played a large role in shaping new markets. He is President and Chief Executive Officer of Ocean Tomo, LLC, an integrated, intellectual capital merchant bank firm providing financial products and services related to intellectual property, expert testimony, valuation investments, risk management and transactions.

Mr. Malackowski is a member of the IP Hall of Fame Academy and was recognized in 2007 by Managing Intellectual Property Magazine as one of the 50 most influential property in intellectual property.

In 2008 he was again named as one of the top 50 IP professionals under the age of 45 in IP Law and Business as well as one of the world's 250 leading IP strategists by IAM Magazine.

Prior to forming Ocean Tomo, he served as a finance and investment advisor working with one of the nation's oldest investment banks as well as one of Chicago's largest private equity firms. Mr. Malackowski began his career spending 15 years as a management consultant and forensic accountant focused on intangible assets.

In this capacity, Mr. Malackowski served numerous roles as a founding principal, including president and chief executive officer of his firm, growing the practice to the nation's largest before its sale.

On more than 30 occasions, Mr. Malackowski has served as an expert in federal court or the International Trade Commission on questions relating to intellectual property economics, including the subject of business valuation and the impact of advertising

programs.

As an inventor, Mr. Malackowski has ten issued U.S. patents and an even larger number of pending applications. He is an Adjunct Professor of Law at Chicago Kent College of Law as well as an Adjunct Instructor at the University of Notre Dame Mendoza College of Business where he was a *summa cum laude* graduate majoring in accounting and philosophy.

I could go on listing his accomplishments and experience for a lot longer, but I suspect you would much rather listen to him, so I will turn it over to Jim.

MR. MALACKOWSKI: Thank you, Erika, and thank you to the Commission for inviting me to share my views today. For those of you on the web cast, there is a rather extensive presentation that's been posted that would literally take the balance of the day to discuss in detail, but in the next 30 minutes, I'm going to give a brief introduction to our view of the developing marketplace, and I'm going to try to hit on just five specific market developments that we think to be of most significance.

Focusing on slide 3 of the deck, it's an analysis that many in the room, some of who are dear friends, have seen before which is looking at one

example of the public equity markets. This is the S&P 500, but I think it is always important to put in historical context the great progress that we've already made in IP marketplaces.

So put yourself back in 1975 as the CEO of a public company, and let's suppose your company was worth $10 billion in the marketplace. You would find on your balance sheet $8.3 billion worth of stuff, property, plant, equipment and cash, and I think we've forgotten how generally small the premium the market gave you to those tangible assets. The way you had a higher market value was to simply work the machines harder, move the factory quicker.

Fast forward today, even after the market correction of 2008, and if you're the CEO of that same $10 billion company, your balance sheet only shows $2.5 billion of tangible assets. Yet the market is giving you a very large premium based largely upon your intellectual property, the quality of your brand, the quality of your technology, your customer relationships, *et cetera*.

So Ocean Tomo's business and our focus has been understanding the components of that intangible asset bar, helping to bring greater transparency, greater data and greater information.

If you advance to slide 5 of the deck, this is an analysis that we just recently completed and I can discuss, perhaps in the question and answer session in more detail on how it was determined, but briefly it was based upon results that we have from equity indexes that are grounded in patents, but our conclusion as of today is that roughly 22.5 percent of the market cap of most large cap companies, in this case as represented by the S&P, is reflective of intangible asset values specifically attributed to patents, so the marketplace for intellectual property and for patents is a very large opportunity as represented by that value.

With those introductory remarks, I would like to focus on five elements of what we call the developing IP infrastructure, and it's really five specific points to a larger agenda, which on slide 7, describes valuation standard, new efforts to track inventory, new policy leadership from the Obama administration, the evolution of standard contracts, but then primary markets, derivative markets and related reporting.

Topic one that I would like to focus on is valuation standards. When I started in this business in the mid 1980s, I think my first client opportunity was to appraise a patent for sale, not for litigation, and as a young analyst, I ran down the hall to the senior

partner's office and explained that we were going to do an appraisal of a patent for sale, and I was told no. I was told, we cannot sign the firm's name to an opinion letter because it was not covered by GAAP. It was not covered by FASB. It was not covered by their insurance.

Although I protested, I was told to call the Big 8 accounting firms (when we had eight such things), and they basically all told me the same result. They would be happy to advise my client on value, but they were not going to sign Pricewaterhouse, Arthur Andersen, *et cetera*, to the bottom of an opinion letter of patent value.

We've changed a lot. If you look on the screen on chart 9, the standards have evolved significantly so that today it's a common occurrence to walk into any number of accounting firms, economic firms or otherwise, and they will provide you that insight into the marketplace.

I think what's most important though from our perspective is the ability to extend the valuation analysis to a larger, more objective study. The analogy that I use for this is credit ratings. Everyone in this room, perhaps, has a home mortgage, and, perhaps, your home mortgage is let's say a hundred thousand dollars, but how can anyone invest in your mortgage because it's so

different?

Your house value to mortgage value is different than mine. Your income to your mortgage payment is different than mine. Your ability to pay that mortgage and your credit history is different than mine, but with the credit score, things come into greater focus and that if your credit score is a 800 and mine is a 720, knowing just that one data point, intelligent decisions can be made about the risk associated with that loan.

The same is true for intellectual property, and not only Ocean Tomo, but a number of firms have begun to develop rating systems based on their own algorithms and/or, in our case, simply observing what the marketplace is telling us.

On slide 10 is the output of such a form, and it's really driven off of slide 11, which is an observance of the patent maintenance market, and of all the things that I'm going to speak to you about today, I think this is probably the most important.

Over the last hundred years, certain the last 25 years as reflected on this chart, there has been an active but under appreciated market for intellectual property, and that market is, in fact, the Patent Office itself, and the actions of patent owners as to whether or not to maintain or abandon their patents.

For those of you who know, in order to get a patent with the U.S. government, not only do you pay a fee once, but you pay a fee approximately every four years, and those fees increase, and if you look at the collective body of work, less than half of all patents are maintained for their full term.

In other words, those owners have decided it is not worth the expense to keep them, and so one of the things that we try to do is we have tried to observe what information can be gleaned from that market. In other words, imagine an experiment where we put on the left side of the room all of the patents that have been maintained over the last quarter century so we have literally millions of observations, and we put on the right side of the room all the patents that were abandoned.

Which pile do you think is more valuable? One would suggest the ones that people kept, and it turns out if you identify all the objective metrics like area of technology, number of claims, the lawyer, the examiner, and you run the statistical models comparing those two data sets, they are in fact very different.

In general, patents that people maintain are different than patents that people throw away based upon those criteria. The question is: Is it meaningful and

does it matter? I'm not going to go into all of the anecdotal studies that we've undertaken to address that issue, but I'm going to refer to two. The first is on page 13.

We looked at the one thousand largest publicly traded companies, and we compared their gross profit as one indicator of the value of patents, believing that patents can provide features that you can charge more for. Patents can provide manufacturing techniques that allow you to lower your costs or patents can protect markets that give you economies of sales.

From the accountant in me, those three benefits all drive gross profitability or gross margin, so we undertook a study to determine whether or not companies with higher quality patents as determined from the statistics had higher gross profits, and as the study suggests in chart 13, there was an 86 percent correlation.

So for the first observation what we learned is that generally speaking companies with more, better patents perform better. The issue though was chicken or egg. Was it company's with high margins went out and hired great lawyers and got great patents or was it the great patents that got them the higher margins? For that we went to Wall Street and we hired a firm, Ned

Davis Research, and provided them 15 years of observed data from the patent maintenance marketplace.

We asked them to create a wide portfolio of stocks, which we called the Ocean Tomo 300, and to purchase stocks on a quarterly basis knowing only the financial information at the time and the patent's statistical scoring. When they created that index, as shown on slide 14, it out-performed the market generally essentially for 15 years consistently, in 82 out of 85 reporting periods.

Not only did it out-perform from a return basis by 200 to 800 basis points, it did so at a preferred Sharpe ratio, meaning it was less volatile less risk. So, if you go to the Mendoza College of Business at Notre Dame and you ask the finance professor, "Can I take a one factor model based upon patents and outperform the market consistent for 15 years at a lower risk portfolio?" The answer would be no, such things are not possible, the market is efficient.

We know it is possible because the marketplace, heretofore, hadn't understood the value that patents bring because they didn't have the information or the data. By allowing them to look at these rating systems, by allowing them to look at the performance of equities in the market, they're beginning to understand.

I would like to look to a second marketplace, and I'm going to jump forward to primary markets on slide 30, which is the Ocean Tomo marketplace. In 2005, one of my partners sat with me, and we discussed ways to increase the efficiency of selling intellectual property, and he held up a catalog very similar to the one I'm holding here, but it was for a car auction.

He said to me, "Why don't we sell intellectual property at public auction like Sotheby's sells paintings or Gooding sells automobiles?" Frankly, we all sort of laughed at the suggestion because clearly it could not be possible to do sufficient diligence on unique patents in a very short time period and then raise your hand in a public forum and acquire them, but he protested, and we continued and eventually did launch the first patent auction in April of 2006.

At that event, there were more than 400 in attendance. The auction lasted two and a half hours, and all 400, including a number of former patent commissioners and chief intellectual property officers, sat in neat rows of chairs and didn't move, but they took a lot of notes. What we found significant about that first event was not the sales, but the price discovery, because that was really the first time ever in an open forum you could understand what someone

else's intellectual property was worth.

Since then we have conducted nine auctions as shown in slide 31, which had generally increasing results both in total volume and average pricing. We finished our last auction a few weeks ago in San Francisco, and the volume was down, we think largely due to the economy, but the average pricing was in fact maintained.

So, what we now view as the auction marketplace represents episodic price discovery that occurs three times a year, which is helpful. It's insightful, but it's insufficient, and so market number 3 extends the auction results to a larger platform which we call Patent/Bid-Ask, so if you go to the Internet, this is shown on slide 32, to Patent/Bid-Ask.com, what you'll find there is every patent listed in the world, 33 million of them, and if they've been sold and that data has been publicly reported, you will see the price at which that patent transacted.

If the owner of that patent wishes to sell it and is willing to post publicly at ask, you will see the ask. If someone wishes to buy the patent anonymously, you will see the bid. So in many with respects this mechanism is creating further discovery, not only by industry but by geography.

When we launched this platform last summer, what surprised me the most was the phone rang, but it's where the calls were coming from. We received calls from Poland, from South America, from Asia, and essentially the calls went as follows: We, in Poland, believe that Polish companies would like to buy and sell Polish patents between themselves, but there's no way to do that. There's no mechanism. There's no marketplace.

Can Patent/Bid-Ask provide that forum? Can we translate the standard documents that you use for a transaction into Polish and begin to facilitate that market? To which we said yes.

So the experiment that is taking place now is to watch as that market develops over the next two to five years. Will it be Brazil? Will it be Taiwan? Will it be biotechnology? Will it be computer technology? The discovery again will be, I think, interesting and informative for all who participate.

Market number 4, the intellectual property exchange international, referring first to slide 33. Three years ago the State of Illinois came to us with a request to give thought to a traded exchange for intellectual property. Chicago has a long history in exchanges, most recently debt climate exchange, and basically the request was if we can in fact trade carbon

credits on an exchange, why can't we do the same for intellectual property?

So they provided us a grant, and we set out about a two year study trying to develop markets and models that would allow us to facilitate a more robust transparent and otherwise efficient exchange of intellectual property, and I'm going to refer briefly today to two such products.

The first one is shown in slide 33. It is called a unit license right, so let's talk about how the transfer of technology from licensing is historically done, and most in this room are either patent attorneys or in-house counsel, so you'll be familiar with my example.

If a client were to call me and ask me to help them license their technology, and let's pick the automotive industry because it's one of my favorites, so a big three company in Detroit would like to license one of its patents to a Japanese manufacturer.

We know how that process works. You will spend some time trying to contact and arrange a meeting with the potential licensee. That, sometime, may take one, two or six months. By the time you finally arrange that meeting, the focus of that meeting is not on the benefits of the technology, but the licensee's opinion

as to why the patent is invalid and why it's not necessary.

That process takes another one, two, three or six months, and once you finally convince that potential licensee that, yes, there is indeed value in that asset you start phase 3, which is their rolling out of their own patent portfolio trying to explain how their assets could be a benefit to the licensors and why don't we just end up in a cross license?

So most tech transfer today, in our view, is in fact done that way, either on an individual cross license or a large portfolio cross license. That is not a transaction that brings transparency. That is not a transaction that really attributes value to those assets that are indeed the most valuable.

So, we believe that tomorrow the process will look differently. Tomorrow, you will receive a call to license intellectual property, and it will be very much like offering a secondary share of stock, so in my example on the screen, we're looking at the '137 patent where Ocean Tomo or other firms in this room would serve as an underwriter to study the technology, describe the market opportunity and then structure and offer to the market that is probably some subset of expected demand.

So if we believe in my example that the '137

patent could be used on ten million cars and trucks, we may go to the market with a subset of 5 million, and we'll go to that market at escalating pricing, so the first million will be at 50 cents a car. The second million will be at 75 cents a car, and the last three million will be at a dollar.

The auto company would then exclusively license this patent to the exchange, authorizing the exchange to issue the 5 million sub unit license rights at those prices.

Now, why does that make any difference? Well, first if there is a willing licensee, the process is now very simple. They call their broker. They say buy me 200,000 U 137 As, bid 51 cents. That order is filled on the open market, and they're able to place those assets on their books as assets, not an expense. As they consume them, they expense them. If they don't use them all, they can sell them back.

More specifically though, this allows for third-party investors to enter the marketplace. It is our opinion that you cannot create an efficient market for intellectual property or frankly any asset simply limited by those who create the asset, IP, and those who consume it, users. You have to have liquidity.

So in our example, an investment fund could look

at the prospectus and say, Wow, the opportunity is here, is far greater than we anticipate, we're going to buy units at 50 cents to resell them at 75, or in fact we think the opportunity is overstated, we'll short them the 50 cents and cover at a dime. That liquidity into the marketplace allows for greater activity and sale by the original issuer, in this case, the automotive company.

The second big difference is that the exchange will have the enforcement rights. If we have a party after this conference today and our DJ plays Michael Jackson and that DJ did not pay ASCAP, there is in fact an enforcement committee that will track him down and collect the 50 cents or $5. The IP traded exchange will operate the same way, so if the enforcement committee believes that a European auto manufacturer has not acquired units on the open market but is in fact using the technology, they will contact the European manufacturer and politely encourage them to buy.

If that's unsuccessful, they will have the right to sue that manufacturer, and once they sue that manufacturer, they're not interested in a cash settlement. All the exchange is interested in is having that manufacturer go to market and acquire units at the marketplace. Ultimately that case could go to trial.

If they're successful, there will be a damage award which will be used to acquire units. If they're unsuccessful, the patent will be shown to be invalid and not infringed, and the price in the market will reflect it accordingly.

IPXI set out about four months ago to identify potential interested issuers for unit license rights with the objective of finding a beta transaction to launch later this year. They visited 20 different companies and universities, and 18 were interested. Some were so interested they actually bought seats on the exchange.

It's now their expectation that they will bring the first unit license right to market in the third or fourth quarter so this is no longer simply theory. This is evolving quickly into practice, and it's our belief that starting in 2010 there will be an active market, at least a primary market for unit license rights.

Slide 36, I would like to talk now not about primary markets for actually buying, selling or licensing technology, but speak to derivative markets. So one of the indexes that's received a lot of discussion because of our economic conditions in the housing market is the Case Shiller housing index. If you're not familiar with the Case Shiller index, it is an

index that tracks the price of residential homes in various markets around the country and presents that in aggregate view.

Based upon that index, investors can either buy the index long or sell the index short and give them investment opportunity or hedging opportunity to real estate. When you buy the Case Shiller index, you don't actually own a piece of anybody's house. You simply own the financial future contract right.

We believe through IPXI the same will develop for patent indexes, so let's look at the illustration on slide 36, and we can continue with the automotive industry. The blue line represents a company's patent portfolio, so imagine if we took the statistical scores of one of the big three auto manufacturers, and we totaled them and plotted them weekly over a period of time.

The blue line is what you would expect. It would be relatively stable, slightly increasing. The brown line on the chart represents a product, so perhaps this is not the big three manufacturer's total portfolio. Perhaps it's their hybrid electric patent portfolio. It is what you would expect, a subset of the blue line, more recent, rapidly growing.

The black line represents a category, so this

represents the statistical patent scores or ratings for hybrid electric technology across all manufacturers, the big three, the Asian, the European, all aggregated together. Well, this data is relatively transparent because people can understand how it was calculated. It's relatively consistent and the question is: Is it useful?

So, go back to the Case Shiller index. What the purpose of these patent indexes will be, as they're called tradable technology baskets, is to exactly write financial futures contracts against them. So now for the first time investors can decide, "Do I want to own the stock of the big three company or would I rather buy the financial future contract related to the intellectual property alone?"

They can do that for speculative reasons. They believe that the company's got strong technology. They could also do it by category. If your personal opinion is that hybrid electrics are the future and you call your broker and say, "Put my money into hybrids." Well what does she do? She buys you shares of Ford and shares of Honda and shares of Toyota, but that's not what you want. That has labor risk, manufacturing risk. You just want to invest in hybrids. This technique will now allow you to do that.

More importantly it will also be used for hedging. Suppose you liked Toshiba as an equity, but you knew that Blu-Ray would win and HDVD would fail, so you hedged your Toshiba equity investment by buying a Sony Blu-Ray patent contract.

When I go to intellectual property conferences and I talk about tradable technology baskets, I get a lot of inquisitive looks to say the a least. When I go to the Chicago Mercantile Exchange, it doesn't take me this long in a conversation because in about three minutes, they totally understand it and they want to know when it's going to start trading, and the reason is back to that first bar.

There is an appreciation that intellectual property and patents represent a significant portion of corporate value, but there is no way for investors today to access or to break it out or to otherwise trade it. We believe that IPXI will be effective trading.

I'm going to finish up in the time allowed to talk about one aspect of unification. The efforts that I've described about valuation standards, patent auctions, ratings systems is in fact largely related to the activities that Ocean Tomo has been working on in the U.S., but as shown on slide 43, this activity is occurring not just by Ocean Tomo, and it's not limited

to the U.S.

In Japan there is a rating of business. Intellectual Property Bank of Japan has their own rating service. There are rating services being developed in Europe. There's been a separate auction held in Europe, and in our opinion the evolving IP marketplace is building these modules or building blocks in the U.S. and Europe and Asia in the objective of eventually linking them together.

I'll leave you with one last thought example as to the power of these developing markets. Let's pretend we're not talking to the CEO of the public company, but we're at a trade convention in the telecomm world, and each of you represent an individual company, be it Motorola, Panasonic, Philips, you pick your favorite, and you brought with today your stack of patents, your European patents, your American patents, your Asian patent, some stacks are small, a couple thousand; some stacks are large, tens of thousands.

Which stack is best? If you had unlimited resources and a lot of time, could you figure out which stack is best? I would suggest probably not, and if you came back with an answer, certainly not many are going to agree with you, but let's suppose that the marketplace evolves in the way that we believe that it

will, that a rating system which exists in the U.S. today is recreated in Europe and recreated in Asia, and what will tie those together are the foreign counterparts of each of those patents.

So in the introduction it was mentioned that I've been issued a few patents under my name, so let's say that we take one of the Malackowski patents, and we rate it in the U.S., using the U.S. rating system, and it comes back a hundred. On a bell curve a hundred is completely average.

We take the foreign counterpart of the Malackowski patent, and we rate it in Europe, only among European patents, and let's say it comes back and it's rated 120, meaning that same technology or invention is not average in Europe but slightly better than average. We could rate it in Asia and perhaps it comes back in 80 meaning it's a slightly less than average quality among Asian patents.

Well, that one data point alone may not be too illuminating, but that one data point would suggest that if that was representative of every patent, that patents in the U.S. are actually a little better than the ones in Europe and not as good as the ones in Asia, and if you repeat that experiment ten thousand times, our belief is that you will find a meaningful currency

conversion for intellectual property.

So when we're back at the telecomm convention and you all brought your stacks of two, four, five, 10,000 patents and you run through them through the rating systems by geography, you will very quickly come up with an equivalency. Mine is 80 percent as good as your stack.

Now, we still may not agree that solves the whole problem, but like that credit score, it will give us a place to start the negotiation. It will give us a place to discuss balancing payments, and it's a way for the marketplace to begin to get their arms around those assets.

One of my final comment is as reflected on page 43. At the top of this chart, there's a site called OTI.com, and what we've done at OTI is our best effort to aggregate all public IP market data in one place. So for free, just a simple registration of your Email, you can enter a patent number, a technology or a company, and if you enter that data, what will come back to you is: Has this patent been sold? If so, at what price? Is it for sale? If so, at what price? Is this patent the subject of a license agreement that's kept in the royalty source database? If so, what is the license rate of that patent? Has this patent been rated? If

so, what is the rating? Is this patent part of a tradable technology basket that's currently published on OTI? If so, what does the index look like?

So in some respects, my apologies to Bloomberg, but I equate it to the Bloomberg for IP because it allows you in one place to begin to get that price discovery and transparency so that you can make better more informed decisions.

My final thoughts: We were talking before the conference about the state of the market generally and all the initiatives to correct and modify and reform. In my view, the patent marketplace is evolving at light speed, but the context you have to put it in is not 12 months or two years. It's the context of the last 10 to 25 years, that first chart I showed you where industry went from being largely dominated by tangibles - to today it's largely dominated by intangibles, and 25 years in macro economic cycles is light speed.

The market is evolving very quickly to present new opportunities for transfer, new opportunities for measurement, new opportunities for valuation, and although there may be a need for tweaks along the way, the system in our view is, in fact, working. The system is becoming more efficient, and intellectual property will continue to become a greater focus of management and

investors as that trend continues.

So thank you very much for your time today, and we can I'm sure go into some of these issues in more detail as we start the panel discussion.

(Applause.)

MS. MEYERS: Thank you, Jim. We're going to take a quick break and we'll start up again at 10:15.

(A brief recess was taken.)

PANEL 1:
MODERATORS:
SUZANNE MICHEL, FTC
ERIKA MEYERS, FTC
PANEL MEMBERS:
KEITH BERGELT, CEO, Open Inventions Network
MARCUS DELGADO, Chief IP Counsel, Cox Communications, Inc.
STEVEN J. HOFFMAN, CEO, ThinkFire
JAMES E. MALACKOWSKI, President & CEO, Ocean Tomo
LAURA G. QUATELA, Chief Intellectual Property Officer & Vice President, Eastman Kodak Co.
PAUL RYAN, Chairman & CEO, Acacia Research
TRACEY R. THOMAS, Chief IP Strategist and License Negotiator, American Express Co

MS. MEYERS: Let's start the round table discussion, exploring valuing and monetizing patents, strategies for buying and selling patents and the role of secondary markets for intellectual property and how those markets effect corporate decision-making.

Although all our panelists have a great deal of experience, in the interest of time, I will just give our usual name, rank and serial number introductions and we can dive right into Q&A. We have Keith Bergelt, CEO of Open

Invention Network; Marcus Delgado, Chief IP Counsel, Cox Communications, Inc.; Steve Hoffman is CEO of ThinkFire; Jim Malackowski we know is president and CEO of Ocean Tomo; Laura Quatela is Chief Intellectual Property Officer and Vice President of Eastman Kodak; Paul Ryan is Chairman and CEO of Acacia Research; and Tracey Thomas is the Chief IP Strategist and License Negotiator for American Express.

MS. MICHEL: Thanks, Erika.

All right. Thank you. I am Suzanne Michel. I am Assistant Director For Policy here at the Federal Trade Commission and leading this project. I want to thank all of our participants today for being here. We couldn't do this without you.

I'll start with a very general question, and if panelists would like to answer any of the questions throughout the day, please just turn up your table tent, and I'll call on you to speak. Of course, part of the goal today is to respond to the questions but also to respond to each other and to have a good conversation, and having spoken with you all individually, I have no doubt that will happen.

We will be spending a lot of this session today discussing secondary markets for patents where patents are bought, sold, licensed, not necessarily in

connection with technology transfer - perhaps in connection with clearing rights or transferring the patent rights.

If any of the panelists would like to take a few minutes to introduce yourselves and the role of your company in those markets to lay the groundwork, I think that would be helpful. Yes, Paul, thank you.

MR. RYAN: Yes. Thanks for the opportunity. I think because Acacia obviously is probably obviously less well known than the other major companies here, I think it's important to understand our role in this market.

Basically Acacia partners with America's small inventors, manifested by small companies, universities and individual inventors. It's important to note that approximately 60 percent of all patents granted in the United States are awarded to these small entities. They are the key drivers in the invention and innovation market, which is so important to our country's leadership and technology and job creation and to America's consumers who benefit from their innovation.

Unfortunately, these inventors and innovators have virtually been frozen out of the patent licensing market. They tell us that most large companies routinely ignore their licensing request and use their

patented technologies without payments knowing that these small companies do not have the resources to enforce their patent rights.

As a result, these inventors have no efficient way to license their inventions. Acacia's role is to serve this unmet need by providing a licensing channel for these small companies. Acacia provides teams of engineers, patent attorneys and licensing executives that are able to develop and implement licensing programs that generate the appropriate licensing royalties.

We generally split these revenues 50/50 with the inventors. To date our subsidiaries have generated approximately $75 million for our inventor partners. Acacia is serving an important role as a clearinghouse, an intermediary between large companies, who use new patented technologies on their products, and the small companies who invented and patented these technologies.

We have begun to achieve a rational licensing process with many large companies but still encounter a significant number of companies who refuse to negotiate. Acacia's value to America's inventors is represented by 52 independent testimonial statements from inventors and companies who have partnered with us.

These printed copies are available outside on

the table or can be accessed by our web site, and they will give you a flavor of what forces the individual inventor and small companies and universities face on the marketplace, and they're kind of very brief individual stories I think that are quite revealing.

Thank you.

MS. MICHEL: Thank you. Laura?

MS. QUATELA: Well, Suzanne, thanks. I represent the manufacturing company I suppose on the panel, and I just want to make it clear that for Kodak, we come to the markets with a variety of perspectives. We obviously have a long history of innovation going back to George Eastman who invented the capture of memories, so we're a patent owner, and we're very active in continuing to generate invention and innovation.

On the other hand, we also feel an obligation to our shareholders to make sure that our inventions are protected, and so we're a very active licensor, so whether we're addressing secondary markets or subjects like patent reform, we really sort of sit on the fence and look at every issue from both perspectives, as an owner and as a participant in the licensing market.

MS. MICHEL: Steve?

MR. HOFFMAN: Thank you, and thank you for the opportunity to be here today. Like Paul I just wanted

to introduce ThinkFire because we're a small company that many of you probably have not heard of.

We play a similar role in the market as Jim described for Ocean Tomo in that I view our role as helping the market be as efficient as possible in valuation and transferring of patents. We work primarily in the technology space with large companies and help them develop and execute strategies to use their patents to their strategic advantage and their financial advantage.

We also work as brokers helping owners of patents sell through private auctions their patents when they decide that those patents are no longer necessary for their business, and so we have a perspective on the market that is bigger companies, larger portfolios typically where both the buyer and the seller are interested in not having it public that they're buying and/or selling assets.

So the work that Jim and Ocean Tomo does is incredibly valuable in terms of helping provide some data on pricing and on value. We work, as I said, with bigger companies and larger portfolios to provide efficiency at that end of the market.

MS. MICHEL: Keith?

MR. BERGELT: Keith Bergelt. Open Invention

Network is probably not very well known either. It's an entity formed by six industrial companies three years ago for the purpose of ensuring that patents don't represent an obstacle to Linux and Open Source. Linux has advanced into a variety of different applications spaces. Mobile Linux is the most recent entry, but many back office transactions, provisioning a number of other application areas, are replete with examples of Linux's use and its pervasiveness in IT. Intellectual property could potentially represent a threat, and that's why this entity was formed.

We are a net acquirer in the secondary market. We acquire patents from a variety of sources, from universities, from brokers, public and private auctions as well as working to develop alternative forms of intellectual property such as defensive publications, and we also look to eradicate poor quality patents by utilizing something called Linux Defenders, which is a program we put up which is an extension of the peer to patent program and also allows for post-issue peer-to-patent, where granted patents can be challenged and prior art identified sufficient to allow for the elimination of poor quality patents that may have been issued during the period of intense patenting that we just came through.

MS. MICHEL: Okay. Marcus?

MR. DELGADO: First let me thank you for the invitation. For those of you in the D.C. area, you probably are familiar with Cox Communications. For others, we are the third largest cable company in the United States, providing video, voice data and soon wireless to our 6 million subscribers in markets around the country.

We have been an innovator in these various fields and have been active in filing patent applications and getting patents issued and have participated in these secondary markets largely as a defensive measure.

We have become concerned about the commoditization of patents over the past four or five years and are further concerned about how the law will develop as these markets become more mature and want to ensure that the law reflects the realities that are occurring in these markets.

So I don't know, I may be a voice in the wilderness on this panel, but that's our concern as an operating company.

MS. MICHEL: Thank you. Tracey?

MR. THOMAS: Thank you. Thank you for having me. My name is Tracey Thomas. I'm the IP strategist at

American Express. We began our patent program about nine years ago, in the 2000 time frame right after American Express began experiencing lawsuits as a result of the State Street Bank decisions.

We began to see a lot of business process patent type lawsuits being brought against us, and we decided to develop a defensive program. It didn't take us long to figure out that we also had a lot of valuable intellectual property, and as we began to protect this intellectual property just defensively, we began to realize value from that intellectual property.

Thanks to companies like Jim's which provide a lot of great data around valuation, we're able to not just act by instinct but really make rationale economic decisions about how we leverage intellectual property, so much so to the point where we are now a full business within American Express with the bottom line P&L and with financial targets, and so one of our big considerations now is: Is there a market for our intellectual property?

We know we have the assets. We know we have the corporate will, but is there a marketplace that can really help us meet the goals that we have set? We've started to work on an effort that we call the intellectual property zone or the upper Manhattan

intellectual property zone where we hope to bring together a number of different transactors, just companies like us for the purpose of facilitating the identification, valuation and evaluation and commercialization of intellectual property, so a discussion like this is of paramount importance to us, and we're just glad to be here.

MS. MICHEL: Thank you. We've referred to the concept of secondary markets for patents and this kind of trading of patents licensing. How much is that secondary market connected with technology transfer for the purpose of creating a new product? How much is it about clearing patent rights for a product that has been independently created by the manufacturing company or the service industry?

Is this worry about a manufacturing company that puts a product out there and now has to be worried about a lawsuit, or is it something else? Jim?

MR. MALACKOWSKI: So I think it's evolved over time. If I look at secondary markets, for me it began with the web based exchanges in the late '90s. I think at one point we had over 60 exchanges that were attempting to license technology. Yet2.com was probably the most well known and successful.

Today there are less than a dozen of those that

remain. Their original focus was largely on what we would call carrot technology or new technology that they were making available for new product development.

Since that time, the market has evolved to include both continued efforts towards new product development, but not specifically licensing evolving into sale, so you can imagine if you're going to make an investment in a new product, to have a license and a right to use it as one of many is not as attractive in many cases as to own that right and have the monopoly position. So that's been the first transition, from licensing to sale for what we call carrots.

The second transition that I think also is well known is that there are large defensive organizations, some that are represented at the table, and Keith may address that point, that are also looking to the clearing.

MS. MICHEL: Keith?

MR. BERGELT: Yeah, I think both. There's been a dynamic over the last six -- seven years, where you've had players coming into acquire assets for the purpose of -- there are variety of purposes. I think the way Paul's described it is one way of describing how companies that are IP aggregators, as a generic characterization -- IP aggregators have come in and

utilized assets to be able to create value.

Sometimes they acquire assets. Sometimes they co-oped assets for the purpose of creating value for the original owner and for themselves, and in other cases they're looking purely to flip an asset, buy it in the market, and then flip it six months later to be able to generate value through a cost-avoidance litigation settlement.

On the other side, you see a parallel response just lagging eight months or a year, the formation of defensive patent pools to counteract the effect of IP aggregation that's utilized in a somewhat offensive way. You see defensive pools being formed right now.

Certainly in the financial services industry, you see pools being formed. They haven't been announced yet, but companies are getting together to deal with the fact that they're being put upon by IP aggregators who are using litigation as their vehicle to make their point.

So what we do, what RPX does, what Allied Security Trust does, all those are in response to a situation that's created by arbitrage in the secondary market. Jim has contributed to the fact that there is a viable secondary market through the public auctions, and certainly the private auction activity in

tandem has created a certain richness over the last three to four years, in particular.

MS. MICHEL: Where are the patents coming from in that kind of market? Are they the independent inventors that Paul works with or are they coming from large manufacturing companies, some of both?

MR. HOFFMAN: Some of both. I think some of both. I think one of the evolutions that has occurred recently in the market is that, I'm taking Tracey's comment, that you started your patent organization, what, nine years ago? Many technology companies, many companies actually have only recently been in the patent accumulation mode, and they've gotten to the point now, many of them, where they feel like they have adequate defenses, and they were solely focused on building portfolios, and now they realize they have portfolios that give them adequate defense. Now is there an opportunity to start generating some return on that portfolio, either through licensing or through sales.

So the selling posture of large corporations is something that's a relatively recent development. There's always been some corporations that have been selling but the number of large corporations that have started to consider selling their portfolios or at least part of their portfolios has dramatically increased over

the last couple of years.

MS. MICHEL: Have others had a similar experience, large companies selling portfolios more recently? Laura?

MS. QUATELA: We've begun to sell patents with a targeted program and a staff to support it recently for two reasons. First is to fund the transformation that the company is experiencing from an analog manufacturing space to a digital space, which is a highly expensive transformation, and the second reason is to give our inventors some sense of accomplishment if their inventions are not commercialized.

There is a very real tangible satisfaction rate that goes along with picking patents that the company won't practice and putting them out on the market and realizing the return for the shareholder.

MS. MICHEL: Paul?

MR. RYAN: Yes. I think the markets kind of started with small companies and individual inventors who had no way to monetize, and obviously the buying groups are a great resource for those inventors. It gives them the ability to sell their patents directly to a buying group or they now have the choice to partner with us and split the revenues and go out and license.

So I think the situation has certainly improved for small entities, and I think the value proposition is there now being manifested by large companies basically doing the same thing.

MR. DELGADO: I think that, for example, just looking at Ocean Tomo's markets, I have followed the lot since they began offering those patents at auction, and you can see the progression from smaller independent inventors to very sophisticated companies now that provide their patents to that auction pool, and that's -- I guess it's kind of surprised me, but it's a business model, so I shouldn't be totally surprised.

MR. MALACKOWSKI: So I would just respond, Marcus, your insight is exactly correct. When we went to launch the first auction, we visited many of the large companies and were told, "We think it's an interesting concept, we want to be third or fourth, prove that the model can work." So, we began with a lot of individual inventors and perhaps technology that was not as valuable as we now see today, but it is just a natural progression.

MR. HOFFMAN: I think the other thing we have to talk about is the economy obviously is having an impact, and so companies we've talked to in the past that have

said we're not interested in patent sales have come back and said, "Now maybe we feel a little bit more pressure to generate cash or to be a profit center as you are, Tracey." So you see many more companies in the last six months that have historically not been interested in selling patents. All of a sudden they're starting to consider that possibility.

MS. MICHEL: As recently as six months?

MR. HOFFMAN: Yeah. Literally, I think, the market has transformed pretty dramatically in the last six, maybe eight months on two sides. One is that there are many more sellers, perspective sellers than there were even a year ago, and there's some question about whether there are as many buyers as there once were.

MS. MICHEL: That was my next question.

MR. HOFFMAN: There are some of the defensive aggregators that Keith was talking about, like RPX, which is a recent market entrant, and so they've added to the buying demand, but the one name that has yet to be mentioned in this conference, Intellectual Ventures, everybody wants to know what IV is up to and what their future purchases are going to be.

They've represented at least half of the purchasing market for U.S. patents over the last few years, and there's some evidence that they're sated

and are just slowing down in terms of their acquisition pace, and that's going to have a dramatic impact obviously on the marketplace.

MS. MICHEL: What is that evidence?

MR. HOFFMAN: Well, we can -- without getting into specific details. We find that their appetite for certain kinds of assets -- where in the past they said "Bring us anything in this area" -- they're no longer interested in. Their pace of decision-making has slowed down pretty significantly in terms of evaluation of assets and due diligence. They're appropriately quite secretive about both what they've acquired and what they plan on acquiring.

So the evidence that I have, and other market participants I'm sure have their own perspective, is anecdotal but seems pretty clear that they're playing a less aggressive role than they have in the past in the marketplace.

MS. MICHEL: Keith?

MR. BERGELT: PatentFreedom also tracks pretty aggressively the various IP aggregators out there and the companies that they create to hold these assets. The other point that I wanted to make on this topic is that it ties into Steve's comment on the economy in that venture capital backed companies, decisions are being

made every day as to which ones are going to receive funding, which ones are going to be jettisoned.

So there's a fair amount of rich intellectual property that can be harvested from working with the private equity and venture capital community, and we, as an example, purchased a company last year for the purpose of acquiring its intellectual property assets. We retained its lead inventors, and doubled the size of the portfolio in a year by distilling the value that was resident in the engineering notebooks, but also continued to advance invention in the company, turning it into an invention machine, which is a variant on the model of simply acquiring things.

Why don't we pick an area that we're very focused on. Like virtualization is a key area for Linux, and let's invent out into the future to enable Linux, and so that's an alternative approach, and that's feeding opportunity into the secondary market and creating as maybe -- there's a lot of content. Some of the content maybe isn't at the same level. It's a little spotty. It goes through periods where you have some great content, big numbers in sales, public and private auction.

And then you have some periods where you have got maybe a little bit of a down period. It's

cyclical. This enriches the stew about by having these ventures backed companies lead their assets into the market.

MS. MICHEL: Are you talking about situations in which a venture backed company, I don't want to say fails, that's not the right word, but that --

MR. BERGELT: Fail by design. They can't wait five years for the technology and the products that the technology supports to actually materialize so they make decisions to cut their losses and move on, but actually it is -- there is also another dynamic just starting which is quite nascent.

Venture companies are recognizing they don't want to support the cost of intellectual property development. We've moved away from the '90s paradigm where intellectual property was everything, and we're now recognizing that it's about the ability to leverage that intellectual property in unique ways, and you're starting to see players with more supple minds that are running venture firms that are actually looking to do sale license back transactions where they sell the assets, and then they license them back, sometimes on an exclusive basis, sometimes on a nonexclusive basis, sometimes it's a hybrid in terms of their model. We're negotiating a transaction like that right now.

MS. MICHEL: Jim?

MR. MALACKOWSKI: I would just comment on the point that Keith made on the cycles because I think that is exactly right. As we view the market, the first major input was the cycle of increased buyer participation from the aggregators who brought capital and attracted the attention of sellers, and we've been discussing how the volume of sellers has been increasing.

Well, many of those aggregators have a full plate right now, so their purchasing power is down so now it's essentially a buyer's market where it was a seller's market a year and a half ago.

Our view is that the capital will come back into the market from new players that will largely be more global in nature. They will have an Asian, U.S., European point of view, not just the U.S. point of view.

MS. MICHEL: What do you think the motivation of those new players will be? Will it be different than the motivation of the patent aggregators?

MR. MALACKOWSKI: In my opinion, yes. I think we are in a phase now where it is largely defense oriented so aggregators and corporate buyers are looking first for that risk management point of view. I think as you look globally, it will be much more offense

oriented, not the sense of acquiring to litigate, but acquiring to protect markets in industries that are core to those geographies.

MR. HOFFMAN: I think one of the major new market entrants, and they're just starting to get their feet wet here, but it's going to transform the market pretty significantly, is sovereign commonwealth funds which have the kind of agenda that Jim talked about which is not just about monetization, but it's about building a technology industry and defending a technology industry for whatever country they represent, and they are starting to get very interested in this space.

I think most of them are being very cautious but I suspect they're going to be the next major new entrant into the marketplace.

MS. MICHEL: Do they focus on one particular technology?

MR. HOFFMAN: I think it varies. I wouldn't be able to kind of say that they're all adopting the same technology. I think what they're doing is looking at their own countries and the technologies and the aspirations of that particular country and trying to build a patent portfolio that advances those causes, and so it's going to be different from country to country and from sovereign wealth fund to sovereign wealth fund.

As I said, most of them, as I said, are interested and curious and trying to investigate. I wouldn't say too many of them have well formulated plans yet about exactly how they're going to enter the market.

MS. MICHEL: Paul?

MR. RYAN: Yeah, so when it comes to venture capital companies, I think there's a growing awareness that not every start up is going to have worldwide marketing and distribution to be able to challenge large embedded organizations, so I think there's a growing reality among venture capitalists to seed the development of innovative new technologies, protect them through patents and then license or distribute. Basically, it would parallel what's happened in the biotech industry, where you have a group of young innovative companies that do the R&D and innovation and then partner with the larger marketing and distribution organizations, basically the large pharma companies.

And I think the continuing trend will be -- you will see the emergence of more pure innovation and invention companies that in turn are then licensing out those technologies to the broad branding and distribution companies to put in those channels.

MS. MICHEL: Tracey?

MR. THOMAS: Yeah, to Jim's points, I think what

we'll see with a lot of these aggregators is that it will turn offensive. People can't just keep buying patents with the idea that at the end of the day there's nothing at the end of the rainbow. I'm not saying that some of these aggregators are going to sue, but you can draw that inference.

I think it's imperative upon companies in certain industries like financial services to be more proactive and to look to other models like the RPX model where RPX says they're not going to go out and sue. You pay what really amounts to a subscription fee, and patents which are problematic for you can be bought off the market, basically. I think that might be a better model for companies like American Express than some of the other models that are out there.

MS. MICHEL: How does that model or does that model have a free rider problem? Some companies are paying the subscription fee for patents taken off of the street for everybody.

MR. THOMAS: Yeah, I guess you could look at it that way. From our perspective, we have a policy and always have had a policy of not violating the intellectual property rights of third parties, so we can't really worry about someone else benefitting from our actions.

I think you really have to look inwardly and say, "What's best for my company?" I think some of these models tend to be better for certain industries than others.

MR. HOFFMAN: But to deal with the specific question, what RPX does is they buy assets, take them off the street, and then they either resell the assets after they've given licenses to their members and/or they sub-license, and so they're actually trying not only to just spend money to acquire assets, take them off the street but actually generate revenue to offset the cost of acquiring assets by sale or sub-licensing, so nobody actually technically gets a free ride in their business model.

MS. MICHEL: Okay. Keith?

MR. BERGELT: AST has a catch and release model, which is an explicit approach --

MS. MICHEL: If I can get everybody to use the microphone.

MR. BERGELT: -- that within a year everything that AST purchases has to be sold back into the market, so there are increasing attempts to discourage free riders. Our model is very open, and because we can never sue, we are the whitest of white hats in this gambit because our community is the least accommodating

of transgressive behavior that the Open Source community allows.

MR. HOFFMAN: I was hoping we would start getting into this.

MR. BERGELT: The Open Source community does not look fondly on patents in some situations, but looks even less fondly on the notion of its protector acting contra to best practices as to what the most edgy of Open Source players would prescribe.

I think another interesting point, going back a bit, is that because the sophistication and the comfort level with assessing intellectual property and its relative value, some of the things that were discussed earlier, traditional notions of make or buy decisions were getting people more comfortable, buying assets and bringing them back in and building businesses around those assets so creating spin-ins of assets to be able to bolster businesses. This wasn't done before because there wasn't that comfort level.

So, I think there are a number of other things that have gone on. Financial services is another arena where lending against intellectual property has helped with this overall approach to obtaining the asset class, turning it into an asset class rather than just an aberrant source of value.

And I think some of Jim's presentation earlier helps you sort of see how value is really transferred in organizations from hard to soft, and soft needs to be leverageable.

MS. MICHEL: Tracey?

MR. THOMAS: We talked about the free rider issue, and I may say something that might be a little bit controversial, but if you take a company like Intellectual Ventures, they've been purchasing patents for a number of years, and at American Express we know anecdotally that some patents that could have been problematic for us probably have ended up in their hands, although it's hard to know because you can't really tell what Intellectual Ventures is buying these days, right?

MR. HOFFMAN: They have 300 separate subsidiaries.

MR. THOMAS: But at the end of the day we know that we've benefitted at least in the short-term so the question will be: Will it be more efficient for us in the long-term when they come and ask for a licensing fee, right?

MR. HOFFMAN: Right.

MR. THOMAS: So free riding? It takes place at all different levels, and not all bad has happened

because of aggregators like Intellectual Ventures out there.

MS. MICHEL: Laura?

MS. QUATELA: Going back to the point Keith was making, we have created a unit which goes out and seeks the small inventor and seeks to build on the smaller inventor's invention's bigger business. We've done that largely because we're afraid to respond to inventors when they come to us, and we're afraid because we don't know if they're seeking us out as a target or if they actually want to partner with us, so we decided to become proactive and go out and find our own inventions to augment those we created.

MS. MICHEL: That's interesting. Can you just spin that out a little bit, the fear of the independent inventor coming to you as a target, just elaborate on that?

MS. QUATELA: As often as not, unfortunately, in this new world we live in, when an inventor knocks on our door, it may not be because they're seeking Kodak out to partner in an invention, but rather because they see us as a target for their current inventions, and they just want more information to use to create a lawsuit.

MS. MICHEL: Marcus?

MR. DELGADO: A couple points. One, I was going to go back to some of the factors that have changed over the past couple of years, and I don't want us to lose sight of some of the changes that have occurred in the law as well that have had an effect on behavior in these markets and have either increased behavior through certain venues that may be more favorable to patentees or have decreased behavior because, for one reason or another, the obviousness standard has changed for example.

So, that may tend to decrease the likelihood that you'll go out and aggregate patents. Then to follow up on Laura's point, we also simply have a policy that we won't talk to third parties that kind of just knock on our door. We innovate and we innovate at the same time, and so we don't know, as you said, whether or not someone is looking at us as a true partner or as a target. We have been burned in the past when we thought we were being viewed as a partner, but in fact were being viewed solely as a target so we've changed our practices. Apparently we don't have enough live bodies.

MS. MICHEL: I don't know what's going on [with the lights].

MR. HOFFMAN: We're just too still.

MS. MICHEL: Jim?

MR. MALACKOWSKI: So I would simply comment that this issue of an inventor that approaches and there is legitimate concern about whether you're a target or a partner, that the market continues to try to find ways to solve that problem, and Laura described one, but many companies have now instituted a clean room policy where they engage an independent third-party, whether that be a law firm or an IP appraisal firm, to screen all of those incoming submissions and match them against a very specific set of criteria that the company is interested in, is not currently developing on their own and then facilitate an introduction that's less threatening.

So the point I made earlier in the comments is that this market place continues to evolve to these changing needs in a way that I think is quite effective.

MS. MICHEL: Laura?

MS. QUATELA: Sorry.

MS. MICHEL: Tracey?

MR. THOMAS: To pick up on Marcus' comment, I think it's terrible that a company like Cox, which probably has a lot of innovation going on inside of it, is forced to be put into a situation where it has to say, “Hey, we can't listen to third-party ideas.” I think it underscores a need for a more efficient marketplace so that companies like Cox and American Express aren't

afraid to answer the call when it comes.

And I think we all know now that there's a lot of evidence that suggests that the wisdom of the crowds can be very valuable. But, if we can't open the door because we're afraid of lawsuits, and we have the same problem as Marcus, at the end of the day I think it's a problem not just for these companies but for our economy as a whole and the need for a better marketplace around intellectual property.

MS. MICHEL: Is it a failure of the efficiency of the marketplace that's causing that problem and how so?

MR. THOMAS: Just off the top of my head valuation. There's extreme inefficiencies around valuation. At last count, I was told that there were at least 1,500 different valid ways to value a patent, right.

MR. HOFFMAN: Which means there's none.

MR. THOMAS: Which means there's none, and if you can't come to a meeting of the minds about what something is worth, I don't care what it is, it's not likely that you're going to be able to transact around it, so there are plenty of inefficiencies, and for me I put valuation probably right at the top.

MR. HOFFMAN: Yeah, I think that's exactly

right. We get approached often by individual inventors that want to monetize their patents and there is, in most cases, if not just about all cases, a tremendous gap between reality and their expectations with respect to value.

A lot of it has to do with pride of ownership and invention and authorship, which makes a lot of sense obviously. But, a lot of it has to do with the misconception of how do you go about monetizing a patent through licensing, and what are the risks, what are the probabilities of being successful, and most of the conversations we have break down because there isn't anyway to come to an alignment on what a realistic valuation for an asset is.

I think if people thinks the asset is way more valuable than it actually is, they're going to be more aggressive in terms of trying to monetize it.

MS. MICHEL: Okay. Marcus?

MR. DELGADO: I actually attended a talk that Tracey was at where he talked about how you sort of go through valuation of patents. I said that's a perfectly legitimate way to do this. Courts wouldn't recognize it necessarily. If I go into the next room, someone else could come up with something completely different, and as a lawyer, I'm primarily concerned with how the court

is going to look at this valuation issue.

And right now I think courts kind of struggle with how do we value this thing. So, now they're essentially doing what we do which is figuring out how much it is going to cost us to litigate this thing, and that's just extremely inefficient. I think companies have sprung up based on the fact that their entire models are based around how much it will cost to litigate, and since that cost has increased over the past few years, it's become very lucrative.

So I think there is a lot of -- since there's so much mystery around patent valuation, it puts some inefficiencies into the market.

MS. MICHEL: Marcus, do you face any other problems when considering whether to bring in technology from an outside party beyond the valuation of associated with just the difficulties of what technology it being offered to you and how much further it has to go in terms of developing it into a product?

MR. DELGADO: Yeah. So, if a third-party comes to us and says that they have an idea or that they have a patent on a particular area of technology that we innovate in, there's a difference between the quality of the engineering that our folks are doing who have been in this for years and have been involved in this

technology and understand the problems that can occur and what can crop up versus someone who comes to us and says, I have a great idea that I came up with last night on the back of cocktail napkin.

It's just I'm sure that person is a very intelligent person, but it's like I can't engage with that person. But that person can go out and get a patent based on what they came up with on the back of that cocktail napkin, and if they were able to convince the Patent Office that the idea is new and non-obvious, *et cetera*, then now I face a real problem.

So it's difficult to ascertain the quality of the actual idea that the person has come up with. The patent system doesn't necessarily -- I think we have a great patent system here, but it doesn't search the way the European patent system searches, for example, so a lot of bad things can come out of the Patent Office.

So those are some of the challenges that we face.

MS. MICHEL: Did any others have comments on this last point that Marcus made? Tracey, then Paul?

MR. THOMAS: Yeah, the comment about the inventor putting something on the back of a napkin really kind of begs the question: Is it a good patent or is it a bad patent? If it's a good patent, then

maybe that person or entity should be compensated accordingly. A lot of times, to your point, it's a bad patent, and you face the threat that this patent could be used against you later.

At the end of the day though my instinct is that an efficient marketplace might marginalize the bad patents. Now, that might be kind of lofty thinking, but if you think about Jim's comments about his exchange, and I don't work for Jim, but you could see where inviting other investors into the party other than just the buyers and sellers can really create a lot more liquidity so that it would be expensive to ignore the good patents basically and the good intellectual property so that maybe people would spend more time focusing on valuable intellectual property instead of nuisance lawsuits, and that includes everybody, lawyers, all the way through the corporate players like myself.

So to your point about the bad patents, maybe we can marginalize them through a more efficient marketplace is my point.

MS. MICHEL: Paul?

MR. RYAN: Yes. Relative to valuation and quality of patent, one of the key functions that Acacia performs I think in the marketplace is giving inventors realistic expectations, the problems you've addressed,

because if they have unrealistic expectations, we won't partner with them.

They have to understand that large companies have multiple royalty obligations. They have profit margins they're operating under, and so I think our teams have experienced licensing executives who we've recruited in out of the industry, have a good appreciation for that and can temper their enthusiasm and expectations to reality.

And another function that we perform is doing a tremendous amount of due diligence because we probably see multiples of opportunities, and we only select a very few from a due diligence standpoint, so I think from that standpoint, we do act somewhat as a clearinghouse so when we come to companies, they know we're an objective third party. We don't have any emotional or unrealistic expectations about value.

And that's why I think we've had some early limited success in rationalizing the process and actually getting transactions done on behalf of small companies with large companies.

MS. MICHEL: Jim?

MR. MALACKOWSKI: I would just again encourage a more historical perspective. We have inverted our economy from an industrial economy to an innovation

economy in a relatively short amount of time. We have made tremendous progress on the valuation issues. I go back to 1988 when I started IPC Group. We were the only firm that would appraise your patent, and there was no FASB standard to look to.

Today it is a customary thing. All the accounting firms do it. They use the same FASB pronouncements. There are original organizations such as LES, and Ken Schoppmann's in the back of the room, their administrative director, that will now certify you as a licensing professional, requiring you to go to training that covers how to value a patent so we're making great progress. Sure, there are mismatches in expectations but it's getting better.

My last comment on that is the auction or other publicly reported data is starting to have an effect. When inventors come and they describe their idea, I can tell after 15 minutes, I'll interrupt and say, Let me guess how much your idea is worth, and I'll say a billion dollars. How did you know? Well, because it's the third billion dollar idea I've heard today. It's not. Look at what patents are selling for on the open market. It's a few million dollars. It's not a billion, and the ability to show them those reference points does make a difference.

MR. HOFFMAN: Absolutely.

MS. MICHEL: Keith?

MR. BERGELT: Intellectual property in general, to Jim's point regarding valuation, the fact that several billion dollars has been put out against intellectual property since '97 as a naked asset where intellectual property is the only and sole source of collateral I think is very significant because that's the hairy edge of valuation where you're basically putting real dollars against that as a naked asset.

In the event of a default and foreclosure that's all you have. You don't have anything else to be able to recoup. So what we're seeing in the market now is some of the transactions that were done over the last five to seven years in particular where intellectual property was the sole and exclusive source of the loan where those assets are now coming into the secondary market which is another vehicle that ties into the VC [venture capital] side, but it's a similar process. Companies are going and filing for chapter, and once they're in BK [bankruptcy], those assets are then held back, then taken by the creditor. Then, they're being liquidated in the market, and it applies to patents, trademarks and copyrights that are being taken in this way.

So the market has matured while people have been

not watching because there's been this whole trend around intellectual property collateralization which is an extension of securitization. And those things are all dynamics that people need to look at when they think about this whole issue of the secondary market because these are assets that are bankable assets, and the reason they're bankable is because they have to be in order to drive economic growth.

You can't lend just against hard assets because then you can't lend it up to debt service -- reasonable debt servicing capabilities. Private equity does not work if you can't lend against intellectual property, period, because private equity is based on leverage, reasonable leverage, multiples of three to four times to be able to do a transaction. I think it's very important because private equity is the straw that stirs the drink.

MS. MICHEL: All right. We've been mentioning valuation of assets in this kind of market. Is that valuation based solely on the ability to assert that patent against someone who's independently developed a product or is it about getting someone developing a new product based on that technology? Does it matter? Steve?

MR. HOFFMAN: Valuation -- I agree with Jim's

point, first of all, two points I guess. One is that Ocean Tomo auction has been incredibly valuable because it has provided public data on valuation which has not existed before. It represents a small percentage of the actual transactions, most of which you don't have that data on, but at least it's a foundation, so that's good, and I think valuation has gotten much better over the last couple years.

But most valuation techniques are actually more or less the same, and they take multiple perspectives and try to triangulate. One of which is what you just said, which is if I was to assert this patent and try to generate royalties or damages, what is a reasonable discounted cash flow expectation based upon time and risk and money involved in generating revenue.

So that's a starting point so but there are other reasons that people potentially buy assets including for defensive purposes, replacement versus doing their own R&D, and then the comparable database that Ocean Tomo and others have created, and you take those four different perspectives because you have different buyers that would value it differently and try to triangulate, but it's still an art form. It is not a science.

It's a lot better than it was five years ago,

but it is still an art form which creates some of the problems that Tracey was talking about.

MS. MICHEL: Okay. Tracey?

MR. THOMAS: Yeah. For us at American Express the patents and technologies are inextricably tied when we look to valuation. As we look into the future in terms of what we think our IP business can do. I can tell you that patent sales -- pure patent, paper patent sales and licensing probably represents less than 5 percent of that.

So at the end of the day for us it's about creating new opportunities in the marketplace, leveraging what we consider our core assets which is information management around payments, so for us it is about new products.

MS. MICHEL: All right. Good. How does the high price of patent litigation figure into the operation of these markets and the valuation of the patents? Paul?

MR. RYAN: Well, certainly from the perspective of the small companies, it basically shuts them out of the market, and that's why I think so many innovators have come to Acacia because if they have a realistic expectation of their value, say they think their patent is worth to a company that's using it -- is worth 10

million, and they know if they try to assert it in the judicial system, it may take them as many as ten years and cost them 20 million, then effectively the award of the patent has been rendered moot by the cost of enforcement.

So it has a dramatic effect, particularly the less capital the owner of the innovation has, the more the dramatic the impact.

MS. MICHEL: Keith?

MR. BERGELT: I look at it from the other perspective in terms of the inefficiencies associated with the endless stream of litigation. While Paul's taking the position of the small company, I would look at it from the companies that are actually reducing to practice, practicing entities, formerly practicing.

Qualcomm is a formerly practicing entity, not terribly successful as a practicing entity, but incredibly successful as a formerly practicing entity because of its licensing business.

But then there are totally non-practicing entities, never attempted to reduce the practice, never brought capital to bear. I mean, this isn't an environment where there is no secondary market. This is the best place in the world from which to grow businesses. To be able to attract capital we have a

viable secondary market. We have access to capital. Even in a down economy you can access capital to bring to bear, grant good ideas.

You can basically take those inventions, bring people to them, bring capital to them, and with smart oversight from private equity, and you can build businesses. That's what I would view as a more productive vehicle to leverage value rather than simply to assert and litigate your patents to create turbulence in the market, what some would call troll turbulence in the market.

MS. MICHEL: Laura?

MS. QUATELA: The practical reality for me is although there has been the evolution of FASB standards and more rigor, I guess I would say, around valuation methodology, the fact is when I sit down in a room to commence a valuation discussion, whether it's with accountants, consultants, whomever, I end up in a different place each time.

What I do know is how much it costs to litigate. I know that very well as a lawyer. I understand it. I know in various -- virtually every jurisdiction what it will cost to almost a penny. So, practically speaking, I tend to revert to that type of valuation in a patent discussion. I know it. I feel it. I have a gut

instinct around it.

MS. MICHEL: Okay. And does that lead to avoidance payments?

MS. QUATELA: It does. Sadly, it does.

MS. MICHEL: Marcus?

MR. DELGADO: I would say to your point that the independent inventor faces a hurdle in patent litigation because they may have to pay 10, 20 million dollars to litigate. I would say as an operating company, we probably have to pay 10 to 20 million dollars to litigate it as well, so it isn't exactly a picnic for us on this side.

And I would say in litigation, the costs to us versus an NPE are significantly different. The discovery burden on a company of Cox's size is fairly large, and the churn and the depositions and discovery that goes on inside our company is significant whereas an NPE, who has acquired this patent, and may not even have any connection to the original inventor has a very small burden in terms of discovery.

So I think that there are some inequities there.

MR. BERGELT: And that retards innovation. That's the bottom line is you're not putting capital to work where it should be put to work. I would much rather see AmEx or B of A or J.P. Morgan Chase put the

400 or 500 million dollars a year that they spend on payoffs to be able to make these suits go away, putting it into new products and services that we can all benefit from.

MS. MICHEL: Tracey?

MR. THOMAS: Yeah. Certainly the NPE problem is increasing. We know that it's increased about 300 percent since 2001. In financial services alone we know there are at least 15 non-practicing entities targeting financial services, so we know that we do need models like the RPX model or the Intellectual Ventures model to say, "Hey, how do we get some of these patents off the street" and come up with a more efficient way of dealing with them. That is well accepted.

On the other side though, and I'm not talking out of both sides of my mouth here, I'm trying to be fair, we know at American Express that some our most valuable intellectual property has come from smaller companies where we've acquired the rights.

Individuals who did not have the capital or didn't have the access to the venture capital that Keith was talking about, some of that intellectual property we're hoping to list on Jim's exchange one day. So, at the end of the day, I think you have to look at both sides of the equation, and that's where the more

efficient marketplace hopefully can marginalize the troll problem and make it so that as I said before it's expensive not to participate in the efficient marketplace.

MS. MICHEL: Laura?

MS. QUATELA: Just to underscore Keith's point, just to give you an example, not only is it money that we're diverting to defensive purposes, but in my group I've employed the inventor of the digital camera who has worked for me for five years on defensive litigation. Imagine what he would have invented in those five years if he was out in his R&D community doing more productive things.

MS. MICHEL: And, Laura, can you give us any sense of how the number of patent assertions and litigation against your company has grown?

MS. QUATELA: Yes. In 2000, we had, I believe, two defensive cases in our group. Since that time, we average about 15 to 22 or 23 new assertions per year. Although we have seen a leveling off in the last year, I think that has more to do with the economy than anything else.

That's our experience, and we find it through participation in groups, some of which Keith has mentioned. We find that to be a fairly familiar growth

rate for other companies.

MS. MICHEL: Okay. Marcus, can you give us a sense of the amount of litigation that your company participates in?

MR. DELGADO: Sure. I joined Cox in 2004, and before I joined there, I believe they had one patent litigation, one patent lawsuit, and since I've joined, maybe it's because I joined, we've had four to five per year that have come up. I would say about 90 percent are NPEs that have sued Cox since then, so it has grown significantly and the litigation costs have just skyrocketed.

MS. MICHEL: Keith, did you have a point on the growth?

MR. BERGELT: Yeah, I think Jim may be able to provide some data because I think I've seen some slides that you've presented, Jim, but I may be wrong. Microsoft and IBM historically over the last five years are their biggest targets, Microsoft being the largest target. The deeper the pockets, the healthier the entity, the more activity, so these are high growth, very successful companies, and they are routinely set upon by non-practicing entities.

MS. MICHEL: Okay. Paul?

MR. RYAN: I think it's important and obviously

it's a large cost to large companies, but proportionately it's a dramatically larger cost to small companies. You've probably heard some testimony from Interdigital and Tessera and innovation companies where their legal and litigation budget can be 20 percent of revenues, so it's dramatic problem.

I think also it's important to understand that there really shouldn't be any distinction on a practicing and non-practicing entity. I think the Chief Judge [Michel] in December was here and gave some testimony and said there's no legal logic as to why it exists.

In our organization we have an acronym NPI, instead of NPE, which is a non-paid innovator, so I think it's important to look at it from both perspectives. We certainly understand that large companies may feel put upon.

What we've seen historically is if we can engage in a rationale discussion, 95 percent of the time we can come to a rationale agreement and eliminate all of that excess cost for both parties.

I think a lot of large companies have become over defensive for maybe appropriate reasons and have kind of chilled the conversation leaving the small innovator the only choice but to litigate.

So what we try to do is mediate and

immediately have discussions and licensing discussions that we think are realistic, and we've been very successful in taking some of that hostility away and getting down to business and getting realistic licenses done. So, I don't think it's impossible to do or a problem that can't be solved if you've got intermediaries with the right motivation and you've got large companies with the receptivity, the licensing technologies they think they use.

MR. BERGELT: Paul, isn't most of your -- this is just the dynamic, but most of your pieces found on the other side of war, isn't it? I mean, you litigate and then you get rationale discussion.

MR. RYAN: It didn't before, not before --

MR. BERGELT: Just in the last few years.

MR. RYAN: Well, the change in the law has forced us to do that.

MS. MICHEL: Jim, and then we'll come back to that point.

MR. MALACKOWSKI: Well, from my perspective, the enforcement marketplace has evolved as well, and I would point to three facts. One is the partnership of the inventors has changed. The contingent law firm option has greatly diminished, in large part because of the economy, but what has taken its place are institutional

investment funds from very large firms like Credit Suisse and Deutsche Bank that will now partner with individual inventors to enforce. Why that's significant is their standard of diligence to accept and enter into an enforcement action is, in my opinion, far greater than what used to exist at a contingency law practice.

The second change is I think we have had substantial reform, if you want to call it that, through the Court system, and in particular the *eBay* decision is one notable example which has changed the dynamic of the threat of the injunction, that has had a significant effect on those who seek to enforce.

Then lastly, I point to interesting policy experiments that are going on. Google recently announced that if, in fact, you sue them for patent infringement, they're not going to settle with you, period, end of story. It's going to trial. Well, now the calculus say, well this is going to cost me ten million dollars as the plaintiff to get to trial and I know I'm going to have to spend that money, maybe that changes how often you in fact litigate. So, it will be interesting to see if those policies are in fact successful or make a difference.

The last balance point that I would mention is

although I can understand the stress that the litigation budget places upon the operating entities, as patents are found and shown to have significant value, either through the litigation process or through the open marketplace, most of those operating entities like Microsoft and IBM that were mentioned by Keith have their own portfolio of thousand or tens of thousand of patents that ten years ago were not given much respect or value credibility, but today because of those catalysts in the marketplace people look at their own portfolios in a much different way.

So there is a little bit of a counterbalance and a value recognition that exists because of such enforcement actions.

MS. MICHEL: Okay. Do other panelists have comments on why we've seen this growth in secondary markets over the past seven years, nine years, ten years? Jim mentioned an influx of private capital. Are there others?

MR. RYAN: Excuse me. I think it may be more fundamental, I think Jim and the other people have been here for a while. Texas Instruments, based on its financial difficulties, went to an aggressive licensing model and was successful, and then not too shortly thereafter, IBM built a very profitable business out of

patent licensing and certainly companies like Qualcomm.

On the other side you saw great institutions like Bell Labs and Xerox Silicon Graphics who are great innovators who didn't get any value for their patents essentially go out of business, so if you've got the largest companies in America wanting to earn a return on their R&D investment, it makes sense that mid-size and smaller companies are going to start wanting to earn those returns.

And I think it focused more companies on what Jim has pointed out as the increasing importance of IP as a component of value in any company, and I think that's the fundamental issue is you've had a shift in the economy, and it's now reflected in those markets.

MS. MICHEL: And are you suggesting a shift in the source of innovation away from the Bell Labs model towards a smaller entity model?

MR. RYAN: I think it's interesting. I think it's being reinvigorated. People like Intellectual Ventures with their invention group, companies like Tessera and Interdigital. I think it's much more logical in our economy to have specialized companies and innovation putting that innovation into distribution channels. It certainly worked in the biotech industry, and I think it would have merit in the tech industry.

MR. MALACKOWSKI: Suzanne, I think you could find the answer to your question of why have we seen all of this activity in the last five to ten years at every cocktail party you attend because people will say that manufacturing has left the U.S. for China, for example, and service has left the U.S. for India.

I hear that and I look at them and say, What's left, and they don't have a quick response, and what's left is not just innovation because if you innovate, and you can't protect it, it gets quickly moved to a lower cost marketplace. What's left is proprietary innovation, and that's what's driving corporate value, and as the market recognizes it, it's only obvious that they would begin to trade and otherwise value and invest in those assets.

MS. MICHEL: Keith?

MR. BERGELT: But priority innovation, this ties into Open Source because we're not inventing. We're not doing siloed parallel invention of fundamental technologies the way we did 10 or 15 years ago. We're now inventing higher up in the stack collaboratively. What's proprietary is actually more particularized above the middle wear layer if we think of telecommunications, electronics and IT, and so it's a different modality for invention that's occurring, far

more collaboration higher up in the stack, a lot less concern about contamination and market price fixing and all the other concerns that we had from an antitrust standpoint during the '80s and 90s.

And it's much more of a freer invention environment, so we're changing the way we invent. We're creating attachment points beyond the G8 countries for the global economy to actually connect up to be able to allow the best and the brightest minds to actually attract capital and allow it to flow over the 'net out to the developing world rather than encouraging intellectual capital flight from developing countries to places where capital actually existed, where the secondary market was, i.e. the U.S. for the most part during the '90s.

And so we're creating -- we're part of this larger macro dynamic where there are still companies that have a somewhat siloed mentality, but a lot of companies are actually participating very aggressively in this changed dynamic of how we invent together, far more collaboration, far more coordination and invention up in the stack which means that what we choose to patent is far more limited.

MS. MICHEL: And do your comments pertain to Open Source software or broadly?

MR. BERGELT: Actually you think about your business. You think of your business in particular. A lot of it is software driven, and so there aren't a lot of things -- as we get more and more intellectual capital driven to Jim's point, more and more focused on creating value out of innovation and invention, those inventions are occurring collaboratively. The idea - it's Brian Arthur's view of increasing returns - one plus one plus one equals six, not three, and that's what's happening in this economy.

And it's globalized invention and innovation, so software runs a lot of the businesses that we look at, and increasingly this will break down barriers. Software and hardware development will occur through an Open Source model.

MS. MICHEL: So what are the panelists' views on whether this increased growth in the secondary markets, is it good for innovation, bad for innovation, innovation in the sense of getting new products to market? Tracey?

MR. THOMAS: I think it's absolutely good. When you look at some of the surveys that have been out there that say the current IP transfer market is about 100 hundred billion dollars but it represents only a tenth of what it could be, I think the secondary markets can

only help through reinvestment.

It's part of our policy, just like it was part of the policy of the IBMs and other companies who have been successful leveraging intellectual property, to use IP as an investment funding source for more innovation. So I think anything that contributes to that is a positive thing.

MS. MICHEL: Do we have to weigh against that the cost of the increased litigation that some manufacturing companies are facing?

MR. THOMAS: You know, I can't speak for the manufacturing companies, and I'm very empathetic to them.

MS. MICHEL: Any product company that faces litigation.

MR. THOMAS: But I think if you look at the scale of what the opportunities are, I go back to this point about marginalizing the issues like the litigation issues. People will focus on value if it's there. If we're able to unlock the value that's in our economy now, I think what you'll find is people will militate toward that. You'll see less frivolous lawsuits.

You will see better diligence around future opportunities as Jim mentioned because there will be more funding for it, and I think we'll all get smarter as a result. That doesn't mean you're going to

eliminate litigation. It's going to be there, but you have to take some of the bad with the good.

MR. DELGADO: I think I tend to agree with that. I think these markets ultimately can be effective. My concern it just that I don't think the courts have caught up yet with where they are. I think maybe in five to ten years when courts are -- maybe the damages standards change or they recognize sort of some of the inequities that can occur, I think these markets are great. I think they offer a great opportunity for investment and innovation and investment and technology.

My big beef is that the courts are in 1800s patent law, and we're dealing with 21st century technology and business models, and so that's my concern.

MS. MICHEL: And, Keith?

MR. BERGELT: I think picking up on the point that Marcus made, it's not even just judicial reform. It's legislative reform. It's regulatory reform, and it's also the market meeting those reforms halfway, the market being much more proactive and involved and recognizing -- we talked about free riders. You can't sit on the sidelines and opt-out of your obligation and responsibility to help the process because you've got record levels of invention that's being filed in the

form of patents.

What you need is the ability to codify what you know so that prior art can be identified and recognized. A lot of the problem has been identifying prior art because of the challenges associated with particularly our patent examination process and the limitations of time, and the employee churn rate, so we have a lot of issues to deal with, but it's not about looking to Washington to solve the problems or looking to the EPO to solve their problems.

It's the community getting involved, take bad patents out, find prior art, request re-exams patent applications that are in the clear, that you can actually see, contribute by identifying prior art that's relevant so that bad applications don't get granted, help to raise the qualitative level.

There's a see change going on and we need to actually start to infuse the notion that this is -- as young inventors come into companies, that this again is their obligation. It's not just invention for that company. It's ensuring that other assets don't come into the fray that can be used negatively by alternative business models like troll models.

MS. MICHEL: Jim?

MR. MALACKOWSKI: Can I take a little bit of a

counter point of view on the court system and patent reform? In my experience base, as having been an expert witness on damages for 20 years and testified at 30 jury trials and worked on hundreds of matters, I think the court system does a pretty good job.

I think if you look at the aggregate damage awards for patent infringement during a year and you sum them together, are we talking a billion or two? How important are patents to our economy, and if there is a tax of a billion or two, let's say that half of that is completely bogus? So there's a billion dollars a year that's flushed away? Look at the opposite contribution. It's not that significant.

In the cases where I've testified as an expert, and clearly I have worked for one side versus the other, but I get to sit, listen to the evidence and see what the collective wisdom of 6 to 12 individuals comes back. You know what, they don't always come back with my opinion, but most of the time, in fact all the time they pretty much got it right. They pretty much understood the balance.

MR. BERGELT: I think you're underestimating the costs though, Jim, when you think about Laura's point, the opportunity costs that are lost as well as the fees. The fees are where all the costs go, not into damages.

MR. MALACKOWSKI: So I accept that, and so how do you deal with the fee issue? I go back to the way the market is emerging either through more sophisticated diligence before they bring an action through policies like Google that are trying to address and put in equal risk on the plaintiffs on the fee issue, so let the market adapt.

Again we're just talking about a transition that's only 10 to 15 years old of this complete inversion of our economy. We can't go and start tweaking with all of the laws and the rules to try to fix it as it's maturing. It's a teenager. Let it grow.

MR. BERGELT: I still think we have the issue of prior art, which is an ongoing problem, and if you have -- you don't have any institutional memory to speak of in our Patent Office. You've got incredibly high employee churn rate, limited knowledgeability. These are issues that need to be addressed institutionally. So, reform is necessary.

Maybe I'll accept your point on the judicial side. I think a lot of proactive decisions have actually been rendered in the last three years, but I think we do need legislative reform on some level, and we do need institutional reform of the Patent and Trademark Office to keep up with the process so that

we're not just rubber stamping applications that come through, and then creating the need for things like RPX which generally takes a lot of troubling assets off the table that are what I'll consider to be one thin claim assets.

MR. MALACKOWSKI: I don't know if we should keep going.

MR. HOFFMAN: This is the most interesting part of the conversation.

MS. MICHEL: Please do.

MR. MALACKOWSKI: So I would have a couple of responses to that. One is my view is the Patent Office is a rapidly growing organization. Look at the number of applications that have been filed over the last five to ten years, and it is also, I don't want to say burden -- it is a government organization, right, so it has growth restrictions that are different than if it were IBM. It too just needs to evolve and grow.

There was a study that we published in *LES Nouvelles*, which is the LES trade publication on patent quality over time, and our conclusion was if you measure patent quality by the content of the prior art citations and a number of other variables that all lead to whether these patents are likely to be maintained our abandoned, patent quality has not diminished. In fact, it's

slightly trended up.

My final point on the prior art comment is imagine how it used to be where patent agents had to go look through a library or a box of files to find art. Today Google alone will give you a global access to possibilities that never existed, and you mentioned PatentFreedom, and there are other organizations that are now out there attempting to assist the market in identifying and discovering those issues so that better patents are issued.

MS. MICHEL: Steve?

MR. HOFFMAN: I'm kind of the new kid on the block compared to this panel, and it's actually very interesting. I'm learning a lot today, but one of the things that amazes me about this industry, and I think this conversation reinforces it, there is an amazing amount of emotionalism in this industry and in this conference, particularly when it relates to NPEs or trolls or whatever you want to call them these days, and so Paul, I think rightfully, talks about the service he's providing to small inventors.

To me, I'm missing the point. I guess I'm going to make myself unpopular with the entire panel. I'm missing the point, which is to me if you own an asset, it comes with rights, and in the case of patents it

might be negative rights, but it comes with rights, and however you came to own the asset, whether you invented it yourself, whether you purchased it from another company as part of an acquisition, whether you just purchased the patent outright, you have rights to -- you have the right to benefit from what comes along with that patent.

And that seems to be lost in a lot of conversations where trolls are evils. Trolls are not evil. Trolls are doing good for society. Trolls are doing bad for society. I think that getting to closure on this and making any progress in terms of the patent system is going to be extraordinarily difficult as long as a lot of the conversations are driven by emotional perspectives rather than I think economic or legal perspectives. I observe -- of all of industries I've ever been in my career, this is by far the most emotionally driven industry that I've ever seen.

MS. MICHEL: I think that's true, although I want to command or panel for actually I think having a very intellectual and economically based conversation today, in spite of some of the dialogue that occurs out there in the world. Marcus?

MR. DELGADO: To your point about emotionalism, I agree. I think that the reason patent cases -- patent

cases in general can get very emotional, and I think the reason is that accusation of patent infringement is one of theft, and it is not like another commercial type of transaction or accusation, yeah, you breached this contract. Oh, we have ways to deal with that.

With patent infringement, you're basically saying, you stole my idea, and therefore your people -- they didn't innovate anything, and so that's one of the reasons why I think it tends to get kind of emotional, and I agree. I think we're keeping it kind of above the fray, so that's good.

I also agree that there really shouldn't be a distinction between NPE/troll versus someone else who obtains the assets. My concern is that in litigation I don't think that the differences in the organizations are really recognized and that the burdens placed on the different companies are recognized, and so that's my other concern.

And then, Jim, to your point about the market adapting, I think that the market will ultimately adapt, but right now I don't know what the incentive is for the market to adapt. I mean, if I go and acquire patents and I know that it costs you X amount of money to litigate it and that the discovery burden will be X and I acquired it for A, there is my business model.

That's my -- that's what the market is.

There's no incentive for me to go do any further due diligence and if I know, for example, that in a particular venue, 75 percent of the time juries will award -- will have a damages award greater than X amount, that's all I need to know, and so the market doesn't need to be more sophisticated, and as a result you have all of these cases that have arisen, but I do think that it will become more sophisticated over time, and I hope it does progress.

MS. MICHEL: Are there changes to the legal system or to any particular legislative changes that might help lower the cost of patent litigation? That seems to be something of a systemic error in a well functioning market. Tracey, any thoughts on that?

MR. THOMAS: Yeah, I'll address that kind of indirectly. One is with respect to litigation from our perspective, once you're in the court system, you've lost, if you're in the IP revenue monetizing business because litigation is not efficient. It may be necessary and it may be there to stay, but it's certainly not efficient.

One thing I would like to say though is to the degree you are able to be in a more proactive licensing mode, and I don't mean suing people, we've never

actually sued anyone at American Express, and we certainly don't have the NPE problems that a Microsoft or an IBM have, but at the end of the day to the degree that we find ourselves more in a proactive licensing mode, you find a number of things happening. One is your own patent filings become more focused because you know what's valuable to you and what's not.

You find that your diligence becomes better in terms of third-party clearances and other issues because you know what's important to you and what's really more valuable to you, and to some degree we believe, and I think some other companies do too, that to the degree you're able to extract value from your intellectual property, you become smarter about how to diligence some of these third-party issues and how to address them by being proactive in your own filings.

I didn't answer your question. I almost feel that no level of jiggling the patent laws is going to solve the litigation issues. The better stance for me is to stay out of the litigation, if you can. Easier said than done, I understand.

MS. MICHEL: All right. Paul, and also I would be interested if any panelists have reactions to whether a loser pays litigation system would -- what kind of effect that would have. Paul?

MR. RYAN: Certainly from the perspective of small companies and individual inventors, the litigation issue is hard to believe for maybe some large companies, it's a bigger issue for them. They want to invent and innovate. They don't want to be in court with huge companies with multi-million dollars bills. That's the last place they want to be, and I think the attitudes -- really a lot of it is an attitude.

If there's a willingness to sit down and negotiate, deals can get done, and I think when people start talking about, quote, dangerous patents, what does that mean, or companies like Google start saying, we don't care whose patents we infringe, we're going take you take to the Supreme Court. It's not a good attitude.

In terms of licensing and respecting other people's intellectual property, I doubt they would want people to do that with their underlying intellectual property. I think certainly anyway we can improve the judicial system, the expediency, specialized courts that can move more quickly, I think the biggest issue is time.

Many young innovative companies now have watched their brethren be dragged through the courts for five or ten years and gone bankrupt. Our testimonial sitting

outside will attest to that, and large companies can play hardball. They do have lots of money and they can outlast small companies, so I think anything that would make the judicial system more efficient would be encouraged and would be beneficial to the small entities.

MS. MICHEL: Keith?

MR. BERGELT: I just had a small response to Paul.

I think there's a fundamental assumption in what you're saying, that these patents are valid and have substantive claims, and I think the system allows for one thin claim to support litigation, and to make the litigation go away, which is the normal, ultimate response to avoid going forward with litigation or to eliminate litigation rearing its head, the bar has been lowered so that reform is needed to allow for requisite substance to support these litigants.

So that the actions are not -- so one IP aggregator that acts like a troll doesn't have 30 or 40 lawsuits going concurrently and is in the business of litigation avoidance payments. We need to get to the point where we're actually look at substantive lawsuits based on real value that's being conveyed.

We talk about this enabling model. We have to have something that we're enabling, not one thin claim to meet sufficiency standards that are so low right now that there is no bar for litigation to occur.

MS. MICHEL: Jim?

MR. MALACKOWSKI: So I have a thought exercise for discussion purposes only. This is not necessarily my point of view. We have talked about the fact that the litigated awards have totaled maybe not that significant but it's the frictional cost of the litigation itself. I would propose as an exercise, that's okay, let litigation be expensive, because I don't know that you want to encourage or that we would be all happy if an inventor knocked on your door and you can snap your fingers and you would be in front of a jury tomorrow.

I think let the market become a more efficient way to transact intellectual property rights and leave litigation to be a painful last solution for everyone.

MR. DELGADO: Yeah, I think that may work, but I think that the problem is there is a disparity between the costs on both sides, particularly when you have contingent fee attorneys on one side of the equation, so there's essentially zero cost for someone to bring a case and millions of dollars for the other company, but

I do generally think that may work.

To the question about what types of reforms would be helpful, I would say I think there are many but I would bring up a couple. One is one we've already touched upon, which is the valuation issue that the courts can't seem to really resolve. We've had a special appellate court just for patents and they have not been able to resolve this issue. Chief Judge Michel mentioned this recently and said that we need to figure out a way to value these things or we're going to have a problem.

The other issue that we face involves use-based damages and the fact that we receive a lot of products from vendors and vendors sell us products and we use those products out in providing services to subscribers. They also provide indemnity obligations to us, so when we get sued, the vendor now is in the position of defending us. But, they're defending us on a use based model that involves how much the product is used versus the model that they expected when they sold us the product, which is, “Well, we sold it to you, it cost this much we know how much that cost.”

And so I think it would be nice if we could get some resolution about what's the proper model here, and I think the ultimate cost to the vendor is pretty high

and may actually result in less innovation. They may not want -- it's too expensive for them to produce this piece of equipment if they're dealing with a use based model ultimately, so I just think that's an issue that would be nice if we could resolve.

MS. MICHEL: So that's an issue of patent damages and how to identify what you're going to apply for instance a reasonable royalty damage to as a base.

MR. DELGADO: Right, right.

MS. MICHEL: Okay. Laura?

MS. QUATELA: I guess for the record I want to agree with Jim's view, that lowering the barriers to litigation is probably not the direction that we need to go in. Giving only one example of the distractions we've been describing here today, imagine how much worse it gets if everybody can be in litigation all the time, and innovation falls by the wayside at that point.

MS. MICHEL: All right. So you lower the cost to one side, you have lowered the cost to both sides, so it cuts both ways?

MS. QUATELA: Right.

MS. MICHEL: Any reactions to a proposal to have a loser pay system in patent litigation, loser pays both sides attorneys' fees? Anybody support or deny that or reject that idea? It looks like we don't have too many

thoughts on that.

MR. DELGADO: Yeah, I don't think you'll get a lot of support for that. I think it sounds -- it sounds good in that people will only -- people with really meritorious claims will bring these actions, but I think it will -- it probably would limit a lot of small inventors from ever bothering to innovate in the first place, and I don't think it will get a lot of traction.

MS. MICHEL: The idea of transparency, someone mentioned earlier that it's sometimes difficult to tell what, for example, Intellectual Ventures owns although the question is not meant to be directed at any one company. Is there a problem with transparency in the sense of who owns what as a first level? Steve?

MR. HOFFMAN: Yeah, I think it's straightforward. The definition it makes the markets a lot less efficient than they would otherwise be, and I don't blame IV for not wanting the world to know what they own, but the more information there is about who owns what, what transactions occur and what pricing occurs in transactions, a lot of problems we're talking about today become a lot more manageable.

I don't think that there's a solution to that, however, because I don't think it is appropriate or possible to force a company like IV to share the 20,000

plus assets that they have. It's not in their interest to do so, and I can't imagine why they would agree to do so , but there's clearly some inefficiencies in the market because of that, and that's not good.

MS. MICHEL: Jim?

MR. MALACKOWSKI: The other transparency that we've thought a lot about relates to the marketing issue, and for those of you who have seen the Patent Reform Bill that's come out of committee, it has a provision allowing internet based marketing and because today it's really not practical to put patent numbers on products or brochures when those products contain hundreds or perhaps even thousands of patents.

And from our perspective, getting that information to the market so that the market can understand, one, which patents are being frequently used, either by large sales volume of their owner or by a broad licensing model, and two, just how many patents it sometimes takes to put a product to the market, such as a PDA, for example, and so that triers of fact will get an appreciation that, yes, this may be a good invention, but it's one of a thousand that are needed to manufacture this product, so I think that transparency will help a great deal.

MS. MICHEL: Any reaction to a proposal that

would require a registration with the Patent Office just even who owns the patent, the true party in interest rather than the shell company having some kind of registry of that information, and then beyond that, any reactions as another level there have been proposals to actually record even the terms of the transaction? Why or why not would that be a good idea, bad idea, even possible?

MR. MALACKOWSKI: I'll start with a comment in that I don't know that having identity shielded, whether it be by an aggregator or in fact the manufacturing concern is really that big of an issue or a problem. It's a curiosity, but there are legitimate business reasons for an operating company to not necessarily assign its patents to its brand names.

They're developing technologies in areas that they won't want their competitors to realize. Perhaps the inventor name will give that away anyways, but if they want to try to protect that as strategy, they should have the right to do so.

MR. HOFFMAN: To the second half of your question, I should think it would hurt the market. I think it would make the market a lot less transparent, certainly a lot less efficient if companies had to reveal what they were buying and selling and what the

terms were.

I think a lot of the transactions that occur not in the auction but -- in private action are between buyers and sellers that do not want the public to be aware or the competitor to be aware of what they are actually doing, and I think you would actually slow down the market. You would make it a lot less efficient. You would make the reallocation of capital, which is what this is all about, happen a lot more efficiently if you force companies to go public. I think there would be far fewer transaction under that circumstances.

MS. MICHEL: Can you spin that out why they don't want others to know?

MR. HOFFMAN: I think the basic reason is that when you sell patents, you're actually making a comment about the strategy of the company, that you're no longer interested in this business or that it's become less valuable. When you buy patents, you're making comments about what you plan on doing in the future, and I think that kind of strategic information is something that companies are loath to have public and will not share, and, I think, if they're forced to make that information public, they will transact less frequently, and I think that will damage the efficiency of the market.

MS. MICHEL: Okay.

MR. HOFFMAN: It's just about keeping strategic secrets.

MS. MICHEL: Keith?

MR. BERGELT: Public companies, I think the area where protection is needed and where there are already build in materiality clauses in terms of requirements from the SEC, anything that's material has to be reported, so if there's a settlement, if there's a windfall, the revenue source or the outflow source has to be provided so that public company investors are protected which is really the public policy argument to be served, and I think that has the -- that's the overarching argument for me.

MS. MICHEL: Marcus?

MR. DELGADO: I would say in litigation, there could be more transparency, and this should probably be clarified, with respect to what an NPE paid for a particular asset and what settlements were reached, and I think there are a couple of policy issues here.

One is if that's known, the court can use it to determine whether or not this is a fair demand that's being asked by the NPE, and then the second is that many companies -- their business is litigation. They've gone into the business of essentially litigating, and so why isn't it fair to ask: Well what other settlements

have you reached in litigation?

MS. MICHEL: Can you get that through discovery?

MR. DELGADO: Usually not. Usually you can't get it through discovery. Courts will tell you that that's not -- that evidence isn't relevant here or won't allow it.

MR. MALACKOWSKI: Or in many cases you can get it through discovery, but your experts aren't allowed to rely upon it anyway.

MR. DELGADO: Right. Can’t rely on it. Correct.

MR. BERGELT: The facts are different enough that it gets back to the whole issue of valuation: Are you comparing apples to appeals because very often it's not just the same thing that you're looking for, especially if you're a large company. You may be looking for some in kind value. You may be looking for market access. You may be looking for other technology to come in.

You may be looking for some other agreement, and you're utilizing your patent portfolio for different purposes with different targets.

MR. HOFFMAN: Can I ask why what they pay for the asset is relevant as opposed to what the value of the asset is and what the value is to the party using the invention? Why does how much the NPE paid for the asset matter in the interest in the court's decision in

your opinion?

MR. DELGADO: Because it should be evidence of perhaps what I should pay. It's evidence of what someone paid for it in the marketplace, which is I assume somewhat relevant to valuation, and so therefore if you're making a demand upon me, I should probably know that and have that information just from a valuation standpoint.

I mean, presumably two people -- an arms length transaction in the marketplace, someone purchased it, that would seem to me to be relevant.

MS. MICHEL: Laura?

MS. QUATELA: I think Keith mentioned it earlier but I think this is one of the reasons that initiatives like PatentFreedom are getting traction where private initiatives are attempting to discern this information where it can't readily be found through discovery. That's one point.

Point two is -- what is point two? The transparency issue. I think that we have embraced as a society the need for confidentiality in M&A transactions, and increasingly in my experience, whereas IP used to be on the fourth or fifth page of the due diligence as a concern in M&A, it's now the driver of a transaction, and so to increase transparency around

what companies are doing in the IP space means you no longer enjoy the confidentiality of your strategies or tactics and your competitive plans, so I really am fearful of any regulatory push to increase transparency in that regard.

MS. MICHEL: Tracey?

MR. THOMAS: Yeah, I don't think transparency around specific buyers and sellers and their terms is as critical as the need to have better ways to aggregate the information. I'm a big believer that the more aggregate information we have will allow us to make better decisions, to better benchmarking as we go through the monetization process around intellectual property.

So I don't think the specific transparency around specific deals is that critical, but we do need better mechanisms for aggregating information about deals and transactions.

MS. MICHEL: What kind of information do you want to aggregate and do you have any suggestions of any mechanisms?

MR. THOMAS: That's a great question. I look at it from two perspectives primarily. One is even having information so that you can make internal decisions, how do companies make specific decisions about how they were

going to transact around intellectual property, and that's not what we're talking about here, but that type of information is very critical.

One of the biggest barriers to leveraging intellectual property in many companies is just how do you sell it internally to your business, your finance, your legal people. One of the biggest things we come up against all the time is brand issues, and then at the macro level, clearly having aggregate information just about what patents are worth, thanks to auctions like Jim's in general, just having that type of data allows you to make better decisions.

So I look at it at a micro level or internally in the company. We need better information about those processes and what's happening internally, and then also with respect to issues like valuation it's going to be critical.

MR. MALACKOWSKI: So it's interesting. If you go to our web site and you search, you can find a sale price of every patent ever sold at auction. As I speak around the country, I've always made this open offer to others in the room, corporates or NPEs or the like, send us the data of what you sold or bought for, and we'll publish it. I've not gotten a single submission.

MS. MICHEL: Marcus, do you have a comment?

MR. DELGADO: No, I'm sorry.

MS. MICHEL: Any other ideas on what information would be useful to have and what mechanisms to get it? Should it be a government regulatory mechanism or are you suggesting something else like the market bring the information forth? Tracey?

MR. THOMAS: I'm going to be biased here. I talked in the beginning about an IP zone that we were working to create. When we recognized that there wasn't an efficient marketplace to get the type of information that we need, so a big part of this zone will hopefully be the collection of information.

Now, companies will have to be willing to do that so they're going to have to see value on the other end, and that is in the exploitation of the intellectual property. At the end of the day, I don't know if government regulation is the right way to do it. I think you're going to have to find willing participants who have an economic incentive to do it.

That is, we'll get smarter about doing transactions if we participate in this, and there's a trusted source where we know our significant information won't be revealed to the public.

MS. MICHEL: Laura?

MS. QUATELA: Well, I think that the market is

doing a good job of bringing these tools to bear. I think Jim has been a visionary leader in that regard. As I said he's got PatentFreedom. The new Stanford database is a wonderful collection of very very useful information, the types of initiatives that Tracey mentioned. I think all of that is happening is actually quite exciting, so I personally don't see the need for government regulation so much as just continue creativity in the marketplace.

MR. HOFFMAN: Just to temper that with some real data, so PatentFreedom is a great company. PatentFreedom has two basic objectives. One is to share data with operating companies about who these NPEs are and their shell organizations and who owns what, and I think it's very valuable in that respect.

The other objective of PatentFreedom though was to create essentially an online community where operating companies who were threatened by the NPEs could share data with one another, and so they could at least understand whether they were alone or whether there were other people dealing with the same issues and learn from one another.

Most of the members of PatentFreedom have taken advantage of the first part, the data about who these NPEs are. Almost none of them have actually shared

information, even on a confidential basis, about what their own experiences were, and so I think that the kind of data that Tracey and Laura are looking for I think it's incredibly important.

I just don't see operating companies on their own sharing that kind of information. This is too proprietary, and PatentFreedom I think is just one data point where it's an easy confidential mechanism for sharing this kind of information, and nobody is taking advantage of it, at least in the current history of PatentFreedom, or most of the members.

MR. BERGELT: It's facilitated informal dialogue between members, and even though you don't post information, because we're a member, we still will reach out to other members and coordinate.

MS. QUATELA: And it's launched even more initiatives. There are a lot of underground conversations going on among groups of companies to start this data sharing. Maybe it's not ready for prime time yet or the light of day yet, but that is happening.

MR. THOMAS: I think if there are economic incentives behind it, right, so by the end of the day by sharing this information, we'll be better able to exploit our intellectual property. I think that's the process that it's going to have to take. And then you

can genericize the information.

That's when I speak of the information in the aggregate to figure -- cumulative information can be very powerful in discerning trends and opportunities, and so I wouldn't discount that. You don't actually have to know that American Express sold patent A for X dollars. In fact that's not going to be that valuable because that patent is inherently unique, so it's not really going to tell you that much about the other millions of patents that are out there, but the cumulative trending I think would be very valuable.

MS. MICHEL: Laura?

MS. QUATELA: Well, Tracey touched on it but along with this sort of private data sharing comes a private market, so there is I think a remarkably increased sharing among companies with like interests in the patent space of their own IP for whatever reason. You become familiar with what one of your colleagues in the PatentFreedom or somewhere else is interested in, and you call them up first when you have something to sell.

MS. MICHEL: Okay. Tracey mentioned cumulative genericized data in the aggregate. Is there any role for government to just collect and aggregate information? Laura, I used scared you by using the word regulate. I

didn't mean to. Tracey?

MR. THOMAS: There's always a role for government, but I think what you'll find is from the efficiency standpoint, I just happen to believe that private entities with an economic incentive will probably do a better job of it just because they have more resources, not because the government can't do it, but that's my personal feeling.

MS. MICHEL: Laura.

MS. QUATELA: And academia.

MS. MICHEL: Okay.

MS. QUATELA: Certainly is playing an increased role, as for example the Stanford tool.

MS. MICHEL: That gives us a good segue until the afternoon. We have an academic panel this afternoon.

We've been talking about this patent market which I think you could have listened to this conversation as if individual patents were being bought and sold.

How often is that the case versus huge entire portfolios being bought and sold in one fell swoop, and how does that effect the operation of these markets and why is it? Is it happening? Why is it happening? What's the value of a portfolio versus the value of an

individual patent that drives companies to accumulate portfolios?

I'm throwing out a lot of questions at once only to try to understand better the role of portfolios in this market. Jim?

MR. MALACKOWSKI: I would think you've described both ends of the spectrum. On the one hand, you have the individual asset. On the other hand you have the entire collection but what the market is doing with most of the time are what we call families.

So a particular inventive technology that may have a number of U.S. international patents and applications that all go together collectively and are transferred as a group, and the reason you need that is clearly if you bought one member of that family but didn't own rights to the rest, you have a very limited right.

To date I don't think that the market is yet efficient enough to extract full value or anything close to full value if you start to sell entire portfolios of tens of thousand of patents.

MR. BERGELT: You also want applications in your family because that gives you extendibility, so when you buy a naked asset, if it's -- basically there is no ability to extend and leverage it. It's far less

valuable and it doesn't offer the protection against picket fence strategies and other kinds of nefarious approaches to attacking your patent, which may be underway at the time you purchase it, and you may be unaware of that.

So I think it's important that up until now where we've had family strategies that are rather traditional, it's very important to try to buy families, and there's more value to smart buyers of families typically, but in the future what we can expect to see are fewer patents and more hybridized family development where you have a core patent and then contemporaneous with that you have a series of defensive publications wrapped around core patents that give you the same protection levels at a far lower cost.

And in that case the core patent will, five years from now, ten years from now, sit on its own if it's not supporting products or services in the market that that company has, and they look to jettison it. You'll have the same protections, but you'll still be buying only one asset, so it's an interesting shift that we're in the middle of now, but many of the leading companies and industry, particularly in tech, are shifting away from pure play family development, and they're shifting towards these hybridized approaches

which are more cost effective utilizing defensive publications.

MS. MICHEL: Steve?

MR. HOFFMAN: I agree with both Jim's and Keith's comments, but one other thing, there's just purely a process of trying to get rid of some of your less good patents by bundling them with one or two really good patents. There's nothing wrong with it. There's nothing cynical about that, but that's the way companies can sell bad patents right now. You cannot sell anything other than really good patents, so the only way to get rid of your less good patents, without being pejorative, is to bundle them with a couple of very good patents.

MS. MICHEL: Is the value of that group the value of the one good patent or are you throwing in the bad patents?

MR. HOFFMAN; I wouldn't say 100 percent, but I would say maybe 80 to 90 percent is the value of the good patents in the group. Obviously every sale is unique but it's driven by the value of the really good patents in the group.

MR. BERGELT: They can all be good, but I think a better term is fundamental, where the fundamental invention is where, to Steve's point, that's where the

value is, and then you get the block and tackling of the family development, but universities -- you can talk to somebody else, but universities are also an important area and government can do a lot there because Bayh-Dole is an obstacle to universities wanting to dump significant numbers of patents.

But because of overarching concerns around running afoul of future funding from government, they don't have a vehicle to sell so they have to utilize awkward, cumbersome mechanisms such as exclusive license with a right to sub-license largely with trolls, and so Bayh-Dole is essentially a problem to the extent that a lot of universities thought that they could replicate what Stanford did in the '90s, complete failure.

There are dozen of universities who are holding on to assets that they would love to jettison but they don't want to abandon them because that's basically the equivalent of an indication of complete failure. They would like to get returns, but they're stuck in between because Bayh-Dole restricts you from selling only to patent management organizations, and there's no definitional work in terms of what a patent management organization is.

So that's a Washington issue that would help universities and help the secondary market because there

are literally tens of thousands of patents trapped inside American universities.

MS. MICHEL: All right. Steve, when you said fundamental patents, were you thinking those patents that can't be designed around, those patents of invalidity?

MR. HOFFMAN: Keith said fundamental. I did not. I agree fundamental is one of the ways that you can take some valuable patents and package some less valuable ones around them. When I said good patents, I'm thinking about the non operating company buyers, and what they're going to look at in terms of buying a patent is a patent that is defensible in litigation that will withstand reexamination, if that's the tactic the defensive party takes.

So I'm looking at -- when we're talking about selling a patent to a non-operating entity, their valuation of quality is in terms of litigation quality and defensibility, not whether it's, quote, fundamental. I'm not trying to justify their behavior, understand me, but that's the way they look at a patent in terms of is it a good patent, is it a valuable patent.

MR. BERGELT: Good enough.

MS. MICHEL: Is that a validity issue or a design around issue or both?

MR. HOFFMAN: It's all of the above plus it's the size of the market that potentially applies to the patent. It's how well constructed the claims are, will they survive litigation, will they survive reexamination? So there's a set of criteria in terms of the value patent, but it has to do with essentially how effective will they be in an assertion strategy? How likely am I to generate either damages or royalties if I assert these patents and how big is the market?

MS. MICHEL: Okay. Jim?

MR. MALACKOWSKI: So I would like to come back to a comment that Steve's now made twice about the notion that it's valid patents or higher quality parents that are of interest, and if they're not high quality, they're not saleable, and I think he's right.

Whenever you have an emerging market, there's always some what of a pendulum effect, so when the patent marketplace developed over the last five years, we saw a surge in applications first at the PTO, and maybe a lot of that was driven by the dot.com invention boom.

Then we saw a surge in acquisition and I think it was mentioned where any patent in this category, there was somebody who was out there who had a real interest in considering to buy it, and that's changed.

Today, it has to be a patent of very high quality, and coincidentally last night we were having a conversation at dinner about how the prosecution efforts at the PTO have now trended down because owners, both for I think that reason, as well as, the economy generally, they don't want to pay for and prosecute patents that don't have value.

So that flight to quality that we're seeing across the market is again a natural evolution or a maturation of what's happening.

MS. MICHEL: Okay. Laura?

MS. QUATELA: I think there's a geographic aspect to this at all because there's no doubt that in certain geographies, quality is more important and in others quantity is more important. And, as the pendulum has swung I think more in the United States, Jim, I haven't seen it swing too much in Asia where quantity is still really a supremely important factor in terms of the size of the portfolio being marketed.

MS. MICHEL: Marcus?

MR. DELGADO: So there are a couple of reasons that sort of lend themselves to licensing portfolios rather than a single patent for us. One is that currently the courts allow you to sue on one patent, lose and then bring another lawsuit on a related patent,

whether it's substantiated or not.

There are no remedies for us to force you to bring all of the related patents together in a single lawsuit, so if we're going to license we probably should license the entire portfolio.

The second is what I call the schmuck factor, which is if I license something from you and we're all happy that we did this license and you sue me the next day, I look like a schmuck, so it's like I'm not going to do that. I can't go to management the next day and explain to them, You know the company we just paid X million dollars should we're now in litigation with them.

So that also sort of pushes me sort of towards more of a portfolio type of license rather than a single patent license.

MS. MICHEL: Okay. How important is this quantity versus quality issue? How important is the quantity, the size of the portfolio in asserting that portfolio against a competitor or a potential licensee? Jim talked in the beginning about the big stack of patents? Is it really possible to plow through them all and do a good assessment and decide which ones you need? How does all that play out? Steve?

MR. HOFFMAN: Just one quick comment which is I

think if you look at Intellectual Ventures, that is their strategy. It is a quantity strategy. Now, there's some signs that says they're slowing down their acquisition and they're only buying high quality things that fill in their existing portfolios, but they have definitely adopted a volume strategy with the expectation if they come to a company and say, I've got 300 of them, how much do you want to bet that at least one of them is really good that they're going to get licensing revenue.

And so they clearly are betting -- and time will tell whether they were right, but they're clearing betting on a volume strategy, and they're the biggest player in the market.

MS. MICHEL: What's the ability of the potential infringer, a manufacturing company when facing a threat? And perhaps it's IBM, not Intellectual Ventures but here's my big portfolio, is there any option but to pay? How reasonable is it to plow through the 500 patents in the portfolio, the 300 that you mentioned and see whether they're all necessary? How are companies dealing with this problem?

MR. DELGADO: It's a very expensive endeavor. I don't know how else to put it, but it's an expensive endeavor and it's probably not an incredibly practical

one, and so you have got to weigh those costs versus the cost of licensing and the cost of litigation. I've faced that situation where we've had to look at a pretty significant portfolio and it just wasn't -- in that particular instance it just wasn't practical for us to do it so we had to look at other options.

MS. MICHEL: What other options?

MR. THOMAS: Well, let's look at the licensing cost, let's look at the litigation costs. I don't know what else you really can do.

MS. MICHEL: Laura?

MS. QUATELA: I think it depends too on whether you're dealing with an NPE or if you're dealing with another operating company. If you're dealing with another operating company and they come to you with an expansive portfolio, you're going to look at yours and see how big yours is. That's really the conversation.

With an NPE if you're hit with a variety of patent families, the analysis expense is very high, and so as we hear, it's sometimes necessary to settle because you can't commit the resources to it.

MS. MICHEL: We've had a couple mentions of case law throughout this conversation and the recent changes in the courts. Jim mentioned *eBay*. I think the *MedImmune* issue came up but wasn't discussed. Let's

start with that one.

How has *MedImmune* changed the dynamic in this market, I mean, *MedImmune* and also the *STM Electronics* decision in which it's much easier to bring a declaratory judgment action in licensing negotiations? Has anyone had direct or indirect experience? Laura?

MS. QUATELA: For us it's stymied discussion. You're absolutely afraid to have a discussion now, which is a bad thing I think. I always prefer to have a discussion rather than go to court, but if you're fearful of having the discussion, it's just --

MS. MICHEL: So as the patentee you're fearful of having a discussion because the potential licensee can then bring the DJ action?

MS. QUATELA: Either way, patentor or patentee. There are considerations on both sides, but it really makes what used to be a much more free flowing conversational type of practice much more litigation based.

MS. MICHEL: What is the concern from the potential licensee's point of view?

MS. QUATELA: From the potential licensee's point of view? I guess I defer to Paul on that question. I think that the consideration is around how you style your approach and how expensive that's going

to be.

MR. RYAN: The biggest impact to us it's driven more small companies, universities and research centers to us out of fear. If they went out the way they used to with a normal proactive licensing program, then companies could file against them in multiple districts and basically be a very expensive proposition, so I think it's had that effect on our direct approach.

We used to always go out and voluntarily enter into discussions with companies before filing litigation, and now we advise our partners who come in, given the risk level, that we not do that so it does chill the conversation. It's usually not a great way to start a conversation by filing a lawsuit, but that's what we've had to transform to, so we try to engage companies as quickly as we can saying, sorry, but we had to protect our own interest, but we would very much if, you would like to, entertain reasonable licensing discussions.

So we tried to break that barrier down as quickly as we can but it's normal reaction to anybody, and I think it gets back to the emotional issues that Marcus said. If you've been sued it doesn't tend to -- you take it emotionally, and sometimes I think people feel that they're being accused of theft. It may not be

theft. It may just be that you're using somebody else's property, not that you knew you were using it or took it deliberately, but there's somebody else who holds patent rights.

But there's no question that that decision has really chilled early stage licensing discussions and made the market less efficient. It actually runs up the cost because if you're afraid as a small company to even have the conversation, then you have to engage legal counsel, and now your transaction costs to both parties have gone up.

MS. MICHEL: Any way out of that?

MR. RYAN: Reverse the decision.

MS. MICHEL: Does anyone have a suggestion? Okay. *eBay* and the injunction issue, has that changed the dynamic and the discussions or the amounts paid? Paul?

MR. RYAN: The biggest effect it's had I think is on innovation companies. It really unduly penalizes pure innovation companies for no particular reason. If you're in the business of purely innovating and know that you don't want to market and distribute, then why are you penalized for being that innovative company? And obviously that leads to compulsory licensing and leads to less invention.

I think it was -- I don't know how much injunctions there really were in the United States? Was this really a big problem, Jim?

MR. MALACKOWSKI: I don't believe --

MR. RYAN: I think it was more of a statement about a scorched earth policy than it was to address a major problem. I'm not aware of a whole lot of injunctions that occurred the last 15 years in the United States.

MR. MALACKOWSKI: I don't know if you saw a whole lot of injunctions, but clearly the threat of the injunction led to the implicit settlement immediately after the verdict in virtually every case because it was not just about the verdict. It was what's going to happen tomorrow.

MS. QUATELA: It's certainly driven a lot of litigation towards the ITC, and that trend is clear.

MS. MICHEL: Do you see that trend increasing?

MS. QUATELA: Uh-huh. [Yes.]

MR. DELGADO: I don't know if this is true or not but I read somewhere that actually the number of injunctions hasn't gone down significantly. The number of injunctions that have actually been granted hasn't decreased significantly. I don't know if that's just a report I read somewhere, and I can't substantiate that.

MR. MALACKOWSKI: I think that's because of what we were just discussing, that there wasn't a high number of injunctions entered *per se* in the past because the cases were settled in the interim of the jury verdict and when that would have been entered, but now you're starting to see in a number of cases where the judge is focusing the financial experts on the reasonable royalty for the period of infringement. Now we need a second analysis and, in some cases, a distinct and different analysis of what the compulsory licensing rate should be going forward.

There are a number of cases that are now explicitly going into that issue.

MS. MICHEL: Any sense of whether *eBay* has lowered settlement amounts or lowered licensing amounts when a non-practicing entity is involved as the patent owner? Is it too early to tell or do you expect it to have no effect? Jim?

MR. MALACKOWSKI: What I've heard in the market, and I would echo what was said about the pure innovative company, it does put them in a difficult situation, but as far as the NPE, I've heard mixed results. NPEs saying in part, this is okay because now the court is going to help me facilitate a fair license post-trial, where

before I just got into another argument over that amount.

So, I don't know that it's made a huge difference or the consequence was as intended.

MS. MICHEL: All right. We're getting near the end, so I'll just throw out any other comments about any of the other recent important court decisions? There's been *Seagate* on willfulness for instance, *Quanta* on exhaustion, *Bilski* on subject matter patentability?

Have they had any real effect on how these markets are operating and how the evaluation is done or are they perhaps more important in a litigation context or is it just not coming up? Is that why we're not getting an answer and things are going on as they have been? Okay. Laura?

MS. QUATELA: Well, Suzanne, when you and I talked, I know that I raised *Quanta* as a conundrum, and what I guess I would say about that is I welcome additional, judicial guidance as quickly as possible because it's made the prospect of licensing and how to conduct a licensing practice rather confusing.

MS. MICHEL: Okay. All right. Tracey?

MR. THOMAS: This is just kind of anecdotal, but I can certainly say that *KSR* and the application of the teaching, suggestion motivation test basically made me

lose confidence in some of my abilities because I remember as a young associate drafting patent applications, many times teaching away or arguing that an invention taught away to overcome an obviousness challenge, and now not really understanding what is the standard.

So in some cases some of these decisions, maybe unintentionally, have created more uncertainty. Same thing with *Bilski* on a couple of fronts. It really didn't answer a lot of the questions that I think it was intended to around the transformation and around the machine implementation. Right now I couldn't tell you what degree of machine implementation is necessary to have a business process claim be declared patentable. I just can't tell you.

So you just throw one in and hope for the best, but that's just anecdotal from our perspective.

MS. MICHEL: Is the concern then with *KSR* or *Bilski* or any of these decisions the current uncertainty or is there a concern with the substance in that we have in some of the prior hearings heard fear about the future, heard I don't know what the situation is, which suggests the uncertainty is a problem rather than the substance? Any reactions?

MR. THOMAS: The uncertainty is a problem

because uncertainty leads to litigation, and that goes right back to the whole purpose of what we're talking about, which is an efficient marketplace which will help to create certainty around issues like valuation so you can avoid the Courts on these issues.

So I think the uncertainty is a big issue.

MS. MICHEL: Okay. Any other reactions or complaints about the substance or just the level of uncertainty?

We're about to wrap up then. If there are any final comments anyone would like to make while we're still on the record, I'll give you a last chance.

If not, I will say thank you very much. This has been very illuminating and helpful to us, and we very much appreciate your time. We will be back at two o'clock where we have some of the academics doing I think some of the cutting edge thinking about these issues. Thanks very much.

(Applause.)

(Whereupon, at 12:24 p.m., a lunch recess was taken.)

AFTERNOON SESSION

(2:02 p.m.)

PANEL 2: RECENT SCHOLARSHIP IN PATENT MARKETS

MODERATORS:
SUZANNE MICHEL, FTC
ERIKA MEYERS, FTC

PANELISTS:
IAIN COCKBURN, Professor of Finance and Economics, Boston University School of Management
STUART GRAHAM, Assistant Professor, College of Management, Georgia Institute of Technology
MARK LEMLEY, William H. Neukom Professor of Law, Stanford Law School
SAMSON VERMONT, Associate Professor, George Mason University School of Law
POLK WAGNER, Professor, University of Pennsylvania School of Law

MS. MEYERS: Welcome back to the afternoon session. For those of you just arriving or just tuning into the web cast, I'm Erika Meyers, an attorney with the FTC.

This afternoon we will explore some of the recent academic work dealing with markets for intellectual property and other issues. Each of the panelists will give a presentation, and we will leave about an hour for follow-up discussion.

We have a seemingly diverse range of topics, but at their root, they all address market failures or potential solutions to those market failures in the emerging markets for intellectual property.

First up will be Stuart Graham. Stu is an Assistant Professor of Strategic Management at the Georgia Institute of Technology and a Kauffman Foundation Fellow at the Beckley Center For Law and Technology, at the University of California Berkeley School of Law.

Professor Graham teaches and conducts research on firm intellectual property strategies, intellectual property transactions and markets for technology, technology entrepreneurship and the legal environment.

Dr. Graham received his Ph.D. at the University of California Berkeley and holds advanced degrees in law, business and geographical information systems.

Next we'll have Mark Lemley. Mark is the William H. Neukom Professor at Law at Stanford Law School the Director of the Stanford Program in Law, Science and

Technology, and the Director of Stanford's L.L.M. Program in Law, Science and Technology.

He teaches intellectual property, computer and internet law, patent law and antitrust. He is also a founding member of the law firm Durie Tangri, where he litigates in the areas of antitrust, intellectual property and computer law.

He received his J.D. from Boalt Hall School of Law at the University of California, Berkeley and his A.B. from Stanford University. After graduating from law school, he clerked for Dorothy Nelson on the United States Court of Appeals for the Ninth Circuit.

Iain Cockburn will then share some empirical work. Iain is a Professor of Finance and Economics, and the Everett Lord distinguished faculty scholar in the School of Management at Boston University. He teaches and performs research in the areas of entrepreneurship, business strategy, intellectual property and economics of innovation and management of high tech companies.

Professor Cockburn graduated from the University of London in 1984 and completed his Ph.D. in economics at Harvard.

Samson Vermont will follow Iain. Sam is an Assistant Professor of Law at George Mason University Law School (which I might add is an excellent law

school) where he teaches patent law and torts.

Before transitioning into academics, he practiced patent law in the Washington D.C. office of Hunton and Williams. He is a registered patent attorney and the founder of the monthly periodically Patent Strategy and Management. Between practice and starting at George Mason, he earned his L.L.M. from the University of Virginia School of Law, and served as the Humphrey Fellow in Law and Economics and the University of Michigan Law School.

Finally, Polk Wagner will close with a discussion of patent portfolios. Polk is a Professor of Law at the University of Pennsylvania Law School. Professor Wagner teaches and focuses his research on intellectual property law and policy with a special interest in patent law. Professor Wagner founded the Fed Circuit Project, an ongoing effort to study the performance of the Federal Circuit. Prior to joining the Penn faculty, Professor Wagner served as the clerk to Judge Raymond C. Clevenger, the III, of the United States Court of Appeals for the Federal Circuit.

He holds a law degree from Stanford and an engineering degree from the University of Michigan and was the 1994-95 Roger M. Jones Fellow at the London

School of Economics, so I will leave it to Stu to take it away.

PROFESSOR GRAHAM: Thank you. I'll try to use this clicker.

When I got the call from Erika to come and speak about this subject, I started to review my current scholarship, and I have always thought of this but it really became clear to me that a lot of my current scholarship actually touches on or is directly related to the question of how patents operate in the markets for technology.

What I'm going to do is just give you a highlight into some of the findings of myself and my co-authors and give you a list of research that I'm going to be highlighting in this presentation, some things I've been writing with co-authors over the last couple years, and this I believe is going to be posted on the web site ultimately?

MS. MEYERS: Yes.

PROFESSOR GRAHAM: Terrific. So those citations will be available.

The first thing I want to remark over is the idea that markets for technology, it's not just IT. often, when we talk about the markets for technology are thinking about electronics information technology.

This is actually a chart out of a piece of work being put together currently in working paper form by some colleagues and myself at Georgia Tech, and what we're looking at is the markets for technology in the pharmaceutical industry.

So a couple things to say about this. First of all, you can see a lot of heterogeneity, so what this chart documents is we looked at the patents that are listed in the Orange Book for successful NDAs coming out of the Food and Drug Administration, and we actually looked at where those patents originated, and this percentage catalogs the percentage of patents that originated with an assignee outside of the firm.

So you can see here there's a lot of heterogeneity here with some firms, Baxter, AstraZeneca, Bristol-Myers, *et cetera*, actually bringing many, if not all, of the patents associated with their most successful product from outside the firm all the way down to Merck that has a relatively smaller share.

So two things. Number 1 is markets for technology are working outside of IT, certainly in the pharmaceutical industry as well, and also highlights for of us that while I know a lot of the discussion this morning was about the buying and selling of patents or patent portfolios, patents are being transacted via

various methods, licensing and certainly in the pharmaceutical context through acquisitions as well.

Okay. Another piece of work I want to highlight, and this is still ongoing. We're getting results out of this now. While I spent last year as a Kauffman Foundation Fellow at UC Beckley I became involved in a comprehensive survey of high technology entrepreneurs. We styled this the *2008 Berkeley Patent Survey*. It was led by the Beckley Center for Law and Technology at UC Beckley, at the law school.

What we did is we surveyed what we defined as entrepreneurial companies. These were essentially young firms, firms no older than ten years old, in specific sectors in biotechnology research, software, IT and Internet related and medical devices.

Our sample included over 15,000 companies. We drew these from samples frames, Dun and Bradstreet. Also we over sampled on venture backed firms so we could take a view into these firms that are really key drivers of value and employment creation in the economy. We surveyed via the mail and web, and we had ultimately over 1,300 unique firm respondents.

What did we learn from this that relates to the markets for technology? Well, some things. We did ask about the source of the revenues coming from these small

firms, and what we found was is that at the mean, firms are reporting less than 5 percent of their revenues are deriving from licensing out.

Now, the wording on this is very important so let me actually tell you what the wording was. What we asked was: How much of your revenue is derived from product sales, including other companies, service -- sales of service to including other companies, and the third item was licensing technologies not including product sales to end customers.

So this is the -- these are the statistics that I'm sharing with you now. There are though important differences, statistically significant differences in sectors, so the biotechnology firms are more likely to answer that revenues are coming from this source, medical devices less likely, and the IT software just about right at that mean.

Other findings: Patents we find are significantly more important. We asked these firms to report on how important patenting was to securing competitive advantage from their technology innovations. We found that patents are significantly more important to those young firms that generate more of their revenues from technology licensing.

So as they report more of their revenues coming

from this, they also were reporting to us that patents are more important than firms that are not reporting them.

Generally young firms are rating --. We also asked them questions about why they're patenting, and they generally rate obtaining licensing revenues as relatively unimportant compared to other reasons, such as preventing copying or enhancing the company's reputation. Of course, these themselves are wrapped up in the markets for technology in some sense. Here too sectors matter. Biotechnology are rating these more important, but also the least important among all the alternatives, but more important than do say IT or software, and as they are rating licensing more important, we also find that they're also more likely to rate patents as important as a means of catching value.

Another piece of work that I'm engaged in with some co-authors, Tim Simcoe and Maryann Feldman, let me actually skip by this to the words first, and then I'll cycle back. We've been looking at the relationship of patents and patent litigation in the standard setting context, so what were we able to show in our research?

Well, the research shows that patents disclosed to standard setting organizations are much more likely to be litigated, okay. This is quality or people are

putting crown jewels into this process, as the case may be.

Among the smaller firms, we split our sample into large firms and small firms. What we found for the smaller firms is that the disclosure event - so when the firm actually discloses its patents to the standard setting body - it appears to be a triggering event for the litigation, so that's what actually this shows.

You can see here years since disclosure with the small firms as the solid line and the large firms as the broken line, significant spikes in the years following disclosure for the small firms.

What we also found is there's no divergence in the quality measures of patents post disclosure for large and small companies, so what this enables us to do is to say that the results point towards a change in some strategy and not some higher demand, increased infringement, for instance.

In sum, what we find is that small firms involved in the SSO process appear to be using their disclosed patents differently. Now is this evidence of troll like behavior? Well, not necessarily. We know from theory and from our investigations of the market that small firms are likely to compete on the upstream technologies, while the larger firms are competing on

downstream implementation in product markets.

So it's not surprising that the smaller firms would have more of an incentive to care about the technology because this is really where they are earning their rents upstream.

Okay. Lastly, I want to talk a little bit about improving the transactional environment. I'm going to talk in the next few slides about work that I've done with a colleague from the University of Munich, Dietmar Harhoff. We started off by thinking about what's going on in this transactional environment out there.

Well, from theory we know that there are welfare gains from the patent system. Yes, we all know that there are dead weight losses associated with monopoly, but the benefits we expect are incentives to invent, to develop, to commercialize and to transact, right? These things also create for us an opportunity to have a transactable piece, and we also think about the knowledge spillovers that come from disclosure.

But at the end of the day, a patent system will tend to experience welfare losses when it has forces operating on it like low quality patents that are lacking requisite novelty, *et cetera*. Also uncertainty, whether that uncertainty be over the final boundaries of

the disclosure or over the validity of the property right itself.

And this uncertainty as I add on this final bullet point we theorize would add transaction costs to commercialization, technology transfer and developing markets for intellectual property.

So what Harhoff and I did, and I'm not going to walk you through these, but what we tried to do was go through a welfare calculation of adopting a post-grant review in the U.S. The way in which we did this, and I'll point you to the working paper if you're interested, we actually looked at a cohort of U.S. patents that had been litigated and then matched those through their documentation, their priority documentation to their equivalent patents in the European system.

And then we took matched samples and we compared and contrasted these, and what it enabled to us do was to come up with probabilities of the likelihood of opposition in a system like the United States, okay, so we ran these through, and here's the tables, okay.

I'm not going to say too much about these other than to say what we did with these is we used -- in millions of dollars -- we tried various amounts for the social cost of litigation, the social cost of a non

litigated revokable patents because we realized in the system like the United States there are a lot of patents out there that are not being revoked because of the system is so expensive, right?

We have a lot of estimates here on the probability of opposition, the probability of appeal, and then we try also some sensitivity analysis associated with different costs for the opposition, the post-grant process itself, right, and then we do some welfare calculations, okay.

If I can get that to actually come up -- well, there I go. It comes up and it goes away, the green circle but let me point you to this, okay. What we find is so long as opposition costs are relatively low, (this [chart] would be in millions of dollars) $100,000 both for opposition and appeal, right, we can experience some significant welfare gains, right, not only from avoided litigation, but the big kicker for us and what we found we found in the European system is because opposition happens so much more, they are getting rid of a lot more patents that pose monopoly costs to the system, okay?

So you get a substantial boost from an opposition system because there's more of it. It's a lower cost, right, and you're able to comb out those patents that are not being litigated in the United

States, but still are imposing welfare costs on society.

At the end of the day, what we found was in our best scenarios a 15 to one ratio of benefits to costs. But a caveat, because when we let the opposition costs rise significantly, here up to a half a million dollars, okay, you can see the benefits really start to erode, so our findings are very, very sensitive to the cost of that system.

So, if there's one thing that comes out of this research, is don't let those costs get out of hand if we are going to have a system like that, and this is actually something that Levin and Levin had pointed to in an early article as well, although without specific calculations behind it.

So in sum, patents in the market for technology are relevant beyond electronics. We still have much to learn, particularly as regards the relationship among patenting these markets and technology entrepreneurship, and I would always point to the substantial inefficiencies in this transactional environment.

I know we're going to talk about this a little bit in the question and answer today, but reducing uncertainty over the boundaries of the validity of patents would tend to dampen some of these

inefficiencies, and post-grant review as a means to increase society's welfare looks promising, again if the costs of the process remain relatively low.

PROFESSOR LEMLEY: Stu's conclusions are a perfect segue into my introduction because I want to talk about inefficiencies in the transacting market environment.

Let me begin by saying that I think a market for technology is a good idea. It's something that we should be in the business of exploring and promoting, but that the markets for technology we have, markets in particular for patent licensing we have right now are not particularly well developed markets. We've made baby steps towards a real market for technology transfer.

Most of the technology transfer that occurs, occurs in one-off secret deals between parties who happen to find each other either through prior business relationship, perhaps by accident or more commonly through litigation, which they end up settling. There is a nascent market, public market for an auction of patented technology, but it really is a nascent market.

And if you look at the most recent Ocean Tomo market results, you'll see a relatively small number of patents being sold for a relatively small amount of

money. Compare that to the vast number of patents out there and even to the substantially larger number of patents that are licensed or sold in some other mechanism.

So the problem is the market is thin, all right. I don't have a bunch of willing buyers, a bunch of willing sellers interacting with each other in a normal market environment. We have people who find each other on an occasional one-off basis or we have a very small thin market for auction of patents, and thin markets are inefficient.

Thin markets don't work well. They don't drive you to the right price. They leave a lot of transactional money on the table in the sense that transactions that should have occurred, that would benefit both the buyer and seller, don't occur. Why is this?

I think there are a number of problems but I want to focus on three problems which I think are interrelated. The first is the lack of transparency. Licensing and patent sale transactions occur with very few exceptions, which we'll talk about in a minute, in secret. Nobody knows when the transactions are going to occur, when they are under consideration. Nobody knows the price at which patents are sold or licensed or the

terms under which those prices or licenses take place.

Second, and I think closely related is the problem of a market for lemons. This is a familiar problem in other areas of technology. If I cannot accurately assess the value of the thing that I am buying up-front when I buy it, then we end up in a world in which it's easy to sell the lousy products. It's hard for customers to distinguish the good for lousy product, so the lousy products end up driving out the good products.

So there's a substantial risk that if it we're putting up products, patents whose value is unknown, we are unlikely to get anything like the full value of that patent in a market sale because people are afraid of being taken.

Third, is the problem of uncertainty, not just uncertainty in the value proposition but uncertainty throughout the entire range of the patent system. It is virtually impossible for anybody to know in most industries most of the time whether a patent that they're looking at is valid or invalid, what that patent covers and therefore whether or not it's likely to be infringed.

So the range of uncertainty is something that I think fundamentally distinguishes intellectual property

markets from markets for other kinds of either land or channels. The level of uncertainty we're talking about here is quite significant, and the combination I think of these effects coupled with the fact that there are so many patents out there has led for other reasons to circumstances in which most companies making products in most industries, not all but most of them, ignore patents.

They just don't pay attention to them unless and until they're forcibly brought to their attention either by the filing of a lawsuit or at least by repeated demand letters, and that too I think leads to the -- it supplements and reinforces the other problems we're talking about. It adds to the thinness of the market.

Well, it would be nice to solve all of these problems. I frankly think some of them are not solvable. I would like to see less uncertainty in the patent world. I would like us to have a better sense of whether patents are valid or not. I would like us to have a better sense of what it is that patents cover and clearer claim instruction, but to some extent I think that's a fool's errand.

We may get increased certainty. We are not going to get certainty in anything like what we mean by certainty in other market environments. There is no

plausible amount of money we could spend at the Patent Office that would weed out all the bad patents and guarantee us that the remaining ones are, in fact, good. I think there may simply be no way, given the legal regime of claim construction, to understand in most industries what it is, exactly, that a patent covers under the existing peripheral claiming system.

So I'm not sure we can solve the uncertainty problems. I think we clearly can and should solve the transparency problem. What's remarkable, if you step back outside the intellectual property environment and look at it in the context of markets, is the fact that all of these transaction occur in secret. That's not a necessary fact.

In fact, in any other market we would think it a bizarre thing, and so we have stock markets that work because I know, not just the price I'm willing to pay for a particular share of Google stock, I know the price that everybody else was willing to pay for a share of Google stock yesterday, and I know the price at people were willing to sell the stock.

We know that because we've taken information, the price of a transaction, and we have required it to be publicly disclosed. We can and should do the same thing with patent licensing. The fact that we don't I

think, conditions a lot of people to think, "Well, of course the license, the transaction, the sale must be a secret transaction." But, there's no reason that should be true.

In fact, the Federal Trade Commission, for other purposes, has embarked on an experiment over the last several years of requiring the disclosure of pharmaceutical settlement agreements through license. That requirement has not in fact deterred people from entering into settlement agreements. It, unfortunately, hasn't even deterred them from entering into anti-competitive settlement agreements, but it certainly has not caused people to forego entering into licenses.

If we broaden that experiment, if we actually start requiring people to disclose the substance of their licensing transactions, the royalty rates they pay, the prices they pay, then we're going to start to information that will help make a market thick, okay. Now I can figure out, this one is a valuable patent, people are willing to pay a lot of money for this. This one is not so valuable. I can start to make class distinctions.

Patents that look like this, patents in this industry, patents produced by this company, patents produced by this law firm look like they have a higher

value than other patents in these other contexts. We can start to develop a thick market. I think transparency in license and sales pricing of patents would have other advantages as well. Most notably, it would help rationalize the patent damage system.

We currently base patent damages, in most cases on an assessment of the reasonable royalty the parties would have entered into had they, in fact, not chosen to spend $5 million litigating all the way to trial. Where do we get that reasonable royalty number? Well, we get it based on license transaction information, but we don't have license transaction information for the overwhelming majority of licenses because those licenses are kept secret.

So we take a small and non representative subset of available data. We look under the lamppost, if you will, and we say, “Okay, that must be all there is out there.” Publishing or requiring transparency of license pricing would have, as a second substantial benefit, the benefit of actually giving courts information as to what a reasonable royalty in a particular industry would likely be.

We could probably solve the patent damages issues that are currently bedeviling Congress and the courts, not by changing the legal rules but by actually

having real accurate information about reasonable royalties in these transactions.

I think that transparency is going to help in other respects as well. I think it will help with the market for lemons. If we start identifying the characteristics of valuable patents, people will be more comfortable paying for those valuable patents. They won't be driven out by the ones that are potentially problematic, and I think that transparency and information helps with other market rationalizations that would be desirable in a thickening market.

We could start to see securitization of patent interests. I know that's a bad word in the current economic environment, but it's nonetheless, I think, a desirable way of not eliminating uncertainty but reducing that uncertainty. I think we can start to see the development of insurance products, what you might call a patent royalty trust in which people can try to solve the royalty stacking and standard setting problems by figuring out a rationale value that ought to be attributed to patent contributors to a technology and ensuring against the risk that courts are going to award a greater set of damages, or so forth.

We don't see those products now. We don't see those products now because nobody has a base line

against which to measure any of this information, and I think an important first step that we could take in improving a patent market is to give us that base line.

Thank you.

PROFESSOR COCKBURN: Good afternoon. Thank you for the opportunity to speak. What I thought I will do is report on some of the findings from a series of surveys that the LES Foundation has sponsored over the years giving us the perspective, if you like, of the view from the trenches. We've heard from some practitioners this morning. This is a little step up from that in an attempt to establish some statistical picture of this or quantitative picture rather than just anecdotal experiences of specific individuals.

These foundation surveys have been done for five years now, and I would like to acknowledge the leadership of Richard Razgaitis and Lou Berneman, the LES Foundation Board and Ken Schoppman, who's sitting at the back there, who's an extremely helpful in these enterprises.

What we did is survey the LES membership, and an important prefatory remark is that LES members are not necessarily representative of all, or, indeed, necessarily many of the people infected by the markets for technology, but they're an important subgroup.

I'll refer you to the various articles being published annually in *LES Nouvelles* over the years summarizing these results, and I see there's a typo here on the slide, the latest article that just came out in the March edition of *LES Nouvelles*.

My take on what we found from these years of asking various questions, some of them repeated, is captured on this slide is that IP disputes are widespread. In any given year about a third of the LES membership would say they would be involved in a dispute, but it's important to recognize that it's not one third of that time or one third of their resources.

In fact, they were consistently reporting 80 to 90 percent of their time is spent on opportunity licensing, business development and transferring and using technology rather than wrangling about property rights.

I think the second big lesson that I, at least, have drawn from this effort is that licensing is much harder than you think especially if by "you," you mean someone who went to graduate school in economics and thinks about these problems in an abstract way.

Professor Lemley just referred to concerns many people have about the efficiency with which this market

operates. I'll offer the following observations: That while about one third of the IP inventory that belongs to the companies that are LES members would never be put on the market. It's regarded as being core technology or strategically important.

Of the two thirds that's left, a great deal seems to be stuck on the shelf. This is retrospective, and the practitioner discussion this morning suggested that there may, in fact, be a rapid evolution of institutions that would encourage moving some of this stuff off the shelf, but the fact is the on these surveys, these folks will consistently report about 50 percent of the stuff that they don't want, they acknowledge will never be transacted in.

A related point is that deals are difficult to do. Even if you can find somebody in this world that Professor Lemley characterized as behind closed doors, even if you can find someone to negotiate with, very frequently these negotiations won't reach an agreement. These are among consenting parties looking for an opportunity to transact rather than an enforcement situation, and usually that's because they simply are very far apart on price, and no amount of negotiating is going to get them to the point at which they can actually voluntarily do a deal.

Reflecting that is something which I found - as somebody who makes a living teaching MBA students how to be spreadsheet jockeys - there is a profoundly depressing finding for me, at least, two-thirds of the time even the executed deals, nobody had a former valuation model. The amount of talking you can do in the classroom about real options and binomial trees and all of the rest of it doesn't translate into business practices, and presumably for very good reasons.

Lastly is the observation that one of the ways these deals are difficult to do is that they're prospective. They're facing a changing environment. If you ask the question, think about the deals you did last year, many of the respondents of this survey would say that they really want to revisit them and revisit them substantively, all that points to is these things being difficult to do.

Let me move quickly through these slides, just highlight a couple of them. I skipped past one I wanted to talk about. Here we go.

This is a question that we put to respondents of this survey which is: Is IP different -- in the sense of how different is it from a similarly large and complex transaction -- something like a commercial real estate leasing deal or a contract for use of specialized

product facilities? What you can see is these IP deals are very difficult to deal with. These reflect the thinness of markets, the numbers of internal business resources that have to be put on this, difficulties in bringing deals to closure and so forth. IP is just tough to deal with, in a practical business sense.

What I did promise FTC staff I would spend a little of time on is these questions about patent trolls. For several years we asked the question of the definition of, quote, troll, unquote. It is roughly coincident with what I think people mean by a non-producing entity, so we put this question suggesting that: Well, look is this threat of litigation by NPEs somewhat similar to the kind which generates the most yelling and shouting, which appears to be the optimistic behavior, not closely related to actually inventive activity.

Is it like slip and fall, the sort of constant background noise of litigation a business faces or is it something that has substantive impact? So you can see on the slide a summary of the findings. For most of the respondents of this survey, they got to say, Look, it didn't have a potential impact. It really sort of looks like a slip and fall type of problem, but with one glaring exception. I think this just quantifies

what many of us know already, that this is representative of being a big problem for the companies in the IT sector. This acronym, DICE, Digital/Information/ Communications/Electronics comes from Richard Razgaitis. A third of those respondents are going to say that this is a substantial problem.

And we agree that it is what they would characterize as a problem. The question then arises: "Well, what was its actual impact?" Does it change things in the economy or impact the progress of science in the useful arts? Again asking for all respondents across all sectors of the economy in this survey, at least, a few of them seemed to do anything with the exception of the IT folks.

So you can see that in IT the actual potential for opportunistic litigation by NPEs, some of them were not inclined to pursue an otherwise attractive opportunity. Some of them will decrease investment. Some of them will abandon R&D projects, but most of the time even in the IT sector, the response is really it doesn't do very much.

So I think that there's a lot of smoke here. The fire in terms of is it affecting the R&D process. Are these companies substantively changing the way they

go to markets? We don't see any strong evidence at least here. What we do see I think is I think, however, some response to this. Maybe we don't see any impact because the companies affected due a few sensible things to mitigate it.

And we've asked over the years: Do you do things like proactively compile collections of prior art? Do you file reexamination requests? Do you put together a joint defense agreement? And again not very much anywhere, but a lot of this going on in the IT sector.

So those are the formal charts I prepared. Let me just offer a few additional remarks. Stu's kind of an economist, but I'm definitely the card carrying economist on this panel. Why do we care about this issue?

I think from 30,000 feet, almost everybody agrees that markets for technology are really important, and there are potentially very big efficiency gains to the economy utilizing the resources of small and independent inventors more effectively. For example, division of labor is the phrase we like to throw around. You get in -- if you have a market for technology, you can get specialization in invention and specialization in product and distribution, and since Adam Smith, economists have agreed that this is a

profoundly good thing and has benefits for anybody concerned.

The nervousness I have about this question, agreeing there are potentially very large gains, is that once we move to the idea of a market for technology and the pricing, particularly at the early stage research, specifically through acquisitions or terms of license deals or so forth, we've pulled a set of prices onto technology, which the utilizers or commercializers downstream will respond to, and the upstream people will also respond to, so the price mechanism in economics plays a very important role in allocating resources.

Now, that's all great if the prices are the right prices as an economist would understand them. If the prices are wrong, that is to say they reflect market failures in the market for technology, then resources are going to get steered in the wrong directions, and so I think this is -- it's a first order long-term question to think about, if we care about economic growth and competitiveness and so forth, is to understand whether or not the prices in these markets are indeed right, or do they deviate from reflecting the marginal opportunity cost of the resources employed or whatever it is that a theoretician interested in growth would focus on.

And I think we should indeed be a little bit

skeptical here. Back in economics 101, the market, we teach which has the most egregious market failures, meaning the prices are most likely to be wrong, is the market for knowledge because of the obvious problems relating to information, public goods, so on and so on and so on.

Now, are the institutions that are evolving able to solve some of these problems? I think they may well be, and I'm personally very encouraged by the discussion this morning from practitioners who are pointing out the very rapidly moving frontier, the emergence of new institutions who seem to be solving some of the problems in these markets, the potential for using ideas, taking from finance, securitization, derivatives and so forth as ways of bringing more volume, more liquidity and more pricing efficiency. I think those are all very encouraging.

What I do think we should be somewhat concerned with is the limits on this activity. How far can these new institutions or new contracts or new players at the table go toward solving some of the ways in which the system seems to be broken? And I think it's -- I thought about this quite a lot, and my answer is it’s too early to tell, we're really going to have to see how all of this plays out.

So I think I'll leave it off at that and look forward to an interesting panel discussion. Thank you.

PROFESSOR VERMONT: So the industry panel earlier today made reference to independent inventors a number of times, and what they had in mind when they were using the term independent inventor was a small inventor, somebody who is not part of the big organization. I'm going to talk about independent inventors, but that's not what I mean by an independent inventor.

For me independent inventor means someone who didn't copy the invention, a second inventor, someone who -- I'm sorry, didn't copy the patentee's invention, so a second inventor comes along, doesn't know about the patent or doesn't see the patent and independently comes up with the subject matter. So there's no free riding. The second inventor incurs costs of the invention.

Now I've argued before that independent inventions should be a defense to patent infringement provided that the independent inventor completes the invention prior to receiving actual or constructive notice that somebody else already invented it, i.e., the patentee or the first inventor.

Now, since I made that proposal, there's some new data, some new books, some new work that's come out.

Patent Failure, a book by Jim Bessel and Michael Meurer, Mark [Lemley] and Chris Cotropia's work showing that the amount of patent infringement litigation that concerns actual copying is very, very low, at least outside of the pharmaceutical industry.

And then I also became aware of Mark's paper on ignoring patents, and in that paper he pointed out that in some industries, it's routine -- in component industries, I guess mostly IT, it's routine to completely ignore patents.

So what do we make of this and how does this affect the independent invention defense? Does this militate -- this new information, does this militate in favor of the defense or against it? I think it actually is for it. I think we have to ask: Why is it that patents are being ignored in these component industries?

Now, one reason is that the cost of clearance is very high, and a big part of that is simply the notice function of patents is not serving well, right. It's hard to know what patents -- what claims -- cover? They're validity is often uncertain, and you can have an enormous number of claims overlapping on a final end product.

Another reason I think that companies routinely -- and some industries -- routinely ignore patents

is that there's just no information in those patents, there's no technological information in those patents that will help them do anything. The only thing that they get from finding these patents is they learn what their liability would be.

They get information about what claims someone might make against them, but they don't tend to get information out of the specifications that's going to help them invent or do what they're doing and make a product more efficiently, so what do they gain? What do you gain by performing clearance if you're in one of these component industries?

In the best case, you reduce the variance in your final outcome, so if you go ahead without reading the claim, you could escape detection. You might never get caught. If your transaction costs -- if it costs a lot for you to search to find patents out there and it might cost the patentee a lot to find you, so you might get away with it. You might never get sued, or alternatively you might get slammed.

Your product might read on a claim that covers something that would be very expensive for you to switch out of, right, so in the best case scenario, you reduce the variance in your outcome and you reduce the uncertainty that you're facing a little

bit.

The worst case scenario is that you just increase your expected liability. You increase your downside by coming to the attention of these patentees, so you incur clearance costs. You spend money and then find them and say, oh, by the way, I may be infringing your patent, and hopefully you work out of a deal, but if you don't, you have flagged yourself as a potential infringer. You may actually increase your expected liability.

Now, it's disconcerting at first glance to think, "Well, gosh, these companies are ignoring patents left and right," that doesn't seem right. I think the initial impulse is to think we should do something to prevent that, for example, enhance damages for failure to search, right.

So if you willfully infringe, if you knowingly infringe a patent now, damages could be enhanced against you. Maybe we can have some similar rules for failure to search, but this would be I think a bad idea for several reasons.

One is it would delay innovation. If we're going to force, if we're going to make the penalty draconian for failure to search, we're going to force companies to search prior to engaging, prior to

developing their product and commercializing the product. We're going to delay innovation. We're going to delay -- we're going to postpone the time at which inventions actually get commercialized and move into the market so that people can use them, especially in a world where the PTO has a backlog of 1.2 million applications and we're approaching four or five years on average for an application to get from filing to issuance.

Separately, it would seem to make sense, it would seem to be a good solid general principle that if the cost of searching, if the cost of clearance exceeds the cost of independently inventing the thing, well then in general we would want you would think, at least on the first pass -- we would want parties to independently invent, right.

It's wasteful to spend $1 million searching to find an invention that maybe is claimed somewhere if you can make the invention yourself for $50,000.

Now, under the current law -- the law doesn't currently recognize independent invention as a defense, we still have parties not searching, suggesting that the transaction costs are really high because they're facing this high expected liability. There's

reason to think or this logic suggests that there's too much searching even under current law, and that if anything we want to limit damages or reduce expected liability in cases of independent invention.

Now, as soon as you say that then you think, "Okay that's going to reduce the expected reward to the patentee." The patent's going to be worth less. Yes, it is, but that's what we want in a situation where the invention would have come sooner anyway. The purpose of patents essentially is to accelerate innovation, to get us inventions faster than we would have them in the absence of a patent system.

So if an invention would have come six months later, after the patentee had invented, if it would have so six months later in the absence of a patent system, then all that the patent has done is it's given us six months of use of that invention.

Now, in some cases it would have been 20 years or more before the invention came in the absence of a patent system. These patents are worth more. So if the independent invention occurs quickly after the initial invention, that is strong evidence that the value of the patent should be lower to the patentee because there are costs associated with patent.

There are social costs associated with patents and we don't want to pay any more of those costs than we have to.

So how do we incorporate, how does the law take account of independent invention? I had proposed essentially that there be a change in the statute so that if there was independent invention prior to receiving actual constructive notice, if someone else had invented, then there was a complete defense for the independent inventor, but there would be a lot of division on this. This would be a very controversial proposal.

In chemistry, pharmaceuticals, independent invention is quite rare, at least with respect to small molecules. They probably shouldn't care too much about it because it's not going to affect them. But in other areas, software, for example, parties that consider themselves beneficiaries of the patent system, they're very much going to be against independent invention defense. And parties that consider themselves victims of the patent system, they should be in favor of it so there would be a lot of acrimony and it may just not -- realistically speaking it may never get passed.

So I've kind of come around to thinking that

Mark is right and thinking that it's really the courts who should take this into account. They can do that by considering the fact that someone independently invented as a factor militating against imposition of a permanent injunction.

They can take this -- we could reserve the willfulness damages for pirates, for someone who actually copies. We can go a little further than that on damages by means of the foreseeability standards, so under some of the Federal Circuit case law -- some of the Federal Circuit case law says that foreseeable damages are generally compensable. But, in a world where the vast majority of the infringement is actually inadvertent, you never even foresaw that you were going to infringe, much less what the consequences were going to be. I guess we have to adopt a fiction to some extent that you foresaw infringing.

But we can curtail that -- apply the foreseeability requirement differently in the cases of independent invention by saying, "Look, we will see foresee that you could infringe the patent, even though you didn't know about it, but we're not going to say that you could foresee the loss of the collateral sales, conveyed goods, derivative goods. So we can shrink the umbrella of liability

that way.

Mark and my colleague Tun-Jen Chiang suggested that obviousness or the non-obviousness standard is another lever by which we can take into account independent invention, and this is a nice way to do it because it makes the case law actually more coherent or would make the law more coherent.

So, under current law, the long felt need for an invention and the failure of others, are considered objective indicators that an invention is non-obvious. Well, if those are objective indicators that an invention is non-obvious, then you would think short-felt need, like in other words as soon as there was a demand, boom, the product showed up, and success of others, meaning multiple parties converge on it at roughly the same time, would militate in favor of obviousness there. There would be an objective indicator of obviousness.

Now, one possible downside is that would blow the patent up. So if the patent is obvious, the claim is obvious, then the patent is destroyed. The re-invention defense that I proposed is actually more moderate in that it would only give a defense to the independent inventor. It would not invalidate the patent.

But from probabilistic *ex ante* standpoint and considering the fact that obviousness -- that these are secondary indicia, they're competing with the other secondary indicia, and that they're secondary and not primary indicia, maybe the effect is sufficiently attenuated that it wouldn't unduly undermine incentives to invent.

I guess that's all I have for now. Thank you.

PROFESSOR WAGNER: All right. Thank you very much to the FTC and Suzanne and Erika for inviting me, and I appreciate all of you who came to watch, so what they asked me to talk about was patent portfolios -- and my partner in crime on this is my colleague Gideon Parchomovoksy, who would be glad to answer any questions about this if you let him know.

So most of the time when we talk about patents, particularly in the legal academic community, we are thinking of single individual patents, and most of the analysis occurs at that level, which we started questioning when we started thinking about this. So, thinking broadly on what the value of patents is or if they have value, what is it, traditionally you think that patents have some sort of expected value via the right to exclude others from the marketplace.

And it's useful in a variety of ways, to have a

right to exclude others from the marketplace. But, increasingly people who think about this have growing doubts about this, and when you look at average value on almost any set of estimates that have looked across all patents, it's very likely to be insignificant value, and most if not any -- many if not actually most cases less, and maybe even significantly less, than the acquisition cost of those patents.

We know that patents have an extreme skew in distribution of value and the vast majority of patents have very little apparent value. Perhaps as importantly there's very little or no *ex ante* visibility to distinguish the valuable patents from the less valuable patents.

Now, some of this, we heard from this morning, in theory, might change if we had a robust market, secondary market that, in fact, did some of these functions of estimating value. But, I think as even the people on the morning panel would agree, we're not there yet, and we certainly haven't been there in our recent history, which this is primarily describing.

So we described this in a sense as the patent paradox, which is if most patents, and in fact almost all patents, have little or no apparent value, maybe even have negative expected value, then why are all these

companies, in particular large companies, patenting at increasingly heavy rates? Almost no matter which way you look at the measurements of patenting, those increase.

And the idea here is what they're doing instead of -- they're not interested in patenting -- is the theory here. They're actually interested in portfolios, and what they're doing is adopting a strategy of high volume, low quality, low cost patents to build their portfolio, and in that sense patents are a means to an end rather than an end themselves. We need to think about that when we think of policies related to patents and how to understand them.

There are other views, of course, out there in the legal academic community that patents confer other benefits, right? We've seen Clarisa Long's theory that patents might be signals. They inexpensively convey valuable information about the firm. They can be used as internal metrics. We see that every now and again.

Some people theorize that they're just a lottery, people are just essentially playing the lottery with patents. Many people say that what people are doing, what firms are doing by patenting very heavily is just playing defense, amassing large quantities of patents just to keep other people from amassing large

quantities of patents and suing them.

So the basic theory here which in a sense integrates all of these prior approaches is to say that the modern value of patents lies, in fact, not in any individual significance, although there are certainly individually significant patents out there, but primarily in their aggregation to a portfolio. And, the sense here is the whole is greater than the sum of the parts, and you need to understand patent that have inputs to portfolio construction rather than as the actual goal of having the patents, which are building with a patenting strategy a portfolio and not simply a collection of patents.

That, then, suggests that patenting will occur when the marginal benefit of building a portfolio exceeds the marginal cost of acquiring the patent itself -- which implies a higher rate of patenting than you might otherwise expect, given the substantial benefits of the portfolio and reveals that patenting decisions can often be, and might in fact always be, in some cases unrelated to the value of the underlying patents.

So why would companies do this? So we explore some of these issues. We had a few case studies in a paper where we looked at some companies that dropped

their R&D at the same time they radically increased their patenting activity and find this sort of thing going on, which is they're using patents in two ways.

One we call super patents, which is in order to really have a right to exclude in the marketplace in the modern patent law, you need a lot of patents, both because you need to have room to operate for future innovation, if you're a company that's doing a fair amount future innovation. You can use a set of patents to attract related inventions to your company if you can build up a scale of patents that keep people out of your marketplace.

You can, in fact, attract inventions. It avoids litigation. We heard a lot about that this morning, about how people -- one of the strategies of litigation avoidance is to throw your own stack of patents on to the table and tell your opponent to deal with it. It increases your voice in the political economy of the patent system which is becoming, as patent reform gets to be a closer and closer to reality -- becomes a more important feature.

We've seen the IT industry in particular become very active with a voice in the politics of the patent system recently which I think is likely to go down to their benefit in some way and enhances efforts to

attract capital.

The other reason you use it is just for hedging purposes. It addresses a lot of uncertainty to have a lot of patents. You are no longer relying on any particular patent or even particular specific technology or invention, you expand your freedom of R&D in the future - future market conditions, future competitors and patent law.

So, if the Federal Circuit changed the written description requirement tomorrow, half of your patents might be invalid but if you still have 10,000 patents, only a few thousand of them are probably still likely to be invalid, so you have less concern in that regard.

So, the current patent intensity would be the expected consequences of the rise of patent portfolios and not really a paradox. The individual patent value is unrelated to patenting decisions. If anything, you might think about this is an inverse relationship, meaning as patent value becomes more diminished or even uncertain, the only strategy you have then to defeat that as a player in the patent system is to get more -- or a larger portfolio and therefore more patents.

So, there might be increasing feedback effects to this as we go further along. It explains a lot of

patenting patterns that we actually see out there. Large firms patent a lot. Small firms seem to patent more carefully. So, firm size, experience, affects portfolio differently since it's simply not possible for smaller firms to develop the portfolio that a larger firm would and participate in the full portfolio market.

We see a slight increase in share of patents for small firms, and in patent litigation patterns. If you have fewer patents, you tend to litigate more so you have lesser -- in that sense lesser portfolio effects, they don't help you as much. So what are the implications of this over the long run?

We think the net effects are probably mostly negative. I think that a lot of this is suggesting a more complicated and costly patent system. It's harder to deal with on a number of levels. It's going to have significant distributional effects if more companies adopt or continue to adopt a high volume, low quality strategy, meaning you need a lot of resources to play this game, and smaller firms or universities that have less cash to spend on patents are going to be in a sense locked, out of this game.

And potentially some significant anti-competitive effects, if it's in fact true, which we

are pretty sure it is, that a lot of the transactions that are going on now are very large collections of patent portfolios, then that is definitely something to be worried about from a competition perspective because the larger the sort of scope of technology that people are cross licensing, the more likely it is that they're managing to cause anti-competitive effects.

There are possibly some advantages to this - you're going to generate a lot of additional disclosure. Even though I think I agree with Sam that in most cases we don't think of patents themselves as containing a lot of useful technical disclosure, but that is not, of course, the limit of what patents provide disclosure for, right? The fact that people patent means that then they go on and they give papers or they produce products or they do other things that then provide the information about the innovation, even if the patent itself isn't a particularly great medium for transferring the technological knowledge.

A portfolio focused innovation strategy, if you are really serious about crafting a patent portfolio or are really thinking of where the gaps are in your technology that you want to go and invent and be very careful about what you're doing in terms of building portfolios. That, in terms of social

benefits, might be quite beneficial because it suggests that people are in fact doing a deep analysis of which kinds of patents they're getting and why.

We were not sure that most of the companies -- certainly not the ones we studied in any detail are doing this. It seems more like they're just throwing a lot of money at a problem and trying to generate as many patents as possible. But you could imagine a portfolio building structure, a scenario or strategy where people were actually doing things in the way that you would want in terms of supporting innovation.

Another advantage is - it certainly is clear that a lot of firms are staying in the patent system, and one of the things we need to think about, in terms of policy for the patent system, is whether there are alternative mechanisms for protecting your knowledge assets. Trade secret is a primary one. Other things are not patenting at all, changing the design of your product so as to avoid discovery, different kinds of license agreements. There are ways to protect your assets without getting in the patent system. Many of these ways from a social perspective, at least in my view, are more negative in the patent system, even with the problems the patent system has. So, at least if people are

engaging in a portfolio strategy, they are in the patent system and in that sense can be reached by patent reforms.

There are and of course -- more of my recent work has gone into the fact that high volume, low quality strategy actually complements a bunch of other incentive effects that we currently see in the patent system.

Right now, the patent system strongly encourages patentees to defer clarity at all costs, which means basically avoid telling people what your patent says, particularly the PTO at an early date, defer as much as you can any detailed explanation of what your claim terms mean. Don't disclose any more than you absolutely have to.

There are a variety of legal doctrines that are causing this problem. I think all of these are deeply unfortunate and are simply encouraging people to make their patents as unclear as possible. It's a perfectly rationale strategy, by the way, on the part of the patentee to do this and has I think very strong negative consequences.

This also feeds into institutional incentives, right? We have major problems with -- the PTO has a major political problem in that it has what appears to

be about a million patent applications sitting on desks and a lot of people agitating for them to get that backlogged clear. We can certainly predict one way they're going to do it which is simply start issuing a lot more patents, and that I think is not likely to be a good result.

It also feeds into some cognitive biases that I'm happy to go into in the Q&A. It suggests that these incentives supporting this modern high volume, low quality strategy are pretty durable, sort of structural to the patent system, and at least leads me to the conclusion that they're going to be pretty difficult to attack in any meaningful way, and any solution is going to be a pretty costly trade-off.

I actually spent last fall in Japan because there's a sense among a lot of academics and people who in the patent system that whatever they're doing in their patent system is better. They're doing sort of a better patent quality job, and the bottom line I found absolutely no evidence to support that. They have essentially the same set of problems we talked about here, monster backlog, lots of political pressure, trouble with the difficulties of examining, not enough time.

You talk to the examiners, they talk about

exactly the same sorts of problems our examiners are having. An invalidation rate in litigation that looks incredibly similar if not worse than here, around 50 percent, so in that sense it's hard to see how we should -- we should not expect, at least in my view, that PTO is going to provide any sort of help for a high volume, low quality patenting strategy.

The incentives are simply too large. There are certainly lots of things you can do at the PTO to make the trains run on time better and may not even be very harmful. I mean, you may actually get some benefit to society from doing them, but I don't think you're going to get any actual gains in terms of patenting.

So what can you do? Well, you could reduce low volume patents by simply changing the cost structure, shifting a lot more cost to patentees, making it much, much more expensive to patent. That would certainly help. That has a number of obviously unfortunate effects as well.

It creates distributional problems with who can patent, and perhaps we can do some of this, but I would be very cautious about doing so because that has obviously a number of distributional problems with small companies.

You could reduce information costs. I think

this is where the big gains are is work on notice function. I have written a lot on claim construction. I think that's fundamental to the patent system. The fact that we cannot figure out claim construction is deeply harmful to the patent system.

I don't agree with Mark that it's completely broken. I think we actually had rules that were going in the right direction but we've taken steps back in recent years, and then taking some -- there are disclosure requirements more seriously than we do.

You can reduce the cost of portfolios once they're out there. You can take in more permissive approach to mass licenses, but of course this has competitive effects potentially, important competitive effects so we should consider that as well.

There's a series of more radical approaches. You could treat patents as a form of pollution and have a cap and trade system where you limit the amount of patents that people can get per year and let them trade permits to get them, and that's not a particularly serious suggestion. But, I'm thinking that those are the sorts of order of magnitude of solutions that we need to think of if we really want to change the system from the current sort of high volume, low quality strategy to something else.

So this is sort of the end. The whole is greater than the sum of the parts as patents, and we need to understand the patent system in that light and not in the traditional light of each individual patent matters as its right to exclude, so thank you very much. Happy to hear comments.

MS. MICHEL: Thank you to all our panelists. That was really super and covered a lot of in-depth information, so what we'll try to do in the discussion period is partly to get your reactions to each other. You all did a great job of presenting different information, and so it would be good to hear your responses.

I wanted to start with some of the issues that Stuart brought up talking about technology transfer from entrepreneurs and start ups into larger companies. What's your sense of how frequently start ups and entrepreneurs hope to commercialize their inventions themselves as opposed to transfer that information, transfer that technology to another company in the hopes that the other company will actually get it to market?

I think what I'm getting at here is: How important for entrepreneurs are these markets for technology? Anybody?

PROFESSOR LEMLEY: My sense, Stu might have

evidence more directly that assesses that question. He talked a little bit about the 5 percent number. My sense is that almost always start-ups go into business because they want to make a product, because they want to make it big, right?

There are companies now who go into the business of collecting patents, and I guess that's a somewhat different exception to consider, but nobody who develops a new technology develops a new technology thinking, boy, I really hope not to practice the invention but to ultimately get patents and sue other people who do practice the invention.

PROFESSOR POLK: Now, although maybe in the semiconductor industry, I mean, I think one way of looking at it, right, is that there are design firms that start up all time. There are specific -- they have no intention of ever building anything at all. They're just there to design, right?

PROFESSOR LEMLEY: That's right. That's right. So the question of what do we mean by practicing the invention I think requires some industry specific attention, right, because we can certainly have and patents can certainly encourage vertical integration.

I can make a piece of the puzzle and then kind of put that into the downstream market, particularly in

semiconductors where it's an industry that requires substantial investment to produce the end product.

MS. MICHEL: Also, if anyone would like to speak, you can turn up your table tents, and also feel free to contribute. I don't mean to stifle the discussion here.

You talked a little bit about the varying by industry. For instance, in the biotech industry, it's a common model to develop your technology and then hope to get purchased by a big pharma company, not really any -- necessarily a thought early on of getting that drug to market yourself.

Does that model also take place in the IT industries? And, Stuart, and any other comment.

PROFESSOR GRAHAM: Well, I did want to say that -- so let me just chime in on something that Mark said before, and that is I think it's a plausible hypothesis, what you've set up. Hopefully we'll be able to answer some of those questions in the data.

I am just obviously churning out for you now the most grossest statistics, but obviously with the age of the firm, we'll be able to see if these -- and more narrow sectors we're going to be able to see if firms are actually developing more of a licensing strategy over time.

I will say also, chiming in and dovetailing on what Polk said, I think that this is a -- particularly in complex technologies, right, where you have a lot of opportunity for vertical specialization in markets, it seems that this is just a more substantial opportunity for firms.

Having said that though, onto the second question: How does this play itself out in terms of acquisition as a strategy? I'm actually working with a graduate student now, and what we're trying to do is model and then bring empirical evidence to bear on whether there are differences in the way in which patent portfolios are built given the incentives or given the intention of the firms in terms of how they see their exit event.

I've asked some people about this out in the field and they say, oh, there's certainly differences in the way that patent portfolios are built, and then I ask other people and they say, absolutely not, you build for value, and that's what you do, so hopefully we'll be able to say something in the coming months more systematically.

MS. MICHEL: Iain?

PROFESSOR COCKBURN: Actually I think this phenomenon of hoping to be acquired or a pure licensing

model is most visible in sectors like biotech, pharma, but I think it's actually quite prevalent elsewhere. The actual incidence, I don't think anybody really knows - until Stu gets back to us. But, we would offer the observation that, for example, during the 1990s, the only real good way to make money in Silicon Valley was to get acquired by Microsoft.

That's obviously a gross simplification, but I think the point to be learned from this is that vertical market structure really matters here. The problem in bio-pharma is that between small biotechs and the end users stand large companies who effectively control manufacturing, distribution, and marketing.

The pathway to get to market is long, requires capabilities these small companies don't have. In this discussion, however, is the potential source of inefficiency arising from a market for technology which is consider the large pharma's problem, increasingly the numbers show this very dramatically -- increasingly they rely upon sourcing technology from upstream, either by acquisition or through partnerships or licensing deals and so forth.

The efficiency benefit we ought to get, though, is from specialization, but from large pharma's

perspective, they can't abandon doing basic research in molecular biology and hope to rely simply upon acquiring it from upstream. Otherwise, they're extremely vulnerable to hold-up from upstream, so there's a cost to opening up this market for technology in that the big pharmas still have to continue investing in basic research in order to have an alternative to go elsewhere in the event that they don't like the prices that they're facing from upstream.

MS. MICHEL: Does it make sense to think about a distinction between a market for technology that involves this kind of tech transfer being acquired through licenses to a manufacturing company versus a market that's about clearing patent rights? A manufacturing company independently creates the product, gets it out there but needs to clear the rights? Mark?

PROFESSOR LEMLEY: Well, certainly I think it makes an enormous difference at an economic level. The question is whether you can operationalize a legal definition that treats those two differently.

So, I think we could actually solve a significant number of the problems around the litigation of use hold-up issue if we had a way of distinguishing between licenses and/or litigations that were at their heart about technology transfer. That is where information is

actually passing from one to another, and licenses that were not -- that maybe involved independent invention in Sam's formulation.

The problem is once you create a rule that starts to distinguish between those two, every license agreement will give you technology transfer whether you want that technology transfer or not, whether it's helpful to you or not, so, in terms of thinking conceptually about the industries, I think the number of people who go into the business to become patent asserters or patent license revenue collectors is relatively small.

But there are a significant number of people who go into the business, as Stu and Iain and Polk suggest, to engage in technology transfer, sell out the know how, maybe go in-house, be bought up and working for a new company that will manufacture the product and so forth.

MS. MICHEL: Thinking about technology transfer, what's the effect of the ambiguity and the uncertainty surrounding the patent system as opposed to all of the other uncertainty, for instance, associated with the technology? Is the patent system really the problem in that kind of technology market where we're transferring an actual technology to be developed by a manufacturing company, and what should we do with the patent system to

deal with those issues.

Polk?

PROFESSOR WAGNER: Right. Well, I think as Iain suggests in his presentation, there are just inherent impracticable problems in trying to value information at all, and so talking about sort of an efficient market and knowledge transfer is difficult to do even in a best case scenario because you have all of the levels of uncertainty that you were just discussing.

I do think that the patent system, the lack of certainty surrounding the patent system is not helpful, and I think Stu had a slide showing how it just eats away at what would otherwise be the welfare gains.

I mean, one of the things we think patents do or should do for us is provide people the ability to transact around knowledge assets that would otherwise not be possible, and if you don't have enough, every bit of uncertainty that develops undermines that potential gain to a significant extent, so from that perspective, I certainly think that the lack of certainty in the patent law is very significant and should worry all of us.

MS. MICHEL: Iain?

PROFESSOR COCKBURN: I agree. I think that the lack of clear title, whatever analogy you would draw to

real property, is certainly costly and distracting. I do wonder though how serious this problem is in relation to other sources of risk and uncertainty in the market for technology.

It strikes me that the conversation today has largely stirred away from recognizing a very critical factor of most of these transactions which is prospective deals about something that might happen in the future. An economist looking and trying to value a license agreement is going to be critically looking -- when I look at them, I understand them as ways to share risk between the licensor and the licensee.

Many of them, as we know, are complex documents, a lot of contingent payments, and there's a royalty on net sales of something which is not yet produced or even defined. And my sense is that's the first order source of risk and uncertainty that participants in this market are dealing with, and that the title problem, if you like, is secondary.

MS. MICHEL: Since we are talking about the patent system, any thoughts, Mark, you said we can't solve the uncertainty problem, but what can we do to make it better and any other comment that you were going to throw out there?

PROFESSOR LEMLEY: Well, the comment I was going

to throw out was that I think this problem is industry specific, and it varies widely. In the software industry you go ask venture capitalists -- wave everyone [in the audience to get the lights back on] -- the software industry venture capitalist might care that the start ups have patents. They probably care -- they probably don't know and almost certainly don't care whether those patents are valid, what the claim construction is going to end up being and that sort of thing.

By contrast in the pharmaceutical industry, pharmaceutical companies will not enter into new drug investigations unless they're confident up-front that they have a patent portfolio that will cover those drugs.

What can we do about certainty? Look, I mean, I think there are a number of things you can do to try to gather better information, either cheaper or earlier than we do it in the current system. Bhaven Sampat and Doug Lichtman and I have proposed that we ought to try to harness information in the hands of the patent applicant by sorting applications into those who are willing to pay for extra scrutiny to get a stronger patent and those that are not.

I think a post-grant opposition system gathers information in the hands of competitors about which

patents are important and which ones are not and uses it to make earlier and somewhat cheaper decisions on the validity of that patent than we would get in court.

It may be that in certain industries we can use something like the peer to patent peer review project to try to scrutinize applications effectively at no cost to the Patent Office, so I think there are lots of things you can do, and then I think there are specific ways you could get greater certainty in the damages rule than we have right now for example.

But I think the toughest one and one that I just don't see a clear way to solve in most industries is the meaning of the patent, the peripheral claiming system that tries to define the boundaries of what the patent's going to cover including technology that doesn't yet exist in many cases, just doesn't work outside of a few industries like pharmaceuticals and DNA where we have a clear nomenclature that everybody understands the meaning of.

MS. MICHEL: Stuart?

PROFESSOR GRAHAM: Yeah. Just I'll chime in a couple things that Professor Lemley said. Again, running back to our survey, he's right, there are significant differences in the way in which the firms from these two industries, IT versus biotech, are

telling us that the venture capital cares about, whether the firm has patents or not.

Now, technology firms are much more likely to tell us that their investors care. The other thing we find is that the biotech firms are paying significantly more for their patents, which suggests either that they're more complex or that they're just taking a lot more care in the type of things that they're buying from the Patent Office or intermediaries.

I mean, on this question of inefficiencies in the system, I go back to a professor of mine, David Teece, and Teece had taught me originally that there are a lot of substantial problems associated with transacting over intangibles. The opportunities are much harder to recognize. It's much harder to find parties for the transaction.

Disclosure itself over intangibles is very difficult and often wrapped up with tacit knowledge that's difficult to codify and knowledge about which it's a difficult to transfer, and the boundaries, the boundaries that we've been talking about. I still -- I'll swing back again to the prospect that looks I guess over the last couple of weeks improved of actually getting a post-grant opposition system.

Again on the narrow ground of being able to

increase certainty over the validity and boundaries of these things reasonably early in the process, and this has the added feature of also offering some sort of reasonably quick feedback to the patent examiners. If they're getting feedback within a year as to the validity of their work product, that seemingly could only help in that quality process as well.

MS. MICHEL: Does your comment suggest that start-ups should actually want post-grant review in the sense that if they survive, that they've got something better? Do you know if that is actually something they want.

PROFESSOR GRAHAM: I've actually spoken to a lot of folks at small firms. I hear differently. Some are fearful of being opposed to death, but others with whom I speak actually believe -- and particularly those that have an experience in the European system where they actually were involved in this system, even though they're at small firms, they believe and have told me so that more certainty in the system can only help them ultimately.

MS. MICHEL: Okay. Polk?

PROFESSOR WAGNER: So I wanted to just quickly respond to Mark which is I think we can solve claim construction.

MS. MICHEL: Get better? Maybe solves is too

strong.

PROFESSOR WAGNER: Solve is probably too strong. We can certainly get further along the line, and I think that the key is essentially what he said, which is in areas where we have a fairly well understood set of nomenclature, then it works, and it works reasonably well. Is it a hundred percent predictable? No, of course not. It never will be.

I think if we actually were serious about claim construction rules that force patentees to define what they meant by their claim terms in a way that people could actually understand what they meant, then you're going to get a lot better patenting.

The problem we've had is for the last 20 years the Federal Circuit has tried different things with respect to claim construction methodologies. The PTO has never been on board with claim construction methodologies at all, and in fact took the position in the *Philips* case that they don't even do claim construction so think between that for a minute and whether that makes any sense.

So in that environment, no, we're not even close to getting the way we should get in claim construction, but I think we would be deeply remiss in giving up on it because I think that is the one area that we can really

make significant gains in terms of the notice function of patents.

MS. MICHEL: How might you do that? How might you force patentees to say what they mean?

PROFESSOR WAGNER: Well, you can do a variety things. You can have the PTO take claim construction seriously for one thing, either by forcing patentees to be quite clear about what it is that they mean. You can force patentees to provide a glossary of any important words in their patent, and many patentees already do that, but sadly not enough, and in fact the incentives are generally the other way.

You can -- I thought that the Federal Circuit's three or four year attempt to go towards a dictionary meaning which had a number of problems in the transition period when patents were not in fact drafted in that light, if it was kept over the long-term would in fact result in greater certainty because people would draft their patents according to known definitions, and we would then get an expected result at the other end.

It didn't work at all. It had serious transitional problems of course, which is what we were seeing and why I think they abandoned it, but I think that there's a variety of specific tactics you could use to increase at least the -- decrease the scope of

uncertainty with respect to claim construction.

MS. MICHEL: Is your suggestion of having the PTO doing claim construction and enforcing patentees, to be clear, are you thinking about stronger enforcement of the definiteness requirement in 112?

PROFESSOR WAGNER: That's certainly one way, right. We could be serious about the indefiniteness requirements, particularly at the PTO where they don't in fact take it particularly seriously in my view and require patentees that don't provide a sufficient level of detail with respect to what it is they mean, that they have to either define something very clearly in their specification or at minimum tell the Patent Office during prosecution that that's what they mean.

You could do a variety of other things. Academics have proposed things like a standard set of dictionaries for particular technological areas that are then widely accepted or the default presumption is that you get those meanings. You can obviously vary it if you have any reason to, but it would force the patentees to either accept the default meaning or say something that would indicate to the public that they're not using the default meaning -- instead of what they do now, which is be as vague as possible, avoid any expression of meaning with the hope that when they get

to litigation, they can broaden the meaning beyond what the Patent Office assumed it was.

MS. MICHEL: Sam?

PROFESSOR VERMONT: Yes. So the definiteness requirement, being strict about that is a no-brainer. That's something it seems like we really ought to do. There's I guess older case law now, but some Federal Circuit case law saying that a claim will not be held invalid for indefiniteness unless it's insolubly ambiguous, and then goes on to talk about -- even though reasonable people could spend a lot of time looking at it and if they end up disagreeing, that's not insoluble, right?

Then there's a later case where -- a 2005 case where the Federal Circuit says only, if it's a severe defect. Now, there's some other cases that don't use language that's so forgiving, but all of that -- but even in those cases I think the standard isn't high enough.

It seems that the standard should be what the statute says or for starters which is that the claim should be clear -- it says particularly and distinctly claim the invention that the applicant regards as their invention, so I would think particular in distinct should be the standard and also that what the applicant

regards as the invention may be a separate component.

That may be an additional thing and the CCPA recognized it as such, but I'm not aware of any recent cases. So we may get some mileage out of that.

We could also consider the possibility of changing the presumption of validity with respect to definiteness, so if the courts aren't willing to drop the clear and convincing burden with respect to all aspects of validity, perhaps we can just target definiteness and say with respect to definiteness, the standard is preponderance of the evidence.

The lexicographer rule is somewhat problematic. So, under this rule, applicants can define things as they wish, and they don't have to explicitly do so. They can just do so implicitly by the way they write their specification.

Perhaps we should modify that rule so that it's still available, but only when standard terminology is not readily available to the inventor, and the standard technology would not suffice to describe the invention. Then, additionally if you have to use special language, if you have to adopt an idiosyncratic meaning for something, then you would have to say so explicitly somewhere in your specification.

MS. MICHEL: Iain?

PROFESSOR COCKBURN: I think it's worth reflecting here where markets function effectively and what kinds of property rights are well priced and traded in high volume and are liquid. Where we see an ounce of gold, a barrel of oil, a bushel of wheat, a hundred shares in IBM, these are well defined -- the treasury bond futures contract, you start with a precision in the definition, and from that the rest of the market seems to follow.

And I think the -- I was struck when I was listening to Jim Malackowski this morning -- that even before I was working on my doctoral thesis, economists were trying to come up with ways to value patents and intangibles Zvi Griliches and others were at this for a long time.

Notwithstanding much improvement of the volume of data that's available and the statistical methods and all the rest of it, we're still stuck pretty much where I think Ocean Tomo or any other participant in these markets is stuck, with the things you can see about a patent and the methodologies for valuing patents and so forth, these are very blunt instruments. We count citations. We count the number of claims.

I've struggled for 25 years to think of any way of doing a meaningful study in which you could measure

the scope of a patent except by paying $25,000 per patent to a trained attorney to come up with some customized map, and I think that's a very fundamental problem. If you want to have these objects traded frequently in liquid markets, that the lack of standardization is very, very profound.

MS. MICHEL: Any reactions to PTO proposals or other ideas to place more burden on patent applicants to bring more information into the Patent Office, into the prosecution process describing what's in the prior art and why the invention is different? Would that help better define patents? Mark?

PROFESSOR LEMLEY: It might help better define patents. It might help weed out bad patents, but of course it's going to do so at a cost, and the question to me is whether the cost is worth paying, and that's a complex question. The answer is clearly sometimes, yes, the cost is worth paying. If we could distinguish between applications that turned out to be important and applications that are unlikely to turn out to be important, that would help so I have some proposals for doing that sort of thing.

But then the other factors that go into the complexity are: Is this search going to be done anyway? Have you filed your application in a

foreign jurisdiction, for example? Can you engage in work sharing to do the search? And how is the quality of the search going to differ from the applicant's search compared to the examiner's search?

Bhaven Sampat and I have done some work suggesting really whether substantial variation by examiners in the quality of the searching that they do based in significant part on how long they've been at the Patent Office, not perhaps in the way you would think, the longer they've been at the Patent Office, the less searching they do, the less prior art they find.

But then there are also psychological effects, right. Is an examiner going to be more likely to understand and/or pay attention to art they find themselves rather than art than somebody has handed to them from outside? And so I mean, I think the answer is we need -- we ought to have a reasonable search at a reasonable cost. We ought to get the applicants to do that only if we think they are better positioned to give us that information than the examiners are.

They might in fact be, but I'm not totally persuaded of that.

MS. MICHEL: What about beyond the search, requiring patent applicants to say more about the prior art that they have found?

PROFESSOR LEMLEY: So the PTO rules that were upheld in *Tafas v. Dell* in the Federal Circuit quite recently require this for large applications basically. I think it's a good idea, but I think it does raise substantial red flags for the patent applicant because of the possibility that information can be used against them in a court of law.

And so I think we need to pair that idea with some sensitivity on the part of the courts in inequitable conduct cases that compelled statements not be the basis for inequitable conduct unless it really does look like they were deliberately false.

My guess is the Federal Circuit is getting that message and will move in that direction, but that's a question that we have to wait and see to some extent.

MS. MICHEL: Stuart?

PROFESSOR GRAHAM: There are already requirements that aren't working, and that just suggests to us that the patent applicants are rational. So, we can expect that -- Mark and others have told us that the patents are probabilistic. Well, it's also true that the likelihood of being caught for inadequate disclosure will be probabilistic as well.

Maybe that will work to our advantage by

shifting those responsibilities over to the applicant because the applicant will be more likely to do adequate searching under the new requirements when they know they have a valuable property that's worth doing something with, but I'm not convinced that overall it's going to correct the problem.

MS. MICHEL: Okay. Mark raised the idea of transparency and I would be interested in hearing others responses to that. Would it be helpful to increase transparency in the market for starters? Iain?

PROFESSOR COCKBURN: I think Mark made the strong form case for more information, much of the information about transactions in IP being made public. This morning, I got the distinct impression from practitioners that they're very anxious that the disclosure is somehow profoundly damaging.

That may be the case. I think we just don't know. I don't think I would go as far as Mark wholeheartedly in favor of more transparency. I'm not quite sure that complete transparency is the answer. There are a couple of subtleties to this that I think are worth thinking about, one of which is the competitive disadvantage from disclosing information to my competitors and also the competitive advantage from reviewing their disclosure.

We've seen sort of -- economists would point to "What's the equilibrium outcome on the different rules?" I think you very frequently hear from people who practice. Practitioners are concerned about the immediate private interest of their enterprise or their client.

They see a small disadvantage, private disadvantage to disclosure, and that's enough to stop them from doing it. Collectively failing to disclose information can be socially very costly. Another example of this I think is very clear in the biomedical research.

One of the world's greater repositories of the clinical knowledge is in the basement of FDA, and no one can access it or get at it because there's a conviction on the part of, particularly, the legal people in the pharmaceutical industry, that somehow letting your competitors know about your dry holes or failed projects or difficulties which were enough to stop a project would be damaging.

It might well be damaging, but I've been to a number of meetings where, providing there are no suits in the room -- so if you have the scientists, they can all agree that the progress of science will be greatly speeded up if only there was broader access to this kind

of knowledge.

The moment you bring one lawyer or business person in the room, it all stops. I think that you can see very clearly that failing to disclose all kinds of information which individually might presumably be costly to the enterprise is enough to stop them from doing it, and I think that we just don't really have any evidence either way.

We've been looking at the markets for IP whether the requirements to disclose. As was pointed out I think that especially the small enterprise end of the spectrum, they have to disclose if they want to go anywhere near the SEC because any agreement they write is material, and they've got to disclose, and you can go and find it on the SEC web site.

That requirement doesn't seem to have a detrimental effect on investment or our progress of the biotechnology sector. They all have to -- all their agreements or most of their agreements become public, but I think this is an area where finding a way to collect meaningful data about the actual cost of disclosure as opposed to the deep seated fear of inside counsel of owning up to anything will I think really make a difference.

MS. MICHEL: Polk?

PROFESSOR WAGNER: One question -- just to dovetail off of whet Iain was saying -- is it's not entirely clear, and one other dimension of this is it seems quite likely we don't need to have every bit of information out there in order to make these secondary markets work a lot better than they do now. We just need enough information for people to make reasonable decisions on are a variety of levels, and that may be something far less than requiring every single transaction that occurs around a patent to be disclosed.

Although as researchers we love to say we want all the day that's possible, markets function all the time with incomplete data, and so one of the things I thought was rather compelling that we heard this morning was the private market might provide a lot of this. We're getting some disclosure through the SEC process. We're getting some disclosure through auctions. We're getting some disclosure through -- if the sorts of stock markets for patents actually occur, we're going to get some disclosure that way.

And one thing to think about is whether we should wait and see if we don't get the quantity of disclosure we need just through private activities rather than trying to mandate something.

The problem with mandating something is always

is whether you get gaming the system, whether you get people telling you things that aren't true, whether you get people restructuring transactions to avoid that looking like a patent transaction in order to keep it out of the disclosure requirement, so those are the things that would sort of concern me with trying to mandate it broadly.

MS. MICHEL: Iain.

PROFESSOR COCKBURN: I don't mean to hog the microphone here, but I have another thought I wanted to put on the table here which is that well functioning markets that we can point to immediately tend to be ones where there is a lot of mandated disclosure, and if it's not mandated disclosure, there's a great deal of public energy and resources put into collecting and publishing data.

So I think that one of the big policy problems -- many of the problems thinking about policy in this area rise from things built into the system which I believe are grounds for despair, like the relative amount of money spent on collecting and publishing data on pork bellies versus something we might actually care about such as transactions and intellectual property.

And I think we don't have a government

statistical system which can or will collect or publish this data. I mean, it really is I think kind of shocking and shameful. Almost the only place you can go to find any information about the size of the licensing market is the IRS statistics of income. There's one or two tables, statistical tables entitled by the entire U.S. government which is any sort of help in this regard.

And one thing, you might think the PTO or some other government agency involved in this activity might have as part of its mission is to produce information which respects the commercial interest of the people who are affected by it, that, nonetheless, makes public something about the volume of trade, where it's occurring, what type of technology what the prices might be.

MS. MICHEL: Why would that kind of information be useful to the market? I'm sure it would be useful to academics.

PROFESSOR COCKBURN: No, I think we don't know. What is the size of the licensing economy in the United States? People throw around all kinds of numbers, but it's not clear where they come from. There's that problem, specifically, in terms of participants in the marketplace. I think a lot of useful information was

provided this morning, a great deal of common sense talked about how do you shape the expectations of participants coming to a transaction. And all the failed transactions I was talking about earlier. People don't seem to have the ability or willingness to think about formal economic modeling or valuation which is based upon data and number crunching. Part of the that is because the available data is incomplete or too costly to find or we don't know where it is.

I think many of these negotiations fail because the two parties are streets apart. If they don't have an informed intermediary or a broker in the middle who is informed, I think it's one of the main deals, main reasons why these deals don't take place.

MS. MICHEL: Stuart?

PROFESSOR GRAHAM: I wanted to say, in some sense we have to -- we have to ask ourselves what information are we after here. Are these -- do we want information on one-off patent transfers? Often patents are transacted with many other different types of assets in ways that there are compliments, patents that compliment one another, and together they're worth more than they are individually.

They're offered with other complimentary assets

in some sort of transaction, so how do you dissect the value of a patent from those other complimentary assets that are being transacted over?

The problem that Iain points to, this problem of sort of not having enough study in this area, it just reminded me of a conference that both Polk and I were speaking in at Berkeley on patent valuation, and two things were clear.

One was that although they really tried to get people that were best able to say something about empirical evidence, about the prices of what's going on out there, there's almost nothing. There is almost nothing, and I had gotten up, and as part of my presentation, I offered some evidence that was collected in Europe from some colleagues of all of ours on inventor surveys, and I have a lot of problems associated with inventor surveys.

And there was a large amount of criticism of using inventors as a source of information as to what the value of what these things are, but nobody was able to come up with a better way to collect information and certainly no one was there that was actively involved in these transactions that was either willing to validate or undermine with real numbers whether any of the information that was presented was reasonable near the

mark or off the mark.

MS. MICHEL: Does anyone have any thoughts of something, the government collecting in an aggregate, genericizing, respecting confidentiality on data, doing something less than collecting every licensing agreement, which sounds like a monumental task? Is there something that could be useful and yet not go that far? Iain?

PROFESSOR COCKBURN: Well, a tempting but surely dangerous analogy is to think about real property, and one of the -- real estate markets seem to function pretty well most of the time. They have a public land registry. Every transaction is posted and priced - and of very heterogenous tracts and so forth.

I don't know that -- what would be the burden? You've been given a public grant of a piece of property by the Patent Office. All kinds of obligations go with that, the obligation for the patent owner to post back in confidence to the Patent Office or to the IRS or somebody the nature of the payments associated with that piece of intellectual property, in my view probably aren't that burdensome nor would there be a particularly large burden on which ever government agency is charged with doing this to do something like just aggregate them up to the level of patent classes for the last quarter

and just report.

We report employment numbers. We report pork bellies. We report all sorts of things. Knowing what the aggregate value of the mean price or something like that at some reasonably fine grain but not so fine grained as to really damage interest of the patent holder. I don't see how that would be that difficult or that costly.

MS. MICHEL: All right. Any other comments on that topic?

All right. Let's talk about the independent invention defense, and is this a concept that applies more for one of the other markets I talked about, the market for clearing patent rights, transferring patents just for the purpose of acquiring freedom to operate. This is obviously not a defense that's going to be so applicable at all when you have the biotech company transferring rights to the bigger pharma company.

So in thinking about that market for patent rights for the purposes of freedom to operate, what sort of inefficiencies do we experience there? Why might we need the independent invention defense? I want to think a little bit about how that market operates.

Any thoughts about -- is it facing the same problems in the sense of ambiguous patent rights and

failure of notice. Stuart?

PROFESSOR GRAHAM: And I'll make this short. I'm not going to comment on that *per se*, but what I will do is add some gloss to the question of freedom to operate. Time and time again when I was interviewing venture capitalists associated with this survey that we're doing -- because we did a lot of careful background work before we set up the survey. They were telling me, time and time again, that the most important reason why they wanted the firms in which they were investing -- the portfolio companies that have patents, was to ensure that they had freedom to operate, room to operate on the theory that they said they were investing in people.

Yes, sometimes they were investing in technology, but actually from what I heard that wasn't par for the course. Generally they're investing in people and an idea and a direction. They knew that these people would have to have room to innovate towards the market, and that's the role, at least, in the lines of the people that I spoke with, that patents were playing when they wanted the folks to have them.

So this idea of having freedom to operate particularly for these young entrepreneurial technology entrepreneurs is one that's -- it's needed.

MS. MICHEL: So, in that sense, is that patenting

so someone else doesn't or patenting for a defensive reason?

PROFESSOR GRAHAM: Well, again the way in which that role for patents plays with the idea of an independent inventor defense is an interesting one.

MS. MICHEL: Okay. Iain?

PROFESSOR COCKBURN: I've actually heard the different things from VCs and also I think there's some work being done on this by David Hsu and Rosemarie Zeidonis for example, one thing may be venture capitalists don't understand that a patent is not an affirmative right. I actually think that's not the case.

Now, getting a patent issued, of course, doesn't give the enterprise necessarily some clear space to operate. What some of the studies being done seem to suggest, and what I've heard from VCs is that fighting for a patent demonstrates something -- there's a certain amount of validation with the technology that, at least, it got over the hurdle of the overworked and under informed patent examiner.

But, more often, they're looking -- there's a signal that means the principals in this company know how to play the game, and there's a signal of the maturity or the sophistication of the enterprise as much as anything

else in some circumstances.

I think that much of this problem is all the same problem, whether we're talking about uncertainty surrounding patent rights or anything else which is in -- my two word or third word summary of it is I call it the "no midline problem." That is to say many technologies have this difficulty that they're not codified, searchable or well-defined from the perspective of anyone in the system, whether it be the applicant producing prior art.

They're not quite sure what might be relevant to their invention. The examiner is not quite sure either, nor would be another party to a transaction. The single exception to this, I think that holds in mechanical, electrical, business methods, software, all kinds of technology domains, nobody is quite sure what it is.

The big contrast is biotech, biomedical or chemical carts where there's no ambiguity about what a molecule is. These are very well defined, and anybody in ten minutes, I exaggerate, but very quickly can go to the technology that's exhaustively indicated as a very standardized vocabulary, is very easily searchable, and that clarifies the nature of the rights for everybody, and there's a lot of that uncertainty.

MS. MICHEL: Does that suggest that as the IT

industry or the software industries develop and standardize their own nomenclature just as a matter of engineering that could help? Polk, you're nodding.

PROFESSOR WAGNER: Sure. I think I would definitely expect that as these industries mature, you're going to see a lot more. It's just sort of a classic story, which is as it gets more worthwhile for these industries to have these sorts of systems in place, you're going to see them emerge because there are substantial gains that outweigh the cost of doing them.

And we need to remember that we are in IT and business methods or a lot of these software areas. This is still a pretty immature industry in a lot of ways, particularly their experience with patents because in many cases these industries were not active participants in the patent system until just the last decade or so, so these are quite young entrants to the patent system so we shouldn't expect them to be as well ordered as they should be -- as some of the more mature chemical bio areas.

So I think there is reason to be hopeful that we can get our hands around that problem better, never be perfect but we can certainly do better.

MS. MICHEL: Sam?

PROFESSOR VERMONT: Well, yeah, I think we can

expect some standardization of the nomenclature entities that it can better, but it may not ever get close to being good enough. For molecules, the nomenclature is uniform and universal because there's only a certain amount of elements. There's only a certain number of ways that bonds can form. There's only a certain number of structures.

In the mechanical arts we, of course, have a bunch of terms - but not that many. And it may be that software is along the lines of the mechanical arts, so there would be so many possible different things that you could make there would be no point in naming them all separately because you wouldn't know what those names are.

So it's not a guarantee.

PROFESSOR WAGNER: But software people talk to each other in a fairly -- in a sense software is communication with each other. This is what you do when you're communicating to a machine and so you're using a very standardized set of languages, so I guess I agree with Sam, that certainly there are reasons to understand why we see most of this development in bio and chem because that's sort of the low hanging fruit where there's a relatively finite set of possibilities.

But I don't think we should rule out that for

software or say you can't get there - because it's a very predictable area of technology that people understand. Yes, there's a huge range of applications, but the way people talk about it is in a very structured format so we should be able to do a lot better than we are doing.

MS. MICHEL: Stuart?

PROFESSOR GRAHAM: So we face the double whammy because not only is the language imprecise, even if it is improving, but also marketable products in this space have many more patentable inventions embodied in them. So you get this -- both effects going on at the same time so not only are you enjoying the specificity of language around bio-pharma, but there's one or a handful of products in an ANDA or patents in an ANDA.

But maybe this will all be solved because as the nanotechnology people tell me all technologies are converging, so if that's the case, then we will all be saved in the long run.

MS. MICHEL: All right. This morning we talked a lot about IP markets, patent markets that involve auctions and brokers defensive buying clubs and all sorts of things which seems to have less to do with developing new products and more to do with transferring the patent right.

Is that your sense of what those sorts of secondary patent markets are about? Do you have any opinions whether the operation of the secondary patent markets -- what kind of effect that has on innovation? Is this something that we want -- are these efficient markets? Do we want them to be more efficient? Is that going do help innovation somehow? Polk?

PROFESSOR WAGNER: I think the easy answer is we just don't really know. Although I was struck by this morning's discussion in the sense that there was almost no discussion of how the secondary market influenced the decisions with regard to inventions, innovation, patenting itself because you would think that -- now the fact that people have good information about what kind of houses or cars sell well is a huge factor in people's move decision-making about what kind of cars to build, to create, to sell.

And there was almost zero discussion about how this would feed back into that market, which I think that was in a way telling and maybe in a sense a little bit disappointing as well because it then does suggest that these are either not thick enough to provide any meaningful information useful to make decisions upon or the activities that are going on now are primarily based on trading rights around rather than the actual

innovative activities that we would hope they would be doing. I think it's too early to tell though and draw any really significant conclusions.

MS. MICHEL: Okay. Stuart, did you have a comment? No? Iain?

PROFESSOR COCKBURN: There are many things -- many things go on when we think about the impact of these markets -- one of which is if it could serve to meaningfully simplify getting freedom to operate, allow for some rearrangement of these rights, of existing rights or existing inventions into the hands of those best able to exploit them, all the things that we think that a market, the more transactions would do, that I think can all be -- clearly generates efficiencies.

The question of the immediate impact on incentives to invent I think is really difficult to answer for all the reasons that we still find it very difficult to answer whether or not stronger patents generate more invention. I mean, the empirical evidence on this, most people kind of believe that there is a connection, but demonstrating it is surprisingly difficult.

A lot of inventive activities seems to go on in which patents are an afterthought, and I think that it's just very difficult to determine this.

MS. MICHEL: If we make a distinction between invention, coming up with the idea, reducing it to practice sufficiently to get a patent on it, and I'll define innovation for these purposes as taking that idea, doing all the development necessary to get a commercializable product, how does that distinction help us think about how the secondary markets might be creating incentives to invent?

It seems that if you're creating a market for a patent, you are perhaps creating incentive to invent. Does that make sense to you?

PROFESSOR WAGNER: Is there a tight correlation between patents and inventions? I think what many patent lawyers would say is not necessarily the case.

PROFESSOR COCKBURN: You're creating an incentive to create patents.

PROFESSOR WAGNER: So that's clear. Now, whether that's the incentive you actually want to create is a different question.

MS. MICHEL: And so then the innovation, the additional steps needed to create a new product, any thoughts? The reason I'm bringing this up is, Iain, you were using the word invent when you were talking rather than innovation, and I am wondering if that was intentional, and if you are making a distinction between

invention and innovation and the effects of these markets on innovation.

PROFESSOR COCKBURN: It was intentional. I think that the lamp post under which we look for our keys in most of these debates is the bio-pharmaceutical area where it's clear that well defined patents are absolutely essentially for the innovation part of the process, not just realizing the technology to practice as a prototype but getting it into a saleable product, and without the patents it is very clear I think that the level of investment in R&D and the progress of science and useful arts in that area would substantially slow down.

Almost everywhere else in the economy, the other methods of appropriation seem to be the most important, and that's why we still struggle to find this link between IP rights and incentives to invent because everywhere else people rely upon fast cycle times, brands, manufacturing capacity, preemption of scarce assets, so on and so forth.

MS. MICHEL: Right before we wrap up, I would like to move to the independent invention defense idea the idea that if a manufacturer of a product has independently come up with the idea with no knowledge of the patent, should that be a defense to infringement?

Any thoughts on what that might do to the value of the patent or whether it might be lower the cost of getting those products to the market? Good idea? Bad idea? Any thoughts on that? Sam, I was interested that you moved your idea from a legislative idea to a more fine tuning the court's idea. Was that a practical reasons for making that choice?

PROFESSOR VERMONT: Well, yes, two. Two reasons, one is practical in that it doesn't seem that politically feasible at the moment, and secondly I became more convinced that the independent invention defense or taking the law into account is a good idea, and therefore I became less worried about incorporating it, for example, into the obviousness standard, which could result in full invalidation of a patent.

MS. MICHEL: Iain?

PROFESSOR COCKBURN: It's easy to conflate this with prior user rights.

MS. MICHEL: Yes.

PROFESSOR COCKBURN: I think we do have an interesting data point in the one place where there is a prior user right in the U.S. is business methods. Yet we heard this morning that J.P. Morgan and all are still paying out 4 or 5 hundred million dollars a year.

If that's the case, then it appears to be -- the

issue of an independent invention defense or prior user right seems to be kind of irrelevant.

PROFESSOR WAGNER: I guess I would second that. Certainly our experience with the prior user rights, so far, has not been to the degree that we thought that it might have an effect. On the other hand, a lot of what Sam was talking about is, in fact, a broader conception of not merely just -- at least as I understand it -- that proposal is not merely an explicit defense, but more sort of taking account of a very sort of rapid follow-on invention that was not a copy throughout various parts of the patent system, and I think that is an interesting proposal.

I mean, I would want to think about it carefully in terms of the incentive at each step, but that I think is a way of getting at some of the information that we want to understand, the meaningful information that we get from the fact that somebody independently invented the same thing at essentially the same time without actually having knowledge of this other thing, of the actual patented invention.

That's important information that strikes me that we probably want to take account of somewhere, whether -- I'm a little skeptical as to whether an explicit defense is either wise or ultimately going to

make any difference, but it's possibly we could use it elsewhere.

MS. MICHEL: Sam?

PROFESSOR VERMONT: So, the prior user defense may or may not be merited, but it's really not a close substitute for a re-invention defense or an independent invention defense. The prior user is only going to be the first inventor, and so under current law if someone else invented first, then that patent is probably invalid.

If we gave prior user rights, if we allowed prior user rights, then we would essentially be allowing trade secret holders to avoid the current law, which is if someone re-invents later and gets a patent and they can prevent you from your use.

So prior user right is actually quite different, and because it only applies to things prior. It just encompasses a much smaller number of parties.

MS. MICHEL: Okay. We're about out of time. Polk, on portfolios, as I bring up one point, it seemed that a lot of the discussion we had earlier about creating more clear patents for notice reasons were also a lot of the same thoughts that you had in your paper about encouraging patentees to pursue higher quality patents rather than quantity patents.

Does that seem correct to you?

PROFESSOR WAGNER: One of the ways I think about the reasons that people get portfolios -- and I think going for low quality, high volume is just the information cost problem, is that they just cannot be certain about investing in any particular patent, and therefore they don't, so what they do instead is get as many patents as they can because that is the best balance between cost and benefit that the current system allows.

If we moved to a system where there was more certainty, better rights, maybe even if we moved to a system where there was a much more robust market for individualized patents and, therefore, you could get a real value associated with a particular patent, then you might see less people going for the big portfolio, and that would change the incentive effects, I would think rather significantly towards getting more -- carefully doing more high quality patents.

And I think some of the things that Stu has seen and others who have done research show that where patents -- individual patents matter a lot -- so certain industries, it matters a lot. Certain kinds of companies, small start up companies, they tend to matter a lot. There you see them getting fewer, spending more.

The metrics of quality -- although these are all sort of very blunt metrics of quality -- are generally higher in those areas, so I think that's explainable on grounds that they have a different kind of strategy than the big firms that are dominating in the patent system right now.

MS. MICHEL: Stuart?

PROFESSOR GRAHAM: I was actually thinking of a specific example as Polk was giving his presentation. When I was in Vienna last year, I saw a presentation by one of the former chief economists at the EPO, Bruno van Pottelsberghe, and he had taken a look at Research In Motion's portfolio – the EPO portfolio, prior to the NTP litigation and thereafter, and it follows your story.

Prior -- well it follows a story. Prior to the litigation event, they had few high quality, quality on all the measures that Iain had mentioned before that we as empirical scholars look at, citations, countries designations, family, blah, blah, blah, and the patents that were coming out of the EPO after the event were much more numerous, but much junkier quote, unquote.

Now, is this because they grew or because of this event? It looked like there was a significant break at that event that made it look like they were

following a different strategy at least in the EPO.

What I thought of was that this was -- this is something I saw in early work that I did with David Mowrey while I was still a graduate student. We were looking at the patenting by the then primary large package software firms, Microsoft, Adobe, Symantec, and had been looking at patenting over the long haul, and we noticed something that in the early 1990s, Borland was patenting per R&D dollar at an order of magnitude more than ten times what anybody else was doing.

And it seems like this was a response to the famous Borland/Lotus litigation over copyright. Having said that though, I never looked at the quality of those Borland patents, so were they doing a large number of high quality patents or --

PROFESSOR WAGNER: Given that their patent intensity was so high it's unlikely.

MS. MICHEL: All right. Any last comments, and we'll wrap it up? Iain?

PROFESSOR COCKBURN: There are two T words not to bring up in any of these debates, one is troll and the other is thicket, and I think that some we haven't had time to talk about, but in my view is a very important issue is how to transact into in the midst of a patent thicket, and a thicket is understood as a large

number of patents, a large number of rights, potentially overlapping, held by numerous people, interwoven in a way which is very difficult.

And I think that when we think about these secondary markets working either for a nicely bundled up portfolio of patents or for a single patent, one of the things that's going to make it work is there's one clearly defined owner and one person to transact with -- the thicket problem is one of multiple owners, fragmented ownerships and work by Rosemarie Ziedonis, some that I've been doing with a colleague. Megan MacGarvie's on thickets and software, Mark Shankerman and some other people.

I think there's a lot of new scholarship and interesting and provocative questions raised by the transaction action costs associated with thickets.

MS. MICHEL: What are you seeing?

PROFESSOR COCKBURN: One of the things that we are seeing is - Megan and I have been working on entry and financing of start-up software ventures, the data showed to us that thicketed markets are ones which are very difficult to enter, where when you're a new enterprise, it takes longer for them to raise money from outside investors. It affects their ability to get a liquidity event, an IPO later, and most of these studies are

pointing to these thicket problems understood as the difficulty in the list of people that you would have to go to if you wanted to license your way into a market -- how many entities would you have to go to? How would you collectively solve the problem of obtaining a license to all of those rights?

I think that's at least in these narrowly defined contexts that people have looked at it empirically it does seem to be a significant problem.

MS. MICHEL: Have you looked at or seen or thought about the problems faced by a new entrant in that situation who does not have its own large patent portfolio? Is that a special problem?

PROFESSOR COCKBURN: I don't know about a large patent portfolio.

MS. MICHEL: Or a small.

PROFESSOR COCKBURN: The thing that jumps out to us from these studies is that the entrants who arrive at the market with their own patent are significantly advanced relative to those who don't. That generates the sort of powerful dynamic in the way the data show us these accelerating counts of patents in every -- no matter how granular you get, how finely defined the market is. It's an exponential increase that's driven by powerful incentives for the incumbents to acquire

patents.

If the entrants can't get in without their own portfolio, you can see this feedback affect is one of the things that drives this acceleration, and I think ultimately raises the costs for everybody.

MS. MICHEL: And then, Stuart? Do you have a comment?

Have you seen or thought about -- something I think we heard this morning was that after this event happens, this feedback loop happens, you sometimes then see the companies selling off their patents into the secondary market again, and we have another kind feedback loop.

PROFESSOR WAGNER: I don't know. That's because the brokers we're talking to -- so I'm not sure how much we know about this. The secondary markets are still extremely small compared to the number of patents that are obtained every year, so I'm not sure we could generalize this sort of swinging effect that was mentioned today.

I mean, certainly there are going to be some players who once they've achieved some sort of technological goals then bail out and sell their patents, and we certainly have examples of companies who do that. On the other hand there's an awful lot of

companies that I think a ton of research shows are just getting as many as they possibly can as quickly as they can.

MS. MICHEL: All right.

PROFESSOR GRAHAM: I've sort of seen, anecdotally, that this happens. I've been looking through the patent reassignment data which is notoriously just not good. This is from the US PTO, but every once in a while when I'm looking at pharma patents, I'll see just an entire chunk from a company sold to L'Oreal or something. So over into the cosmetic space, some stream that didn't pan out or whatever the case was, and just abandoned or sold out, so something is happening. I don't know what.

MS. MICHEL: One question. Why is the assignment data at the PTO not good?

PROFESSOR WAGNER: There's no requirement. People don't file their assignments. I think they're technically supposed to. Actually I think there is a credit. They just don't -- there's no enforcement. I think the problem is there's no actual enforcement mechanism. They're supposed to keep their assignment and keep the PTO up to date, but I think the sense is that the vast majority of people just don't it or it's late.

PROFESSOR COCKBURN: Doesn’t work like that with

the land register.

MS. MICHEL: Okay. And with that, thank you very much to our panelists. This has been a very interesting discussion for us. We appreciate it. If anyone heard anything today that they would like to respond to, the FTC will keep open its comment period until May 15th. We're happy to take comments which we will take consideration as we launch into the next step of preparing the report when we conclude this. We will be in Berkeley at the Beckley Center for Law and Technology and the Competition Policy Center on May 4th and 5th. Thanks very much.

(Applause.)

(Whereupon, at 4:31 p.m. the workshop was concluded.)