

**Patent Assertion Entity Activities Workshop  
Transcript, Part 1 of 4**

**December 10, 2012  
9:00 AM (Start) to 10:30 AM (Morning Break)**

**NOTE:** This transcript has not been completely proofed and is intended to be temporary. A final version will be posted soon.

SUZANNE MUNCK: Good morning, everyone. Thank you, very much for coming to our workshop. My name is Suzanne Munck, and I'm the Chief Counsel for Intellectual Property for the Federal Trade Commission. If you have any questions throughout the day, please ask me or my DOJ colleagues Erica Mintzer and Frances Marshall. Or my FTC colleague, Jessica Hoke. Or really anyone at the front desk.

And speaking of the folks at the front desk, I'd like to thank them, very much, for all of their hard work at getting everyone checked in. In a few minutes, I'm going to introduce Chairman Jon Leibowitz. But before I do, I have a quick security briefing.

So anyone that goes outside the building without an FTC badge will be required to go through the magnetometer and x-ray machine prior to reentry to the conference center. Please keep your conference badge with you throughout the day, especially when you leave for lunch.

In the event of a fire or evacuation of the building, please leave the building in an orderly fashion. Once outside of the building, you need to orient yourself to New Jersey Avenue, which is just right out here. Across from the FTC is the Georgetown Law Center.

Look to the right front sidewalk. That's our rallying point. Everyone will rally by floors. So it would be if the entire building were evacuated, we will all just stick together. You need to check in with the person accounting for everyone in the conference center, I think that's me.

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So it is now my pleasure to introduce the Chairman of the Federal Trade Commission, Jon Leibowitz. As you will hear, Chairman Leibowitz is a true believer of the work that the agencies do at the intersection of Competition Law and Intellectual Property. And he's been a very enthusiastic supporter of this workshop. Now I give you Chairman Leibowitz.

[APPLAUSE]

JON LEIBOWITZ: Actually, Suzanne, I repudiate everything you said about me. This is a great audience. This is a terrific audience. I can't recall-- Kim, can you recall the last time on a patent or competition matter that we had a full house like this, in a overflow room?

KIM: No.

JON LEIBOWITZ: Kim cannot recall, and she is the voice of experience, although very, very youthful. Good morning. On behalf of my colleagues at the FTC, including Commissioner Edith Ramirez, and the Department of Justice, I am thrilled with the overwhelming response to this workshop, both among all of you in the audience today, and those of you, I gather, all over the world who are watching a webcast of this event.

A little over two years ago, the FTC, the Department of Justice, and the PTO, Patent Trademark Office, gathered the public in Alexandria, Virginia to explore issues at the heart of Competition and Patent Policy-- the patent application backlog, permanent injunctions in district courts, and at the ITC, standard setting in patent rights.

By working together with our sister agencies, we increased our understanding of these issues. And here at the agency, we use this knowledge when deciding, for example, to weigh in at the ITC on the issue of injunctive relief for standards essential patents when a RAND commitment's been made.

Judge Posner later relied on the FTC's analysis in his decision to dismiss the case between Motorola Mobility and Apple. And I don't think he did that just because he used to be a law clerk at the Federal Trade Commission. Although it could be, but I don't think so.

Patent issues, as all of us in this room know, raise a minefield of problems. Poor patent quality tips the balance between exclusivity and competition. Unclear scope and poor notice hurts innovation. In recent years, though, we have begun to see improvements.

Congress incorporated our recommendation for a more streamlined post grant review process in the American Invents Act, a less expensive means, short of litigation, to challenge patent validity. The Supreme Court expanded the standard for invalidating patents on obviousness grounds, opening a channel to improve patent quality.

Joining Congress, the antitrust agencies, and most economists, the Supreme Court rejected the presumption that patents alone convey market power. Similarly, when the Supreme Court issued its eBay decision, it ended an almost automatic injunction rule for patent infringement.

EBay's thoughtful equitable test now provides a critical framework to address a myriad of injunction issues, including those involving FRAND-encumbered SEPs, an area where you have probably seen that the FTC took action late last month. And an area where you may see more activity soon. Very soon, actually.

Today, we look at the related issue, though, of PAE activity, Patent Assertion Entity activity, and its impact on innovation. Put simply, what, if anything, can the agencies do to promote

competition? And should we do anything? But before we dive into what, I'm sure, will be a lively debate, let's talk for a moment about acronyms. And here in DC, of course, who doesn't love a good acronym?

So we are looking today at PAEs, or Patent Assertion Entity activity, not the more general non-practicing entity, or NPE activity. The term NPE includes any entity that does not manufacture or sell products that use it to patented technology. For example universities.

So they conduct research, they patent their innovations, and they work with companies who seek to include their technology to improve products. By contrast, PAEs focus on purchasing patents from existing owners. PAEs make money by licensing the intellectual property to, or litigating against, manufacturers who are already using the patented technology.

Acronyms aside, we all know a few colorful street names for PAEs, but we are not going to use any of them today, I hope. Because here, as my former colleague, Bill Kovacic used to say, former Chairman, we are but seekers of the truth. With that in mind, here are some truthful facts.

It is clear that PAE activity is a growing issue in the United States. There were more than 4,000 patent lawsuits filed last year. James Bessen and Michael Meurer report, or at least they believe, that PAE generated activity, the PAE generated revenue cost defendants and licensees \$29 billion in 2011, a 400% increase from 2005.

They calculate that no more than 25% of this flowed back to innovation. Almost like lobbying in Washington DC. And by the way, I used to be a lobbyist. 75%, they claim, is dead weight loss. And let me exclude from that list, where's Manus, Manus Cooney?

MANUS COONEY: Over here.

JON LEIBOWITZ: You're over there. Not dead weight loss. And of course Mr. Hand, Mr. Lloyd Hand, certainly not. Later today we'll hear a discussion on this point. Of course not a discussion about-- I blew my joke and it really troubles me. But, of course, not a discussion of dead weight losses as it relates to lobbying, but as it relates to Patent Assertion Entities.

Another truthful fact. Congress is beginning to pay attention to PAE related issues. The America Invents Act directed the Government Accountability Office to study the costs, benefits, and consequences of PAE litigation, and to recommend how to minimize any negative impact. And that's a quote of PAE litigation. The GAO report will issue shortly. And like many of you, we are eagerly interested and awaiting the results.

Yet another truthful fact. One of our panelists, Robin Feldman and her colleagues who contributed to the GAO study, report that PAE lawsuits are on the rise. Five years ago 22% of all patent cases were filed by so-called patent monetizers. In the most recent year, this number increased by almost 40%.

Now most of these cases settled before summary judgment, but of the five entities in the sample who filed the greatest number of lawsuits in the period studied, four were patent monetizers. The study also found that universities accounted for 0.2% of the cases in this sample.

That means of all the patent litigation occurring, PAEs bring almost 40% of these cases. And they settle, generally, before determination on the merits. And it makes you really wonder whether we are witnessing a developing sort of combination of a plaintiff attorneys, and a new surge of patent rights that may very well drive us off a patent cliff.

Another recent study found that when PAE suits proceed to merit judgment, PAEs lose 92% of the time. And that, to my mind, is just astonishing. Now, even if you're not bowled over by these statistics, it is clear that the time has come to think very, very seriously about PAE activity and its consequences on society.

What is to be done? That's a harder question. Now, the FTC has a number of tools in our arsenal should we decide to use them. We can bring enforcement actions based on violations of the antitrust laws. Our Section 5 Authority prohibits unfair methods of competition, which is slightly or considerably broader.

If a party engages in misrepresentation, we can use our authority to stop unfair acts or practices. We considered this approach, as some of you know, but did not use it, in our recent consent. In addition to enforcement authority, we have a number of policy and advocacy tools readily available.

For example, the FTC will continue to recommend improvements to patent notice and remedies, and to address issues with the patent system that may encourage PAE related harms. We also have rule making authority on the antitrust side, for example, to require more disclosures of patent ownership. Although we have not exercised this authority in a number of years.

So today, we're going to learn more about these issues in a very thoughtful way. We're going to begin by of presentations by Colleen Chien and Carl Shapiro. Professor Chien will explore the increase in PAE litigation, and the legal framework behind the PAE licensing model. Professor Shapiro, who we are always delighted to work with, will outline the economic framework of PAE licensing, exploring ways in which PAE activity seeks to maximize revenue from IP transactions.

After they set the stage, we will gather industry representatives, in our first session, to hear their real world experience. And I think that's critically important. Panelists will include Patent Assertion Entities, large and small operating companies, defensive aggregators, and members of the open source community.

The panel will explore questions such as, how do operating companies decide to transfer IP to PAEs? Do PAEs facilitate the transfer of patent rights? What is the reaction of operating companies to PAEs when they seek to license or litigate their intellectual property? What do defensive aggregators play, what role, in this model?

After lunch, we're going to hear from Stuart Graham, the Chief Economist of the United States Patent and Trademark Office. And I'm especially glad Stu has joined us today. He's going to address the PTO's efforts to improve transparency, concerning the ownership of patent applications and patents.

And, by the way, look, I am just a government bureaucrat, but let me just ask you this. Why is it that there's no disclosure of real party in interest information of all patents in applications? I mean, I really just absolutely wonder this. Not with respect just to Patent Assertion Entities, but with respect to any patent holders at all. It just doesn't seem right to me.

And I commend the PTO for holding an upcoming roundtable on this topic. And to the extent of that panelists can sort of answer this question today, I would really like to hear their explanations. And, by the way, there are some companies, including Patent Assertion Entities, like Mosaid, for example, who do disclose their patents. And good for them. But I think a more increased disclosure regime might be an improvement from what we have now.

In our second session, we're going to examine the potential efficiencies and harms of PAE activity. Supporters of the PAE business model believe that's at PAEs promote invention and investment in R&D by reducing transaction costs, managing the risks of monetizing inventions, maximizing revenue, and compensating small inventors.

Not surprisingly, others believe entirely the opposite. That PAE activity imposes a virtual tax on innovation and undermines the ability to develop incentives to engage in R&D. Detractors also raise concerns about operating companies transferring IP to PAEs as a means of raising rivals costs, or engaging other anti-competitive conduct.

Some of that, I suspect, may have to do it asymmetrical discovery. Some, it probably has to do with rivalry in the marketplace. But if it's happening, it seems, at least to my not entirely educated mind on this issue, kind of unsavory.

Finally, our last session brings together academics and outside counsel to discuss whether Competition Law can play a role in enhancing the potential efficiencies and reducing the potential harms of PAE activity. The Federal Trade Commission and the Department of Justice value you're very important input on these very important issues.

We're holding the public comment period open until March 10, and actively do seek your observations. But for right now, we just look forward to learning how the agencies can be constructive in this area. That's how we determine whether we need to do more, whether we need to do less, or whether we should let the marketplace sort itself out, which is often our preference.

And with that, I will stop bloviating. And Suzanne, do I turn it over to you? Or do we just bring Carl and Collen up? How do you want to do this?

JON LEIBOWITZ: OK. Come on up. Thank you, so much.

[APPLAUSE]

PROFESSOR COLLEEN CHIEN: Good morning, everyone. It's a pleasure to be here. And quite an honor. Thank you, Chairman Leibowitz, Suzanne, Frances, and others for inviting me here. I'm here to start the day by providing some information about Patent Assertion Entities.

I have a reputation with talking quickly, and I have 80 slides. So I'm going to try to go through them as efficiently as possible. But if you do miss something, I have uploaded them to SSRN, if somebody out there is interested in following along. So I just wanted to mention that.

OK. So today is going to be really interesting. I think we'll have a lot of different perspectives about Patent Assertion Entities. And I want to just echo Chairman Leibowitz's comments about what our focus is today. So let's start with Justice Kennedy in eBay, where he talked about Patent Assertion Entities. He didn't call them that, but he talked about firms that use patents, not the traditional sense of supporting goods and services, but for obtaining licensing fees.

And that's a definition the FTC adopted in its report. And I think to simplify it, we can think about a company or an entity if it's an individual, that asserts patents on existing products as a business model. So generally we think of patents as coupled with products. Patent Assertion Entities have been able to break that link.

And this definition, I think, allows us to distinguish Patent Assertion Entities from other types of NPEs. So if we're talking about universities, or startups, they're not focused on existing products, but hopefully having their technology become future products.

If you're talking about aggregators, or corporate monetizers, again, their business model is not focused on patents, although they may do that as part of their work. So we're really talking about the inventor monetizers, and special purpose patent monetizers who may incorporate and hold patents, as Chairman Leibowitz already referred to.

And why is this business model so interesting? I think we need to give that a few minutes. Chairman Leibowitz said the word unsavory, and I think that word is used to describe PAEs, but probably in an inaccurate way. What I think is so interesting about the business model of PAEs is that they really change the economics of patent litigation, which are, to be honest, stacked against enforcement, and against small plaintiffs.

What do I mean? Well as we all know, it's very expensive to bring a patent lawsuit. It can cost you \$1 million to pursue a suit that may only get you \$200,000 back in a judgment or settlement. And that's only direct cost. If you actually are in the marketplace, it's risky to bring a patent lawsuit, because you might invite a countersuit. You might also suffer your reputational or disruption.

And you could see how the costs start to be staggering in comparison to the money you may yield. This is not a good business model, bringing enforcement under the traditional patent litigation economics. And because of these high costs, we have a high level non-enforcement of patents.

RPX has estimated that 250,000 patents cover smartphone technology. Even if we take a tenth of those, that's still 25,000 patents. And even though we have a lot of smartphone litigation, that's nothing compared to the amount of litigation we could have potentially. So only a tiny fraction of patents are actually enforced. What PAEs do, though, is fundamentally change these economics.

Because they don't make anything, they don't need to worry about indirect costs, such as countersuit, reputation, or disruptional impacts. Because they use contingent fee lawyers, they can save on their direct costs. Lawyers are estimated to be 75% of the cost of bringing a suit. They also can be using the same patents and the same venues to capture these economies of scale, and further drive down the cost per assertion.

When we view it that way, then, we can see how PAEs have really changed their dynamic, and made it economical both to bring suit, as well as to settle a suit. So if you look at the cost of defense, which is similar to the traditional cost of offense, you can see that there's a wide range of prices in which it's more attractive to settle than to actually go and take the case all the way.

And this is a traditional model that's been used in tort litigation, and is a well studied in other contexts. Even if it's a high value suit, you still have a wide range of settlement. Here, I think, it's harder to get these high value judgments, so it's more like a lottery. But you can see how this dynamic can be effective and really make it very different.

So I think the moniker, which we're not use today, has been used. I'm going to put it on this board here. I don't think it's appropriate, because what patent assertion really is, is a path breaking and disruptive technology for monetizing patents that eliminates traditional obstacles to enforcement. And for people who don't have access to enforcement, it gives them a chance to do that.

It's also completely legal. It uses the patent system in the way that, in some sense, the patent system was intended to be used, as an exclusionary right. Patent Assertion Entities are also on the rise. As Chairman Leibowitz referred to, with respect to Feldman, Jeruss work, there has been an increase over the last five or six years.

Using data from RPX, which I will talk about a little bit more later, we see that this number has jumped up, to now 61% in 2012. So if we just take a minute to think about that. That means that the majority of suits in patent litigation that are being brought now, are being brought by entities that don't make anything, by Patent Assertion Entities.

So what is patent assertion? It's this disruptive technology, I believe, that represent the majority of new patent cases. And for every lawsuit that there is there are many demands. So we don't really know, actually, the full impact. So one highly respected sell-side patent broker estimated that for every lawsuit filed there are 25 to 50 other demands made.

In a recent filing, the estimate was made on one particular campaign, that 8,000 letters were sent for 26 cases, which is a ratio of 307 to 1. Other people that I've talked to have mentioned campaigns that involve no lawsuits, but many, many letters. So it may be even greater to zero.

We don't really know the answer. But what we probably know is that most patent fights are not conducted in public. And those are, and even those that aren't, are often resolved under NDA. So what this produces, then, I think, is this ground breaking technology that is increasing the rate of enforcement about which we don't really understand the consequences, good or bad. And so that's why I'm really glad that we have this chance to talk about these issues.

So now that we know what we are talking about, to some degree, the view that I'm going to present today-- I think everyone is going to have their own perspective-- is one that's empirical and descriptive, but it's also motivated by policy concerns. And so here are some of my sources of data.

I've also gotten data from, or referred to website information from Intellectual Ventures and Acacia. In particular, I do rely heavily on data from RPX. And because of that I want to kind of talk about that data a little bit. And Mallun Yen is here from RPX, and they've been very generous in giving access to this data to me.

And when we compare that data to the Feldman, Jeruss work that was done for the GAO, we want to kind of see, does it skew in one way or another? And when you do the comparison side by side, you see that some years RPX has been higher. If we compare it to patent monetizer, both actual and suspected, versus the PAEs that RPX has tracked.

But on average, some years were higher, some were lower. Net, on average, RPX does skew a little bit higher, about plus 1%. So you should use that to take that into account when I show the data from them.

I'm also going to be drawing upon data that I've done in a survey, which was not random. But then some other work that I've done more recently, which some of those issues have been dealt with. So I'll be referring to different data sets as we go along today.

So what I'm going to do is talk a little bit more about economics. I want to talk about startups, in particular, because that's one of my areas of research. I'll talk about policy. And then a little bit about making the case for monitoring, or research agenda going forward.

So I think it's important to walk through what it is like to be a Patent Assertion Entity. I don't have experience doing this, but I have done a lot of interviews, and thought about what it means to be, and build a business around this.

And when you think about it, you have to first have the asset in some form, either by buying or building it. You've got to pay money for that. You're not get any money in. You've got to get financing to finance your suits, as well as build the case. Figure out what product out there might be infringing, and the ones that you might be able to go after.

When you start to bring your assertions, then, you start to get settlements. And as you continue to bring assertion campaigns you get more settlements. So we see that this is, in each of these cases, you're going to capture economies of scale.



The first case you bring will probably be the most expensive. You're going to have to figure out all of your theories, think through all your experts, and figure out what you're going to do. But as you go on, if you're successful, you're able to capture these economies of scale by asserting over different defendants.

Now this is a risky business model. When I went back and looked at the public NPEs from just a couple of years ago, a lot of them had already gone out of business or changed form. There's no guarantee you're going to succeed. So you may never get your investment back. You may only get through the first two of these.

But I think it is important to see that the economies of scale are what drive this business model and make it economic. And if we consider the NPEs that are out there, we see that most are taking advantage of this economies of scale type of business model. The majority of defendants are sued by a PAE who has named more than 15 defendants over two or more suits.

So we're not talking about PAEs as being one-off players, but rather those who have brought several cases, most cases, and over many defendants. And when we think about the defendant distribution, we also hear most from companies like Apple and Google.

And if you can look at this graph, what it represents is on the y-axis, the log revenue of the defendant, and on the x-axis, the number of litigations that are brought, on average, per year. So again, when we look on the top right, we see the companies that are making a lot of money, and are sued over and over again. And that's who we hear from, the Googles and Apples of this world.

But you can see that, because you need to sue a lot of defendants, you're going to have to also bring in other types of defendants. So in the top left, you have bricks and mortar companies, like Williams-Sonoma and Starbucks, who each, I think, had 12 suits brought against them, who don't make technology but may use it, and therefore, are potentially infringers.

You have on the bottom left small companies startups, or small companies in general, this is one, Brainlab, that are being sued, not that frequently, but also don't have that much revenue. And then on the other side, with the Groupon, LinkedIn I realize now it's a little different for you guys-- on the right-hand side you see companies that are not necessarily having a lot of revenue, but are highly exposed, insofar as that they're on the radar.

People know who they are. Groupon and LinkedIn are not high revenue companies, but they are household names by now, and their operations are fairly apparent. So they're being sued quite often.

So again, when we think about PAEs, we can't think about them as just a problem for tech companies, it's really, now, something that it's affecting problem or opportunity, it's something that's affecting the industry and companies generally.

There are several things that drive settlement. One is to draw a quote from David Schwartz's great study on contingent fee lawyers, and also drawing upon Carl's work with Mark Lemley, the

settlement number is really driven by the possibility of an injunction, or the economic value of the patent.

So if I'm a company who makes a product, and I have a component there, the cost of switching that component, if there's an injunction against me might be really high. I don't want risk that. Or the possibility of a large jury verdict is something that I worry about. And so this is one of the drivers of settlement.

But another is the issue of looking at the other two parts of the chart, with looking at the costs, when it's cheaper for me to settle than to fight, that's also going to be a driver with respect to my settlement. So Carl coined the word "holdup" I believe. And I think there are two different types of holdup that are going on here.

One is kind of injunctions, or remedies related holdup. And this is cost of defense related holdup. OK. So I'm going to move on now to looking, in particular, at one sector. I wanted to focus a little bit on startups for a few minutes. And I think startups are really interesting for a number of reasons.

One is that there are very important to our economy, right now in particular. Here's data from John Haltiwanger showing that startup job creation is actually greater than the entire private sector between 2003 and 2007, which I think is quite astounding.

And he's released a study more recently, a couple weeks ago, that shows the job creation, and also job destruction by firm age. Four out of 10 hires at young firms are for newly created jobs. And for older, existing firms, it's a much smaller ratio.

Now the important to remember, though, is as much as they create jobs, they also fail. And they change course at a high rate. So they shed assets. So they're both interesting from the perspective of having an interesting new business model that might be growing, but also participating and contributing patents, potentially, to the marketplace.

So what are these benefits, then, that small companies might be able to realize from PAEs? Let's talk about those briefly. Here's some data from RPX that I printed in an earlier paper that shows that, in terms of the source of PAE patents, that the majority of them is still coming from small companies, companies making \$200 million or less in revenue. And that's the primary source of patents, at this point.

Inventors also contribute a large share. But we think about, well bankrupt companies, other companies are the ones that really assist in field startups. Those are much smaller in percentage. And a survey that I did showed that this was something that startups were very interested in.

I did this non-random survey of companies. And 4% of them said they had already monetized their patents. Another 20% said they had considered it. This was small companies startups, mostly.

So they are interested in this transfer, in this monetization. Here it's not clear, by the way I asked the question, whether it was monetization for PAEs or for licensing, but you still get the picture, that they're interested in monetization. What about the harms?

Well, as we mentioned before, PAEs need to cast a wide net in suing people and assertions. So if we look at the suits, as they're distributed, the majority of them are small, have less than \$10 million in revenue in terms of unique defendants.

Now in terms of the total defenses, still the top bracket dominates. But you do see that just because you're small doesn't mean you're going to get away without being exposed at all. Now, why are small companies being sued? I think these pictures try to kind of tell a story, that if you are able to collect a lot of small payments, then it's easier and it's more of a sure thing than collecting one large payment.

Now some new research that I've just completed looks that's the CrunchBase database of startups, and tries to look at how many of them were sued in different revenue bands. And as you might expect, the larger you get in terms of your funding, the more likely it is that you'll be sued. Remember these are just suits, they're not even patent demands. We don't know how to measure those.

So this is fairly considerable. So if you may have \$20 million to \$50 million in funding, there's a one in five chance that you're going to be sued. If you're larger, the chances go up to 40%. And so I think if you do it \$50 million to \$100 million, it's like 35%, or something like that.

And some startups have a fair significant effect from this. We're talking about nuisance suits, are nuisance value. But some startups feel much more than nuisance. They feel a significant operational impact in terms of having to change their product, not being able to meet one of their major milestones. That's how startups operate. They kind of have to meet their milestones.

A number of them exited or pivoted their business strategy. And this is not stuff that I really expected to find. And when I did my initial interviews to set up questions, people told these stories of companies pivoting, or going out of business. And I thought that seems really extreme. The company probably was suffering, anyway. Not doing well.

And then when I did the survey I was really surprised that a number folks said that that was their experience. I think we need to look further into this. Startups as a group, are more fragile. But it's interesting to think about these demands. It's potentially taking products or potential companies off the market. That's something we need to consider.

We don't really know these net benefits or costs, because a lot of people can't talk, they're under NDA. And so, I think, that leaves a lot of gaps in our understanding of what's really going on. I think one thing is that NPEs are unpopular right now. So people were also reluctant to talk to me about the benefits of their assertion strategies.

I talked to one person who said it's really in vogue now to hate NPEs, but monetization helps some companies. That's something that we need to explore further, as well. So I want to talk now about what this means for policy.

Before we had PAEs we had the kind of normal state of non-enforcement of patents, only a tiny fraction being enforced. After PAEs we can see now that enforcement is much more economical, in terms of bringing suits and also settling suits.

What are the pros and cons, then, of this rapidly increasing level of enforcement? I think those are the questions we need to consider. If we can think about this as being the baseline before, widespread non-enforcement and infringement of patents, we realise it has a lot of pro competitive benefits, if you don't enforce your patents.

Because if the patent is enforced, one person gets to practice it, nobody else does. If their patent is practiced by a lot of folks, but it's not enforced, then the feature can appear at a lot of different forms, at different prices, and this is good for competition.

When companies can't win in the courtroom, then they must compete in the marketplace. So you see fundamentally different sources of competitive advantage, depending on which of the forums is more important. If the quorum is your main forum, then you're focused on freedom to litigate rather than freedom to innovate.

You're looking for great patents. And by great patents, I don't mean by, necessarily, groundbreaking inventors or technologies, but those where the infringement is very clear, you can look at the claim and say, oh yeah, that is what you do when you click on that button. And where the jury can understand the technology, and where you have great lawyers.

In the marketplace you're looking at great products, great marketing, things that are going to make you more competitive and make you stand out among other choices. But we have to also remember that PAEs increase competition if they are transferring back to the small entities which don't have, otherwise, a chance to survive.

What they really are doing, then, PAEs, is increasing the velocity of transfers between the buyers and sellers of patent rights. Is that a good thing or a bad thing? We also need to consider that. Part of that question is, who's doing these transfers, and how much are they keeping? And how much is actually going back and forth? Which was already alluded to in opening remarks.

Repeat litigants ended up being very important. 81% of defendants were sued by a PAE who had sued eight or more times. And the question arises, should this transfer actually take place? Is it legitimate? Referring back to the Allison Lumley work that Chairman Leibowitz referred to, showing that when they actually litigate these patents, they often lose.

So there's a question of yes, transfers take place, are they legitimate transfers, is one question. Another is, how efficient are these transfers? And here I'm going to just report on a survey that RPX conducted about 78 companies, over 900 litigations. In the majority of them the legal costs exceeded the payments that were given in settlement.

So if we think about the efficiency of the transfer, if more money is going to the lawyers than is going back, in terms of settlement, and then think about settlement having to be split between the contingency lawyer and inventor, you can see that this pie can be shrinking for the inventor themselves.

You couple that with the fact that many of these patents are being transferred and changed hands many times, each of those hands gets a cut or has gotten some of the share of that upside. And you consider, then, what is the efficiency of that transfer?

So I want to talk briefly, then, about reforms in this policy section before conclude. And I think a lot of reforms are going on. And a lot of them have been very healthy and have tried to address some of these asymmetries in cost, as well as exposure.

In the judiciary, right now we have the progeny of eBay, so some different cases. The Causal Nexus case, and some of them now that are coming out on RAND patents, saying that, we're not going to award injunctions, in many cases. That's bringing down the kind of pressure that injunctions bear.

We also have, on the damages side, a real effort by the Judge Rader and others to say, we need real world evidence, we need better evidence to actually prove the damages case. So if the cost of assertion is going up, you've got to hire more experts, you have to get witnesses to say this is the real value of this patent. So that's driving up the cost of assertion.

There are other reforms as well that don't go to the substantive law, but go more to the procedure. So Post Grant Review, and the PTO e-discovery form are meant to bring down the cost of defense. If I can say, this patent that I'm being sued on is not a good one, I want to put it right into the PTO, I can stop my litigation, hopefully. And turn off the clock on the expenses.

In e-discovery reform, we can also reduce the expenses, and that brings down the cost of defense. The Misjoinder Rules, making it difficult to sue as many defendants in one case, are meant to increase those costs.

So I think a lot of this is in process, and we'll see how it goes. One-way fee shifting could, I think, dramatically change the courtroom economics, as well as the question of whether or not contingent attorneys take these cases. So that's a very interesting kind of proposal. And there's been more movement in the case law, as well as now looking at The Shield Act, which I think is very interesting, and I'm probably pretty helpful.

I think we do want to draw upon past work, because fee shifting is not a new thing. We had two-way fee shifting in Europe, and in other jurisdictions. We've had a fee shifting in the United States, in Alaska and Florida. We've had one-way shifting in terms of civil rights litigation. And so we have some data to draw upon. It's, unfortunately, not totally tailored, but we know some things.

That repeat players are more immune to fee shifting, because they are able to structure themselves. People who are judgment proof are also less sensitive to fee shifting regimes. And if

you set up the fee shifting regime to be set on keyed towards invalidation of patent, or finding of non-enforcement, well very few cases get there, again, going back to Chairman Leibowitz's comments.

We also need to worry about the pre-suit dynamic. That should be 50 to 100. Because if we're talking about fee shifting in cases, well what about what happens before the case is even brought? I want to consider market based ways of reducing the cost of defense, briefly. Because I think those are also very interesting and important.

And some of these, I think, capitalize on some of the different advantages that PAEs have been able to capture. They capture economies of scale. Could we use those economies of scale also in defense by having group defense, non-settlement, underwriting insurance policies, having a defense contingency type of offering?

All these terms of self-help, I think, are ways that using the existing tools within the patent system, we can reduce the cost of defense. And a lot of these are discussed in this article that I wrote about a year and a half ago.

And I think what's really interesting is, when I did a survey of startups and asked them, "How did you respond to suits?" 22% of them said they responded to the demand by doing nothing. They did nothing and that resolve the demand.

And if we now understand the business model involves sending a lot of letters, there's not the energy to go after every single candidate. This is a place where greater education, more awareness of the economics, and of the business model might produce great efficiencies in bringing down the cost of defense.

By the way, these types of costs of defense, reduction, market based approaches have been used before. And I draw upon the work of Steve Usselman, the great historian at Georgia Tech. His literature is great. I commend it to you, and it's summarized in some my papers.

But in the late 1880s, I think we see a very parallel time in history, and some others, and I think we'll hear from Adam and others about other related times in history. But here in the late 1880s, we had railroads that were under attack by a lot of patent speculators, as they called them, who were suing based on patents they had acquired.

And what the companies did is get together and form these associations that mounted common defenses in patent suits. They got altogether. They paid annual fees in proportion to earnings. And they got full legal services for that. The members, in exchange, agreed to provide information and to share information. To pool it, and to basically get that information together.

Importantly, they also agree that they would not settle. They would not settle cases. They would refuse to settle them, and would fight them, which is something that's, privately, not beneficial. If I have this suit against me, I'd rather just get rid of it and move on, and focus on business. But because they belonged to these associations, they were bound to do so.

And these protests seemed to work, according to these historical accounts. They overcame this kind of divide and conquer approach to say, we will combine our information. We will work together and overcome. Because they were facing united opposition, inventors didn't go forward on their litigations. And you can see that, again, the defendants had a lot of access to information that really helped them carry out their business.

Speaking of which, the competition authorities had a role in this story, as well. In terms of thinking about the combinations of these groups, a covenant not to settle could be construed as something that's anti-competitive and antitrust. There were suits that were brought to say these are anti-competitive collusions. They were rejected, I think, because the Congress understood the dynamics that were going on here.

I think we'll have more discussion about what is the appropriate role in this situation. What I would say, though, is right now we've got a lot of reforms in process. We also have a quick moving market, so I want to kind of make my final point by saying that we should continue monitoring and researching these issues. There's still so much that we don't know.

And one approach is through looking at statistics. And thinking about issues of, well what happened with this money that small companies got? A lot of them have gotten money. What happened to that?

Did that fund new companies, new products, new ventures? What is the nature of this negative impact? Let's really probe more deeply, and try to figure out exactly how far that's distributed. And really looking at innovation impact.

I think that, besides data, though, we also need to look at case studies, and more kind of full understandings of the things that aren't easily measured. So looking at companies, looking at industries, and looking how the impact of NPEs has been.

And Catherine Tucker's work in this regard, I think, is exemplary, where she looked at medical imaging software companies, and measured a delay in the introduction of new products by the ones that were impacted. I think we also need to see if legal and market reforms will work. Thank you, and I will end here. If you're interested in any of the data here, here's some of it.

[APPLAUSE]

JON LEIBOWITZ: Thank you, Colleen. I thought that was just absolutely an excellent way to begin our workshop. Let me also thank the folks from the Antitrust Division, our own Policy and Planning Office, and our Bureau of Economics for their excellent work in putting together a real cross section of interests. The only unifying theme, or one of the unifying things being, how articulate our panelists are.

And in that regard, let me introduce Carl Shapiro, who is, again, no stranger to the antitrust agencies and who has been thinking about these issues for quite some time. So, Carl, why don't you come on up. And the microphone is yours.

CARL SHAPIRO: Thank you, Jon. Good. Good morning, everybody. Nice to be here. This is actually my first time back in Washington, DC, giving a talk, since I left the Council of Economic Advisers in May. So it's great to be back in the antitrust and intellectual property crowd. I see a lot of familiar faces.

If I start to stray and talk about housing finance, or like liquefied natural gas exports, or the fiscal cliff, just somebody stop me, because that was what I was doing for a while. So I was asked to talk here about give an economic framework for the discussions about PAEs today. And since that was what I was asked to do, that's what I'm going to do.

I have a little trepidation about giving the framework, or the theory, as it were, before we hear from folks who live and breathe this stuff, day to day. But I will try to being very informed by the empirical literature in this area, which is growing, and of interest.

But I have to quote Sherlock Holmes before I do that. Because he said, "It is a capital mistake to theorize before one has data. One begins to twist the facts to suit theories, instead of theories to suit facts." So I'll try not to do that. So I'll try to provide a framework, but very much informed by the evidence.

OK. I really think, ultimately, the big issue for policy purposes at least is, what is the impact of this emerging business form or certainly of a growing importance PAEs on innovation. So that's why you're not going to see a lot of color slides in these slides, or pictures. But I colored that red. That means it means a lot. So look, these are the two narratives that we hear about.

I just lay them out here. And then, how do we look for evidence that helps us distinguish which of these is going on, or which is going on more? So the pro PAE version would be, basically, look, this is a way to efficiently monetize patents. Patents are a reward to invention.

And, this, for example, the small inventor who's otherwise going to be completely ignored by a big company stealing their ideas and infringing, they turn to a specialist to assert those patents. Sounds very desirable. So that's the poster child, is the small inventor who is benefiting from this.

The other version, the other narrative, is a tax on innovation. And you saw that was in my title there. At least it flashed by. And this is, you've already got some overtones of this from Chairman Leibowitz, basically, the notion PAEs don't actually make things, they are just extracting money. And this money isn't really funding innovation, it is, in fact, a tax on those who are building products, and innovating, and implementing.

And we have two poster children here, at least I thought of. One is sort of a large innovative tech company that is just a juicy target. They have a lot of revenues and they're, as we see from the data, are defending a lot of these suits, and getting a lot more letters.

We also have the poster child that Colleen highlighted a little bit more, of a tech startup, really any startup, but I'd say a tech startup that's facing these suits that they might see as nuisance



suits. OK. Now one way to resolve all this is to note that there is a 2 to 1 in poster children. So maybe that resolve the issue.

But perhaps we should do a little more deeper analysis here. So what I want to do is lay out some economic theory, or framework. Use that to filter and structure the empirical evidence. I'm going to be fairly quickly glide through a bunch of evidence that we have about what PAEs are doing, and how they've grown over time to see how that fits with these narratives.

It's not going to be all or nothing. I mean, there's a lot of variety here. So we're just looking for what are the patterns. And then, also, where would we gain from more further study? I'm not here to give answers to all this, it's really to listen, to provide framework, where can we learn more? And one of the things that I think we're going to see, at least, I feel after looking through these materials, is that there's these different studies. A bunch of them are inconsistent.

So some more systematic look at evidence would be quite valuable. Because different data sets and different approaches are giving, apparently, inconsistent findings. And that's a signal for some more work. Then I'll talk about, at the end, about policy implications, both for patent and antitrust policy.

So first, just let's make sure we know what we're talking about. So I'm happy to go with the definition that the FTC has used in its report last year of what a Patent Assertion Entity is. I think is the same one Colleen's used. And, in fact, talked about here, just a moment ago.

But this is a lot narrower than a non-practicing entity. So this is one of the issues. When you start to measure stuff, or think about this, PAEs are a subset of NPEs, because they're purchasing and asserting patents. And I'll talk about this in a moment.

I would distinguish between what I would call a pure PAE and a hybrid, pure PAE, basically, it's what you think. It's the company that that's their business, of asserting patents. They're good at it. They're trying to make the most money, monetize those patents as the best they can.

Versus what I'm calling a hybrid, where some operating company is exerting control, either through ownership or through some contractual provision that changes the incentives, the requirements of the PAE. And this is quite a different creature, because now we've got the PAE that has essentially a financial interest, or as though they have a financial interest, or certainly acting in a way that can directly affect competition in some product market, and not just the technology markets in which PAEs operate.

And of course, we've seen a bunch of transactions, and particularly in the last couple years, where there were hybrid PAEs that are involved. And that's a very different analysis. I think we'll turn to that somewhat, in this afternoon's antitrust panel.

Colleen has already, and as a matter of fact, actually, Chairman Leibowitz also has already alluded to this. This is from this the recent study, the Feldman, Walker, Jeruss study that was done for the GAO, based on looking at 100 patent litigations per year, each of the last five years. The red is the monetizer category. You heard the 40% number.

So it's definitely gone up. This particular chart-- and there's others in the paper, of course-- it is not just PAEs, though. That includes individuals and trusts in the monetizer category. So we see, as you'll see in a few moments, exactly how you define these categories matters a lot, in terms of what you're measuring the numbers you get.

But there's no question the monetizations are an increasing share of patent litigations. So the levels depend a lot on what you're measuring, but the trends are very clear. Basically, in these categories the trend is going up. And Colleen mentioned the RPX data indicating that in 2012 it's gone up quite a bit more, even from the 40% to perhaps 60%.

And it's always important to remember, a lot of the data that you're going to see, and that's available, is litigation. That of course is just the tip of the iceberg. Because so much stuff, there's demand letters, and there's settlement, and there's just licenses that happened prior to litigation. But we don't actually know that the underwater part of the iceberg looks the same as the above water part that we see.

This has been a research problem-- well, I remember back in the '80s, working on licensing issues, and it's very hard to get licensing data because it's private. Well, it's just, it's private and proprietary. The only way you usually get it is through financial statements when they're significant enough to a company that they have to report it. And that's not a very reliable data set.

So this is the tip of the iceberg. But I think it's pretty indicative. And I'm pretty sure we're going to hear later today, people who are out there going, oh yeah, this stuff is growing a lot. So I think we can take as given that this is an important category that's growing in economic significance and frequency.

I am going to continue to issue these warnings, for a few minutes here, about how you classify different types of patent owners. What's a PAE, what's an NPE, et cetera. So here's a classification used by Allison, and I believe this is originally Lemley had come up with this, of different owners.

The category 8 is the product companies. Most of the patent litigations are brought by product companies. You saw that in the previous-- operating company was up here. They're still the majority. But then you have all these other categories, all of which would be some type of nonpracticing entity, or at least, not a product company.

And I just think slicing between these different types is a dicey exercise. So I think I would say it, as an economist. And I'll talk a little more about that. I color coded some of these. So the university is one category. But we see those are very few lawsuits. So maybe that doesn't matter that much.

The individual, and the individual inventor owned companies, those seem very similar to me. And that's quite a few lawsuits. And that's always been quite a lot. Individual patent owners tend to be pretty litigious. Or if you look at the most litigious plaintiffs, it's often individuals. Lemelson, or Katz, were the classic examples of that.

And then the failed startups, or corporate heritage, I am going to issue a warning here about making too much of a distinction between that category and the PAEs, who happened to acquire the patents. So a portfolio of patents coming out of a failed company and being asserted, is not that much different than if they then sold those patents to a specialist who asserted them. So a bit of precaution there.

All right. Now onto the economics. Breaking news-- economists welcome trade and specialization. You heard it here first. Why is that my title here? Look, at least at, maybe a somewhat abstract level, that's what Patent Assertion Entities are.

They're an additional layer in the chain of value of taking the property, and extracting money from it. If we thought of real property, or other types of business, we would normally welcome these specialists.

We don't have probably trucking companies as intermediaries, if they're more efficient in terms of transportation services. We don't have problems cloud computing specialists, if that's more efficient in delivering IT services of various sorts.

So we should not be focusing on the form of the entity, the PAEs. The question is, is the activity that they're good at something that is socially valuable and beneficial?

The trucking companies, we don't really stop to think of the fact, oh, yeah, it's a good idea to transfer stuff more efficiently. And they get scale economies, and logistical whatever. No. And we do the same thing with cloud computing.

But here, we have these specialists, but we're kind of wondering, or at least some of us, wait, is this thing that they're good at a really good thing, or is it is it not? So that's an important frame. Now trade in patents in and of itself, not that new. And in general, economist, at least, have tended to welcome that.

There's some nice studies by Carlos Serrano, looking at, basically, the patent assignment data through the '80s and '90s. And finds that a good fraction, about 1/6 of all patents trade once during their lifetime. This is, like I said, the late 20th century time period. And somewhat more for patents that initially granted to individuals.

And this other study, Galasso, and Serrano, and Schankerman finds actually when the patents trade, a lot of times, there tends less litigation afterwards, if they were initially owned by an individual. They think that what's going on during that period of time, was that larger companies would buy the patents, maybe to settle a threat, and then they're not planning to assert them, so you actually get less litigation.

And the way economists have generally conceived of why are patents trading, it's to facilitate technology transfer. There's a very large literature on technology transfer, which has high transaction costs, generally. And buying patents sometimes with trade secrets surrounding them, as well, is useful.

I think it's pretty clear that PAEs are not facilitating technology transfer. I can return to that. There are various indicators that they're not doing that. So at least one of the primary benefits of sales of trade in patents is not applicable to PAEs.

My title here, overall, was PAEs, Are They Effective Monetizers, Or Tax on Innovation, or Both? Well let me just say, they are effective monetizers. Or at least, it sure seems that way. And the economist would presume that very strongly. Look, that's the source of the gains to trade. I mean, they're buying patents. They're going to lose money if they can't make more money out of those patents.

The fact that they're doing this, the economist says, well unless they're massively making some mistake and losing a lot of money, they must be more efficient monetizers. I don't think there's any reason to think this is some business fad that's about to fade out. It's certainly on the ascendancy, in fact.

And while they may not be making tons of money, as best we can tell from the publicly traded PAEs, it looks like a profitable line. So that leads the economist to say, well, all right, what are these gains from trade? What is their source? We could do that for the trucking companies. Figure out why they have trucking specialists, or cloud computing, or we can do it here, too.

It's a typical type of analysis and value chain for a vertical layer that develops a specialist. And we'll hear more about this, I think, from the panelists who work at some of these companies. But it's pretty clear.

And Colleen mentioned some of these. Certainly foreign investors selling the patents, you can get liquidity. The PAE can pool and share risk among different patents, in terms of what you can get out of them.

Clearly there's specialists that have economies of scale in what they do. Presumably, they're good at selecting patents to assert. This is a part of having a good lawyers, and just being good at patent litigation, and negotiating and litigating. And then, there's some reputational issues that come into play.

Reputation for litigating, not accepting small offers. And what people often point, their immunity from retaliation. At least they don't have ongoing business operations. So those are all private gains from trade. OK? Those should be beyond question.

I mean, we can ask which of these gains from trade applies in different circumstances. If a large portfolio of patents is coming out of a bankrupt company and being bought up, that's not going to be about liquidity and risk sharing. Those gains would apply more for an individual inventor selling the patents. But this is this is the list of factors that comes in.

At the same time, private gains from trade do not mean social value. So they are effective monetizers. There's money to be made. That's why we're seeing it. Why now? Again, any time we look at a economic phenomenon, it's good to understand why is it happening now, so I can understand what's going on.

It seems that, to me at least, a primary factor is there's lots of raw material. Raw material in this business is patents. Particularly if they're not being asserted, or used very much. And a lot of these are software patents. Not all of them, to be sure. And we see the activities in the computer and communications areas.

So basically, there's a lot of raw material lying around. Arguably, not monetized as much as it could be. That's the point. That seems to me a primary driver. As Colleen has mentioned in some of her work, this is kind of an ironic legacy of the building up of patent portfolios by a lot of tech companies, for defensive purposes.

And then some of those patents have gotten out into the wild, as it were, either because those companies or lines of business have gone bankrupt or gone under, or just they've been spun off, too, because of this added private value that can be unlocked.

Now I wrote here, this was inevitable given the accumulation of patents. Basically, Americans are very good at being ingenious and finding where there's money to be made. But I wouldn't have written that-- let me put it this way, let me spin the clock back 15 years ago.

When I first got into this, I had left DOJ in '96, I went back to Berkeley. And one of the first cases I started working on, I did some work for Rockwell. They were having a big fight with Motorola over modems, and modems standards, and patents in that area. These modems, like they're so slow by today's standards. Right? OK.

This was a patents and standards situation. And it was question about the reasonable. What was reasonable? All that stuff, which I hadn't really thought about that much before, I started working on. And then around the same time, I started doing some work for Intel that actually was involved with the FTC's challenge to Intel, back then, having to do with cross licenses, portfolio cross licenses.

All this led to a paper I wrote on patent thickets, that has gotten some attention since then. And during that work I saw first of all, of Intel facing all these lawsuits, including companies that patents-- companies that had basically were not doing well, and then were seeking injunctions against Intel. And so that was a great example of the patent thicket.

But even more so, in the Rockwell case and in other matter, I saw a situation where there was a portfolio of patents that was being asserted against a company that happened to be my client. And they were, like, negotiating, trying to get to pay the rates. And then they realized that the company that owned the patents had sold off a portion of them to another company that was also asserting separately.

They're like, holy shit. Right? We thought we had to have a license here, but now like that license doesn't cover all of the patents, we've got to have these other patents. And I'm doing these models that Corneau compliments.

And as economists will tell you, you break up the patent portfolio, the profits of the portfolio go up, total social value goes down. It's really bad for the customer. And let's say these are complementary patents, but absolutely need to have every one of them.

So I'm like, uh, oh, this is trouble. Corneau didn't see this. Corneau had brass, was made of zinc and something else. I can't remember. So I'm like, this is trouble. And I realize this is like a money machine here. You start to do this. What are the limits? So I started thinking about that. I said, we're in trouble.

And again, whether you like them or not, this is what PAEs are doing. This was predictable. So that's some of the underlying economics.

In order to figure out the impact on innovation, I think we just really, basically, got follow the money, see who's benefiting. Where the money's going, and who's paying it. That's what we need to figure out. Because that's how it effects all the incentives. OK.

Now this work by Besson , Ford and Meurer, I guess, is very interesting. And part of this got mentioned by Chairman Leibowitz. If you would find that a very small share of the money that the targets are paying to PAEs, ends up going back to anybody who actually does invention-- call those patentees-- that would be pretty much a killer point.

Because then you would say, look, in the short run, all these people these targets, assuming they are actually doing some invention and innovation, which they are, small companies or big, they're paying all this money and it's a very leaky bucket. As the money's getting brought back to the patentees, almost all of it is spilling out somewhere or other.

That would be a killer point. And they claim that, let's say, less than 10%, 2%, 4%, 9%, depending how you measure it, a small amount of the cost to defendants is going back to patentees. OK. They do this through a stock market event studies.

I think this is a good line of work. I'm not convinced by the studies, partly because they have 574 litigation events. Defendant losses are \$87 billion, \$152 million loss per litigation event. And that just doesn't line up with what I think the average litigation event is costing to defendants.

But it hasn't been peer reviewed yet. Maybe it's right. I'm skeptical. I'm just saying, it seems a little off, to me. But good to be doing it, maybe it's right. This is, I think, a very valuable line of inquiry. Where does the money go? How much of the money that's being paid ends up funding the invention? So how leaky is the bucket?

If the bucket's not too leaky, then we basically-- and this is, I think, the fundamental economic analysis you want to do here, which is not about the form of the PAE-- it's about the target companies are paying all this money.

And there's a lot of different ways in which they pay the money. Right? It's not just the licensing fees. They have legal costs. They have to invent around. They have business disruption. Whatever, all these costs.

So that's got to be a drag on innovation, in and of itself. Because, look, we look at these target companies, as I said big or small, these are the companies that are innovating. And remember, innovation is a much broader concept than invention. Innovation means commercializing, putting together different things, different pieces of technology one has to in this day and age, and so forth. So that's the drag on innovation.

On the other hand, the benefit is more money going to those who are getting these patents. Now, there is a question, are these patents actually reflecting in true invention, or just what the patent office will issue? But the first place, you want to look at how much money is going back to the patentees. And that's why, if the bucket's very leaky, not much gets back there. This whole enterprise can't be useful for innovation.

So that's, I think, the place to look. And look, this is obviously going to depend case by case. It's a very different situation if you have a small inventor who is going to be ignored by big companies, who then has an intermediary efficiently represent them and try to get the money. That's going to give a different ratio, or leakiness to bucket than a situation where it's a large paper patent that didn't really amount to anything, asserted against a large company that has revenues.

So if you think about that as a fundamental economics, in terms of the cost to the implementers and the money going back to the inventors, the form of the PAEs is really not the thing to focus on. So I just want to say, don't get hung up on whether the inventing and patenting function is vertically integrated with the patent assertion function.

So if you go back to that classification a whole bunch of patents that came out of a failed company, or maybe that company is asserting those patents, that's not a PAE, because they were operating company, still are an operating company. And then they exit a line of business, and then start to assert the patents, in terms of the economics, that's almost the same thing as a patent assertion entity buying those up and then asserting them.

Now let's look at, if we're going to try to figure out, follow the money, this is where there's a good amount of empirical work, and more needs to be done. So let me zip through this. Some of this, pieces of this, you've heard from Colleen, too, as well. And I'm not going to give all the cites here, but you can sort it out.

PAEs appear to be acquiring more of their patents from smaller companies, than are practicing firms. So that tends to support the narrative that this is a way for smaller companies or individuals to monetize and take advantage of these specialists.

It's very clear our PAEs are focused on information, communication technologies, a lot of software patents. And there's some evidence that their patents tend to be these kind of vague or broader patents that we often get in software. That's the space they're in.

We also have a good amount of evidence on the type of comparing PAE litigation to other litigation, remembering that's the tip of the iceberg. They do appear to target small companies

more, than do practicing entities. I think the timing, I'm going to put a lot of weight on, in a moment.

The PAEs assert much older patents than do product companies. There's a very nice work by Brian Love on this, that is quite striking, in terms of years left in patent at time of first assertion. PAEs doing it much later.

And there's also some evidence, although this is one of the areas where things are a little bit mixed, that PAEs end up with a higher fraction of non-infringement findings. Not in validity findings, by the way, but non-infringement. So they're more aggressive about going after people who are outside the bounds of the patent. Or that's what the jury ultimately finds.

How do we test the narratives? I put a lot of weight on the timing, I have to say. These lawsuits are coming, and I think this is-- I hesitate to say there's a consensus, but I think it's pretty clear that PAEs typically assert their patents against targets who have already introduced products.

Not just that, but I guess in the sense, who have, this is well after the patent was issued, they're not copying the invention from the patent, this is exactly the sort of ex-post licensing the FTC report talks about, as being where there are concerns about the patent system not operating very well, because of the failure of notice.

It's somewhat hard to see how boosting the awards to these software patents is really a good thing for innovation. So PAEs are operating, to a large degree, in the area where a number of folks have identified what they at least call flaws in the patent system. That doesn't seem to me to be a coincidence. And that fits the one narrative much better than the other.

So here's, kind of, as far as I've gotten with this line of thinking, which is-- and you can tell, I'm kind of leaning more towards that interpretation-- but then the way I think about is just, look, are the PAEs, or really, are patent owners who have these types of patents and are asserting them?

These types of patents that may be a little bit vague, or overly broad, maybe of low quality. The high probability of non-infringement or validity. Are they getting too much? Are they getting too much when they assert them, and that's the source problem? And then the PAEs are just doing that more efficiently.

Well how do they get too much? What's the argument for over reward to these types of patents? I think there's three buckets you have to look at. One is, they're trying to get injunctions, and there's a holdup value associated with that. And I've been concerned about that for a long time. You see that in my own writings.

But the fact is, after eBay, I think the course of, by and large, taking that off the table for a pure PAE. So then you're into maybe the ITC. But I think it's harder, it seems to me, to make out the case that the injunctions are the source of the bargaining power that a PAE has, post eBay, the way the trial courts are implementing eBay.



So then the next group would be, well the royalties they're getting are too high. And that's why they have undo bargaining power, again. And that's probably true. Could well be true. But hasn't really been established empirically.

And the courts are struggling with, what should the reasonable royalties be? Whether it's in a standard essential patents context, or any context, for patents covering minor features, complicated products, how the courts are going to deal with royalty stacking issues.

They're moving in the right direction, away from a total market value rule. So this seems to me it could be an argument if the PAEs are getting too much, but it's not proven. And then you've got the nuisance suit argument, which seems to particularly have some salience with startups.

And Colleen's work, Catherine Tucker's work she mentioned, there's some pretty convincing evidence that startups, they really are setback by a lot of these lawsuits. And that's got to be a drag on innovation, in and of itself.

The nuisances, I think, is where we should look for some creative counter defense strategies. If the PAEs are establishing reputations for bringing suits even when any given one suit won't pay for itself, well the defendant should find a way to establish a reputation to defend the suits, even though any given one wouldn't pay for itself, and to fight back. And maybe the example from the railroad industry, in the 19th century, is one we can pick up.

Policy implications, in my last couple minutes. Patent policy, look, there's nothing wrong with intermediaries. I don't think we want to go after intermediaries, as a form. I just don't see how that takes us anywhere. We should try to really go after the-- and this is not a surprise to most of you in room-- there are ongoing flaws in the patent system. And those are being, I could say exploited.

And exploited I the don't mean as a negative, it's just American ingenuity at work. And the American Invents Act is taking steps in this direction. Written description enablement, there's more through Section 112 the PTO can do. Maybe the most important thing is to convince Dave Kappos to stay longer at the PTO. And that's probably not going to work. I think he's already is going.

This issue about reasonable royalties, FTC has weighed in on this, but the game continues. Fee shifting. So those seem to me, those are the policy responses. And better disclosure of real party in interest, it seems to me, there's a lot of shell companies and subsidiaries, and I know Stu Graham is going to talk about this, Chief Economist of PTO, later today. And Chairman Leibowitz, you mentioned this, as well, I think.

This seems to me a promising area. For example, I found myself wondering, well wait a moment. If an operating company spins off a bunch of patents to a PAE, and then they assert them against the company's competitor, part of what everybody says about the PAEs is, oh, they don't have any blow back. Right? Because they don't have any operations.

So if I'm the competitor I'm like, well, what the hell? Why did you sell your patents to that jerk? I'm still going to hold you accountable. I don't see why, if it's retaliation, you could retaliate against the person who sold the patents as your competitor, if they have an operation, if you know who it is. So one of the competitive advantages of PAEs could be neutralized, in part, with better disclosure, as an example. But there are a lot of other benefits of that.

Antitrust policy, Jon, I love antitrust, Jon. I don't know so much. I don't know from Section 5, so much. That I don't know. But even with your powerful Section 5, I'm not sure you can fix the whole patent system. So we're going to talk about this afternoon on the panel.

I don't quite see how asserting patents in good faith is ever going to be an antitrust violation. There's more room for antitrust if one's talking about the acquisition of the patents. But assembling a portfolio of patents that are not substitutes for each other, kind of hard to see exactly what's the problem with that.

The interesting antitrust questions, I think, come up, not so much with pure PAEs, but with the hybrid ones, where the PAE has an interest in operations. All right. I will wrap up. Let me skip to the last two lines here. Look, if you believe the patent system is functioning well, you will see PAEs as an efficient layer of specialists. If you believe the patent system has some big flaws, you will see the PAEs exposing these flaws.

So this is a bit of a Rorschach test, in terms of what you think of the patent system. This reminds me in the Microsoft antitrust case, one of the lines I love was people, when the DOJ came up with the remedy, some of us, including myself, thought it was too weak.

The line I loved at the time was, about the remedy, if you call it that, in the Microsoft antitrust case, was, if you love the case, you'll hate the remedy, if you hate the case, you'll love the remedy. And here, if you like the patent system-- well I don't want to put it that way. If you believe it's functioning smoothly, PAEs are just a natural part of that ecosystem. If you think it has flaws, they're exploiting them.

All right. Thank you. Here I am, I thought I close a little holiday. This is now that I'm back in the nation's capital, these really are gingerbread. This was in the White House last Christmas. So, I regret, for those lawyers here, there's no Supreme Court showing here. But we do have some other highlights in the Capital.

[APPLAUSE]

We're running a little bit behind, but why don't you guys take about five minutes of questions, if that makes sense. And I also want to just note that some of our participants are fogged in. Those who were coming from the Northeast, including Fiona Scott Morton, who along with our Suzanne Munck, was instrumental in putting today's workshop together.

We hope and anticipate many of them will actually be able to fly in later this morning. And again, although there is fog in the Northeast, there is considerably more clarity on this issue, in

part, because our first two panelists. So thank you, so much. And why don't you take a few questions, and then we'll go to our break.

PROFESSOR CARL SHAPIRO: Speak up.

AUDIENCE: I was wondering what has prevented the creation of platforms, sort of defense facilitation platforms like insurance companies, defense cost oriented insurance companies, that could solve also for the problem of data sharing?

PROFESSOR COLLEEN CHIEN: I think that it's a great question. And if you think about insurance actuaries who makes insurance markets, they need a lot of data. They need a lot of information. If you think about how an underwriter figures out how much you should pay for your car insurance, they want to look at your driving history, your profile as a person, what kind of car you're driving.

And in order to come up with a rate, they're going to be trying to figure out what's happened in the past, and they need a lot of data. In the patent litigation space, as Carl's already mentioned, and we've talked about, is not one that has been data rich in the past. Now we have more big data, kind of analytics to bear.

But in terms of settlements and licensing rates, and things like that, I think we're still at the tip of iceberg with respect to information. So it has been difficult, I think. There also is the question of adverse selection, which also, I think, always besets insurance, in general.

So I gave a presentation last year in Las Vegas, where I talked to a number of insurance companies about their efforts to underwrite patent litigation exposure. And they said, no one wants to underwrite the big tech companies. Those are the ones who want insurance.

You want to underwrite companies that don't get sued very often, so you have a big pool of distributed risk. And so I don't think we've got that pool yet of everyone who's willing to jump in, and have symmetric, or a basically distributed risk sharing.

PROFESSOR CARL SHAPIRO: Two words, adverse selection. So much of what, like Collen said, if people who need insurance, are ones for these risks are big relevant to their operations of startup smaller companies. Average selection's a killer there for any type of insurance model.

The other type of defense, though, that I think could work, joint or coordinated, is really like I said, establishing a reputation and maybe getting some of the scale economies on the defense side. That could happen. And maybe we'll see it. I don't know. Maybe industry participants will have more to say about that later.

PROFESSOR COLLEEN CHIEN: Mike?

MIKE: Hi, Mike. Carl, I wonder how you think we should try to calculate what a typical NPE or PAE case looks like? And I wonder what your intuition is about what looks like a plausible number?

PROFESSOR CARL SHAPIRO: OK. First, I don't think there is any typical case, so I'll take your questions to mean average or median.

MIKE: Actually, that was the question, really is, were you referring to mean or median? The number that you said was, mean, but I think your intuition is based on median. Is that right?

PROFESSOR CARL SHAPIRO: No. With all due respect. Look, I want to listen about that. You guys have been looking at this, and I don't see how the mean case out of 500, can be \$150 million either, when the very largest ones we hear about are \$1 billion. And there's like a couple of those. So I don't get that either.

I don't think I'm being confused between mean and median. I'd love to have this conversation. And like I said, I think it's a great line of work to be pursuing. And maybe these numbers will hold up, I'm just not yet convinced. Stand up, and/or wait for a mic. Talk loud or wait for a microphone.

MICHAEL COHEN: OK. Michael Cohen from NBC Financial Research. And my question is to Professor Shapiro. You talked a lot about the leaky bucket. And I was wondering what kind of market forces would prevent solving that naturally? I mean, wouldn't the incentive create an incentive for additional Patent Assertion Entities to just drive up the price of patents, and greater reward inventors?

PROFESSOR CARL SHAPIRO: I agree that competition among PAEs would tend to reduce their profits. But, look, if there's just a lot of costs associated with this activity, that is a leaky bucket. That's sort of the leak from the bucket, inevitably. This is very common rent seeking activities. You can have competition among rent seekers, and still there's a lot of debit loss. We have a hand in the back here.

JORGE TORRES: Hi, Jorge Torres. I think a lot of the monetization activity that we see is driven by financial speculation and money chasing returns in a low yield environment. And you, Professor Shapiro, mentioned one of the questions we should ask, is patent assertion effective? And I think one of the measures of effectiveness is whether or not patent assertion campaigns are generating financial returns.

And anecdotally, we've heard, and we know that, they're not. They're not generating risk adjusted returns that justify all the liquidity that's been pumped into the space. So my question is, do you think if we did absolutely nothing and just waited, would this problem correct itself? Or would we continue to see people pump money into patent assertion because of the ancillary financial gains to be made on managing money through transaction fees, or litigating patents on behalf of clients?

PROFESSOR CARL SHAPIRO: Well, there's no indication that this is about to fade. Maybe it's reaching a peak, maybe it is a bit of a fad and will decline. If it declines 50%, which is a lot, I guess, I don't care to make predictions about that. I can just look at the trends we've had so far, which are upward, upward.

I would just say, I guess, as from a policy perspective, whatever that market equilibrates itself, OK, maybe there'll be some pulling back, maybe there's more money has brought in than should have, whatever. I want to ask, where that market and the capital that you're talking about equilibrates itself, is that a place that is attractive from the point of view of innovation? And if we've got flaws in the system that are being exploited, wherever that market ends up, it's going to have too much of that activity.

PROFESSOR COLLEEN CHIEN: Jorge, I just was wondering if I could also reach out to you. I've read some of your articles before. And I wonder if you could comment on why you think that some of these campaigns have not been successful.

What have been the investments that have been made that have not paid off? Or is there a change in the legal reforms that have produced this result? Or is it just that the low hanging fruit is gone, and so now it's harder to get the really good assets? It would be great to hear your insights.

JORGE TORRES: So I'll just preface what I'll say by saying, I'm not an academic. I don't do research, I don't have data, but I have a lot of anecdotal information that I've obtained through one-on-one interviews and discussions with folks who are in this business. It's just really hard, bottom line, to find portfolios that are going to, when they're asserted, yield financial returns.

It's like anything else in private equity. It's hard to pick the winners, when you invest in startups. It's really hard to pick those portfolios, even if they're being actively infringed, because of the vagaries, idiosyncrasies, and inherent uncertainty of litigation, to predict which portfolios are going to be the winners. And which ones aren't.

PROFESSOR COLLEEN CHIEN: Thanks.

PROFESSOR CARL SHAPIRO: We should stop to have a chance to have a break, here.

SPEAKER: That's great. I really want to thank Professor Shapiro, and Professor Chien, for coming and sharing their views with us. And we're going to now take a 10 minute break. And we'll be back here at 5 of 11:00 to continue. Thank you, very much.