12TH ANNUAL ADVANCED PATENT LAW INSTITUTE

THE CURRENT PATENT LANDSCAPE IN THE U.S. AND ABROAD

United States Patent and Trademark Office
Alexandria, Virginia

March 9-10, 2017

March 9, 2017 8:30 a.m. – 9:45 a.m.
First panel of conference

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P R O C E E D I N G S

JUDGE RUSCHKE: So let me introduce the first panel, if I could. I'll move into it very, very quickly. It's entitled, "The Current Patent Landscape in the U.S. and Abroad." We have two moderators. They seriously do not need an introduction. But we have at the far left, Rob Sterne, who is the founding Director of Sterne, Kessler, Goldstein & Fox, here in D.C. Immediately to my left, the other moderator we have is former Chief Judge Paul Michel. That's all I'm going to say, Judge Michel. Everybody knows you. You've been a friend of mine and a mentor for 20 years, so it's great to always be here with you on these panels.

We also have -- let's see, we have Peter Detkin, founder of Intellectual Ventures. Obviously, doesn't really need a lot of introduction there either. We also have -- let's see, we have Damon Matteo, who is the CEO of Fulcrum Strategy. And we have Paul Stone, who is the partner of 5AM Ventures. And at the end -- I'm sorry, I can't see -- Paul Evans is the Vice President of Intellectual Property at Vivint. And I'm afraid, I think we had one panelist fall out at the last minute. Is that right, Rob? So, we apologize for that, but we have a great panel. And I'm just going to turn it right over to Rob and Judge Michel. Thanks.

MR. STERNE: Thank you, Chief Judge Ruschke. Julie Mar-Spinola, one of the founders of ChIPs and the Chief

Intellectual Property Officer of Finjan in Silicon Valley, is not here today. Why? She is in Munich working on a hearing involving a patent enforcement action in Europe, which is in many ways characteristic of the broad important topics that we want to talk about today in a very lively panel discussion. Chief Judge Paul Michel and I will vie to be the patent version of Charlie Rose. I will be turning it over to Judge Michel in a minute, but I start with a few comments our panel wants to begin with.

The new global patent environment has changed dramatically in the last 10 years as many of us realize. Patents have gone from being the darling indicator of invention and innovation, to being characterized as a tax on the goods and services, as a well-orchestrated and well-funded patent troll narrative emanating from many companies and parts of the industry, as well as the second term Obama White House, has become the accepted and common wisdom. Why has this happened and is it correct?

The EPO and the European Union have risen in importance as a place to protect and enforce global patent rights -- a dramatic change. The Chinese patent system has mimicked the growth and importance of the Chinese economy, with filings of Chinese applications at SIPO exceeding filings at the USPTO and Chinese-originated applications being the fastest growing country group at the USPTO and the EPO.

The value of patents has dropped globally -- with the greatest drop being in the U.S. The U.S. Supreme Court has radically rewritten U.S. patent law. The creation of the USPTO Patent Trial and Appeal Board (PTAB) in 2012 has produced over 6,000 proceedings challenging some of the most important and valuable U.S. patents, where the success rate for patent owners is still between 30 and 40 percent. Injunctive relief has become very hard to obtain, particularly for entities not selling products or services under the patent. And the positive impact of the U.S. patent system on universities, start-ups, and individual inventors has rapidly declined and no longer, in many respects, provides the engine for funding of this very critical innovation that is done by small and medium-sized companies and universities.

I now would like to turn it over now to my fellow moderator, Chief Judge Paul Michel.

JUDGE MICHEL: Good morning, everyone. It's a pleasure to be here. This conference is one I look forward to every year because of the high quality of the audience and the people at the dais, so I'm looking forward to our two days together very much as in past years. My interest, as a retired Judge from the Federal Circuit, is in the health and vitality and efficacy of the patent system in America. I have to say I'm concerned about the health and vitality and effectiveness of the patent system. It's no exaggeration to

suggest that for slightly over a decade, it has been the target of serial criticisms, serial assaults from all sides -- from the Supreme Court, from the Congress, in the press. And the cumulative effect of all these assaults is that the system is in distress and I'm worried that it can no longer serve those it most needs to serve.

Who are they? They're people like the gentlemen to my left. In the patent community, we sometimes fall into tunnel vision or silo thinking, so patent practitioners understandably worry about obtaining patents where prosecution is their main practice or litigators worry about litigation. Counselors worry about counseling and so forth. And I suggest that we all need to try to step back and see the larger picture. Look at it from this perspective: is the system working to do what it needs to do? What does it need to do?

In my view, it principally needs to incentivize investment. The target of the system is not creative people inventors. The target of the system is money managers, because most inventions cost lots of money. The R&D costs lots of money and the follow-up commercialization to actually build factories, hire workers, put products on shelves, provide services, takes lots and lots of money -- serial investments. So the whole fulcrum of the system is the adequacy of the incentives to invest. And, of course, that turns on what level of assurance is there that the investment

will provide a return in some reasonable timeframe. And so the reliability of patents, the availability of remedies are critically important.

It's easy to forget that money managers -- whether it's investment bankers, private equity fund people, venture capitalists, or all the other external money managers -- they have lots of alternatives. They don't have to invest in R&D and commercialization. Same thing with the internal money managers at a corporation who are trying to decide what to do with the revenue stream -- how much of it to invest in R&D and in commercialization. They also have alternatives. So when the incentives are too low because the assurance of a return keeps falling, they're going to take the other alternative. So the money will be invested in things other than R&D and commercialization.

So my concern is that America spent decades off-shoring the vast portion of manufacturing. My concern is we may be moving in the direction of off-shoring invention in a similar fashion. And that would be critically harmful to the country. The Kauffmann Foundation and the Census Bureau, in multiple studies, have documented that most net new jobs come from small start-up companies dependent on technology. So if we're going to create jobs, if we're going to create prosperity, the patent system has to adequately incentivize the investment managers and I think it's failing to do that.

You know a lot of the statistics -- we'll go into more shortly -- but, there's, I think, a serious danger that the weakened patent system will turn around the investment engine and if we don't watch it, the patent system will reach the point of collapse.

MR. STERNE: Judge Michel, if I understand you correctly -- and I want the panelists to talk about this -- the problem is uncertainty in the investment community. Their inability to be able to determine what patent protection they really have in the technology they have invested in that now has become successful.

Paul Stone, what is your experience with the importance of patents to the investment community, since you are a venture capitalist with a patent attorney background?

MR. STONE: As context, 5AM Ventures is an early stage, life science venture fund. We start new companies that create products for the life science industry. We have about a billion dollars under management. We've invested in about 60 companies over 15 years. About two-thirds of those are therapeutics -- the drugs that people take for life-threatening diseases. The remaining one-third is a combination of drug delivery technologies -- new ways to administer drugs into your body, and research instruments and reagents -- the picks and shovels, the blue jeans -- that scientists are using to discover new biology and, ultimately,

new therapeutics.

If there's one message I could deliver, it is that policy impacts investment. Think about tax policy. If we have a tax policy that makes it difficult to take profits that are earned off shore and bring them back into the U.S., people won't bring that money back to the U.S. If we have a regulatory policy in the FDA, for example, that makes it difficult and challenging to develop certain classes of drugs, like antibiotics, you won't get a lot of new antibiotics. There wasn't a new antibiotic approved for 20 years and we've got diseases and resistant strains that have developed and we're not addressing them. Now the FDA -- to their credit -- three or four years ago, started becoming more creative and recognized this problem and now we're seeing investment flow back into antibiotics.

Then you think about the patent system and that policies there will also impact investment. If we have a strong patent system like we've had historically in the U.S., we will continue to see meaningful investment in new technologies. Contrarily, if we have a weaker patent system, you will see less investment in new technologies. If you think about eligibility -- all the §101 issues, and if you think about scope of protection, KSR and some of the outcomes of that, and if you think about enforcement challenges, licensing challenges, remedies: All of these themes,

collectively, are on the radar for investors and it makes a difference.

I would just note Judge Michel's point earlier, if you look at 2016 and new drug approvals. How many new drugs got approved in the U.S. by the FDA? Anybody have an idea? Twenty. Okay, so 20 drugs per year. Of those, over 60 percent -- and this is a trend that has been growing -- came from small biopharmaceutical companies (e.g., the molecules originated from small biotech companies). So it's not just, for example, Merck, Pfizer, Glaxo Smith Klein, Bristol-Myers. They're not the ones inventing most of the new drugs. It's coming from small biotech start-ups that are funded early on by universities, by angels, by seed money and then when they get to a certain level of proof of concept, by venture capital. A venture capital syndicate will spend, for example, $50M to $100 million (M). If the model works well, they'll get through phase two clinical trials and then the drug asset will be bought by pharmaceutical companies who do the phase three clinical trials, which can be hundreds of millions of dollars. This is where our drugs are coming from. Okay? We only got 20 last year, so it's not a lot. But we need -- we need new drugs.

The second point to note about the new approvals last year, if you look at origin of where these molecules came from, half of them are outside of the U.S. Okay? And pretty

interesting. Because I think if you look back 10 years, you would have seen a much higher proportion that originated in the U.S. This tells you that we are in a much more dynamic, a much more competitive environment for innovation.

The third thing to note is personalized medicine and the influence of information technology with biotech. In personalized medicine, we are seeing more focused markets -- meaning drugs get better. They get more specific to particular diseases. And so, by definition, the market size is going to be smaller. This is going to put more stress and strain on allowing investments to pay themselves back; however, without a strong patent system, it will increase that strain. Thanks.

MR. STERNE: Damon, you have a very broad experience with the patent system. You're currently based in Silicon Valley. You're very knowledgeable about what's going on in China. You've been in the electronics area and the university arena. Should we be worried? Why is this subject important? Does this have significant national security and global competitiveness issues?

MR. MATTEO: I can't remember which movie it's from, but there's some line from some famous movie that says "be afraid, be very afraid". And there's not much hyperbola attached to that. If I can just circle back, yes, actually, part of the problem is that it's a bunch of patent attorneys

talking to each other. I think we really need to broaden the scope in multiple dimensions. You know, Paul had mentioned before about the whole notion of the investment community and I think you touched on some of the elements of the ecosystem. I mean, those are two dimensions that have become increasingly important. You know, when I started, I made my practice international by choice because I've spent a lot of time overseas. But now to properly serve my clients, I must do deals overseas. And some of the implications are that I've seen a lot more interest in Europe and in China as places to put intellectual property or value intellectual property, create intellectual property, than certainly in the United States.

And I think, Rob, you had mentioned something about uncertainty. Well, I would actually probably take that one step further, because, you know, we represent people on the creation side and the monetization side and the buy side and the sell side. And I talk to people in the United States and in Europe and in China, and I don't think there's a whole lot of uncertainty. I think they're pretty clear and pretty certain that patents are a diminished value asset. I mean they are an afterthought. You know, I used to do mergers and acquisitions (M&A) and patents used to be an afterthought. And with these large awards that happened early in the 2000s, yeah, they became very important. They came to the forefront.

People were finally acknowledging the value commensurate with intellectual property. You know, to put it in economic terms, they became an actual appropriability mechanism. But now they've fallen back again to the wayside. And I think that's inertia that we really, really need to fight against.

So, you know, from my perspective, you had asked me to speak about China. I spent a lot of time there teaching and doing deals. You know, I'm not a big believer in statistics, but these are -- for those of you who don't spend a lot of time in China, you know, these are some telling things. Under the command economy approach, the 13th five year plan for China indicated that innovation was one of the five key tenets for China's economic development. And in China, the Federal Government can say this is important and thou shalt -- and, generally speaking, people do. So, attendant to that, you've seen year-over-year increases in innovation expenditure by Chinese. Five years ago, they were spending 60 percent less. Now they're at 2.1 percent of GDP. Before they were at 1.2 percent. They've changed some of their intellectual property laws and, in some senses, they're going counter to the United States. So, as of April 1st, Article 25 of the Chinese Patent Law will actually introduce things like software patents and business method patents. So they'll be getting beyond means plus function. Business models to the extent that they're attendant to a technical feature or some

sort of implementation dependency -- they will now actually be in scope.

So it feels to me like the Chinese have learned how powerful intellectual property is. They've wrapped it up as an integral part of their innovation ecosystem. And it is an ecosystem because if you invent great things, but there's no way to monetize them -- you know, we keep forgetting we hold the Patent Office -- rather, the patent practitioner navel gazing about patents and claims. I mean, this is about -- as Paul intimated -- it's a market. And if you can't get people to invest, then there isn't liquidity and people don't acknowledge value, then it all begins to fall apart. And in typical U.S. insular fashion, you know, we view ourselves as "the" market. We are not "the" market anymore. So, in my experience, it may not be statistically significant, but a lot of my business is moving overseas and a lot of the value is being found overseas. So, in terms of litigating patents, for example, in China, if you litigate a patent, typically as a plaintiff, you will prevail 60 percent of the time -- 70 percent of the time if you're a foreign plaintiff against a domestic defendant.

Injunctive relief -- I mean, who thinks injunctive relief in the United States is a real and probable outcome of a litigation? In China, it's upwards of 90 percent of the time that there's a finding of infringement. So some of the

metrics that people use in the legal system and in the business communities, all of the favorable metrics in and around intellectual property, acknowledged as a vehicle for conveying innovation value, you know, to my estimation, they're all starting to move overseas. And if all of those are moving overseas, so is the innovation and so is the money. I think that's something we all need to be painfully aware of.

I'm sorry. I'll get off my soap box now.

MR. STERNE: Peter, we go way back. I remember when you were at Wilson Sonsini, at Intel, and when you met with me as you were starting Intellectual Ventures. We share our friendship with your business partner, Kevin Rivette, author of the seminal IP book *Rembrandts in the Attic*. Please tell us what you think is going on.

MR. DETKIN: Okay. So, I don't know about you folks, but I think we need to raise the energy level here, because for me it's still not yet 6:00 in the morning. These guys are better -- these guys are also from California and better at handling. But we are going to have a little audience participation.

Start with this. Yes, as Rob mentioned, I started my career at Wilson Sonsini. I was a partner there. And one summer, I ran the summer program. Raise your hand if you were a mentee at my summer program and worked for me there? Ah, that would be Michelle Lee. One person raises her hand. I

didn’t warn you about that.

Rob and Paul hit the nail on the head when they point out this is not about patents. Patents are dry dusty documents. This is about inventions. Inventions are valuable. Inventions are -- there are arguments about whether patents represent property, whether they represent a series of liability rules? It’s a wonderful set of arguments for the professors at the various law schools to have. What I know is that patents are assignable, divisible, licensable, descendible -- all aspects of property. And based on the notion that inventions are valuable, Intellectual Ventures decided to invest in them.

And to that end, we formed three sets of funds that enabled us to invest in invention three different ways: by building our own, by partnering with others, and by buying folks inventions. And through these funds -- and don’t worry, this won’t be an advertisement for Intellectual Ventures -- but through these funds -- I’m just trying to set the stage. Through these funds, we invested billions of dollars. I think that’s a good thing. We pumped billions of dollars into the invention economy. That included, by the way, over $600 million to independent inventors and close to a billion to small companies. And along the way, as we did this -- we started back in 2002 -- a market grew up. A lot of participants in the market using lots of different business

models. Some were good, some not so good. Some tried to game the system. That happens in a market. It happens in every market.

Well, there have been a lot of patent debates since then and they've been interesting to say the least. They were dominated a lot more by hysteria and anecdote -- not facts and analysis. It turned out patent lawyers did invent something way before anybody -- eight years before anybody heard of Kellyanne Conway, patent lawyers were coming up with alternative facts. Because there are incumbents who are threatened by the growth of this market. Because it gave a voice to inventors who previously didn't have such a voice. They started talking about how the sky was falling and they said litigation was out of control, even though all data was to the contrary. They said that demand letters were being sent out by the thousands and were shutting down end-users, so the FTC did an analysis -- spent millions of taxpayer dollars. Know what they found? They found one guy who signed two licenses. What was it $20,000, $40,000 total? Something like that. That was good use of money.

They claimed that patents were stifling venture investment, even though all the data is to the contrary and that venture investment was rising. They claimed that fear of patent claims was killing R&D investment, even though nobody could ever actually identify a product that had been killed.

One study claimed that patent assertion entities accounted for 62 percent of litigation in 2012, even though the Government Accountability Office pegged the number about 20 percent. My favorite numbers were there were some studies that said the NPEs cost the economy anywhere between $30B and $80 billion (B) a year, with one person saying all they had to do was an advertisement here in D.C. saying it cost $500 billion over. I don't know how anybody believes these numbers, but these are the numbers that were being presented to our policymakers. We all know the result. There have been a lot of court rulings and legislation that has brought an unhealthy amount of uncertainty to the market. And that's the key -- uncertainty to the market.

Who out here can tell me with any certainty whether a patent that has any software related claim is valid and won't undergo years of analysis and navel gazing, first here in the Patent Office and then in courts? Anybody want to raise their hand on that one? I got to be -- okay, here's the audience participation Silicon Valley style.

In Silicon Valley, we have a phrase called "eating your own dog food." What that means is when a start-up is ready to go for financing, they go and ask for money and if one of the first things they say is this product is so good, we use it ourselves. Hopefully you're not actually making dog food. So, here's the hypothetical. Everybody in this room

has a retirement fund of some kind -- either run by Fidelity or Vanguard. Let's say they came to you and said we're changing our model and you now have a choice. You have to invest in one of three buckets: a bucket of rights in Asian intellectual property rights, U.S. intellectual property rights that are made right here in this building, or European patent rights. Okay, now I do want you to participate -- more than just Michelle.

Raise your hand if you would -- you know, over the next five to ten year investment period, invest in the bucket of Asian intellectual property rights. I see a couple hands. I see a couple shaking heads. Okay. Raise your hand if you would invest in European invention rights. The panel is supposed to participate, too, by the way. Okay. I see a lot more hands. Okay, raise your hands if it would be U.S. That's the sign of a problem, folks. The winner was Europe. U.S. came in second and Asia third. And you're the folks that produce the rights in the United States. That's the sign we have a problem.

The fact is that as -- you know, for the reason you just saw -- investment in the United States is way down and going up in -- in Europe for the short term, and I saw some shaking heads -- especially this gentleman right here was very emphatic on not investing in Asia. For the longer term, I would put some money there. But, again, only as an asset

allocation. If I had a choice between one of the three, I agree with you.

And, by the way, this is not just a patent thing. To return to what Damon was saying, I do some consulting in Silicon Valley. I see it all the time. Right now you have a lot of entrepreneurs who are completely disheartened by the ability to protect their inventions in the United States and are simply moving on and saying I've got this thing and it's -- if I come out with this, I know that an incumbent is going to use it. It's a great thing, but I can't get it to market fast enough to get a first mover advantage. If I can, that's a different story. But if it's a great technology, that someone else -- once they see it -- they can quickly replicate and I can't get any protection for it, I'm not going to bother. And, unfortunately, I have to go ahead and tell them you're not going to get the protection you need for that.

MR. STERNE: Paul Evans, you have both a law degree and an MBA, have been in private practice and corporate IP practice. You've seen this cycle unfold. As in-house Chief Intellectual Property Officer of a major fast-growing company in Salt Lake City, what are your observations?

MR. EVANS: To give you some context to answer that question, I have spent the majority of my career working at private equity-backed technology companies, and I have seen throughout my career where patents have been absolutely key to

the investment and the backing of those companies, as Judge Michel pointed out. The reason for that is in order for an investor to put money into a company, they have to know or have high confidence that if I put my money in this company, that it's going to be protected, that a much larger company can't just steal that technology or copy it. Patents have historically created an important competitive advantage in the marketplace. I'll give you a case in point to answer your question.

I had a recent conversation with the managing director of a private equity firm that manages about $10 billion in assets. I was at one of their portfolio companies previously that we ultimately sold to a large multi-national company. The company was a textbook case of how to succeed by creating a strong patent portfolio. We had some of the foundational patents in that particular industry. We established either license or manufacturing deals with all of the large multi-national companies in that space. We ultimately sold to one of our competitors. After that transaction, one of their executives said to me: "I just want you to know, this transaction would not have happened without your patent portfolio. He said, they had their in-house and outside patent counsel look at our portfolio to figure out if there was a way to design around it. After lengthy analysis, they came back and said you have to buy it."

During my recent conversation with the managing director of a private equity firm, we talked about this transaction and both agreed the transaction would not likely happen today. He said, let me tell you where we're at today with regard to patents. We previously invested in companies because, first and foremost, they had a strong IP position. Today they give zero value to patents. He further said, not only do we ascribe no value to the patents, but we risk-adjust the revenues because of patents. And the reason for that is what they've seen in the past few years as they've watched the marketplace -- and he gave me an example. They were looking at a company to invest in and ultimately decided not to. That company later went bankrupt because they found themselves in a situation where a large multi-national company made the decision to compete, and the smaller company had insufficient resources to fund a protracted patent infringement suit.

So his concern is how can they now have the confidence to invest in small technology-based companies in an environment of so much uncertainty around the ability to stop infringers with patents. When their portfolio companies consider the decision to patent a particular technology, their first question now is whether they can protect it as a trade secret rather than a patent. This is due to the current environment of uncertainty.

So you may ask yourself, why are we talking about

investment. Why is this important? It's important because the majority of the businesses in this country -- over 99 percent -- are small businesses. And if that investment is dried up, that's going to have a direct effect on job creation. And that's what this individual was saying to me. He said, we're actually backing off investments now. It's much more difficult for us to make an investment decision because of the current landscape and this is having an effect on job creation. The latest estimates are about 85 percent of the small businesses in this country are technology based. And so as my distinguished colleagues here are highlighting, it is a very significant concern for this country. If we can't protect the inventions and the innovations being generated, and, more importantly, provide the incentives for the investment community to invest in those technologies, those investments will be made elsewhere. And, it's going to affect the jobs in this country.

MR. STERNE: Thank you, Paul. We now need to look at what's happening with the university world. As we know, universities have been the backbone of basic research in the United States. We have led the world with our university system. We all know celebrated stories of universities making fundamental breakthroughs and profiting from those breakthroughs through the U.S. patent system so that they can fund the next round of innovation by their faculty and

students. But is that going to happen now in this environment? Chris Gallagher, our next panelist, is a true patriot when it comes to dealing with protecting the university's best interests and their innovation cycle. Chris, tell us what's going on and how our patent system is doing?

MR. GALLAGHER: Thank you, Rob, and I apologize for being late. I got caught on the Metro. But when you hear about investors from the real world talking about whether or not they can invest in patent and products and processes, and then move to the front end of that process, which is in the university tech transfer -- often is the university tech transfer office, where they are trying to commercialize promising results from basic science quite often that was funded by the Congress to the tune of $130+ billion. The commercialization process becomes very important, because if you can't do it, then you can't get the funding through this cycle to the public to whom it's intended -- or for whom it's intended to benefit.

So I think of commercialization as a bridge. And what we just heard over here was the off-ramp for that bridge. And that off-ramp is further complexified now in the life science area by pricing questions. Who is going to control pricing? Is pricing going to be interfered with? No one knows the answer to that, except that everybody wants it.

But, like the ACA, nobody knows quite how to do it, but there will be a lot of bills to do that. And just those bills alone make this whole investment side of the bridge -- the off-ramp -- more difficult, more uncertain, and more risk adjustment, as Paul says.

Now the on-side of the ramp is this $130 billion, which is in the non-military, discretionary spending of the U.S. budget -- one-third of that budget. It's not entitlements. It's not mandatory. It's $54 billion added for defense and the rest is to be picked up by everything else. Now you better believe that universities are wondering whether that low-hanging $130 billion annual fruit is going to get picked off by someone else. And we're not talking about AmeriCorps and Head Start and so forth. We're talking about State and other places that -- you know, AID. So that situation is extremely severe.

Now I say that because the investor comes to a university. If you get one, you're lucky. Two, you're in heaven. But, you know, two actually competing. But the fact is that the system is breaking down and universities don't really want to commercialize to make money on royalties. They want to get the grants. So at some point, Congress is going to stop giving the grants or the deficit hawks are going to take the money away. Now that national innovation ecosystem is based around these federal grants for research, so they're

really crucial.

I just want to point out one more thing. I realize you all came here to learn more about patents, but we're up here now because we want you to understand that the structure that you're stepping into is getting pretty rickety and it may not last. Just think of the guy who stepped on a boat and the dock sailed away. That can happen here. You have to pay attention to policy and you have to pay attention to patents and they both go together. It used to be you could just sort of take the system for granted, but you can't anymore.

There are some green shoots, if you will. Legislation has passed in the House which enables the courts to ignore the Chevron doctrine and just proceed ahead in. Gorsuch will be very strong on that issue.

There's another issue called state oil. As you may know, patents have now been declared because of failure to get -- they have been declared public rights, not private property, not private property that one might invest in. This means that it can easily -- what you have can easily be taken away, not just by changes in the Supreme Court, but by changes in law. And the challenges in the IPR come at the end of all the expenditures. So you can understand why it's kind of perilous.

What I think we want to impart to you and really the patent bar, is that you weren't deeply involved when AIA

passed, but you are involved now whether you choose to be or not and you really have to go back to where you came from and try and energize people to communicate directly with their Congressional delegations. I get into the university business not because the university trade associations weren't doing a good job, but because they could only do so much. And my job -- self-appointed -- was to get universities to contact their Congressional delegations in their own districts or in Washington, but home state university participation. Now universities are complex animals and they're not all the same. But I have a blog -- it's called IPStrategic.com -- and I send it out to these people and they read it and they get comfortable. But it's very important.

So the last sort of university green shoot is recently, in a Florida case, PTAB ruled that the 11th Amendment protected state-chartered universities from exposure to IPR. Interestingly enough, on the theory that it's just like a trial. Now they spent 37 pages doing this, but they did it and they did it perhaps because the district court in the same matter had come out the same way. But that means that we have now a group of state-charted universities at least who cannot be attacked in IPR. And let's see if they turn into trolls. Let's see if they turn into, you know, ravenous NPEs. Well, let's just see if that whole troll issue that Peter was talking about was really a rouse and needs to be put aside

while we worry about more important things like efficient infringement and maintenance fees, which pays for almost half of what goes on in this building. There are big issues at stake. They are policy issues. Congress will decide most of them. They're not inclined to listen, but they will listen to you if you become more active. So that's my pitch.

MR. STERNE: Thank you. Very important perspective considering how quickly things have changed. The innovation cycle in many industries is extremely fast now. It's moving at a faster and faster rate. The Chinese, for example, are coming on extremely strong. So, Damon, from where you sit as someone who bridges the gap between the U.S. and China, is the U.S. patent system capable of being fast and efficient enough to protect investment in this country by small and medium size enterprises or, as some of the panelists have suggested, innovation is going to move overseas -- outside the U.S.?

MR. MATTEO: Yes. It's all that's wrapped up in the "yes" that's really the difficult part. As it stands now, I don't actually believe that to be the case. And it's not just the Patent Office, it's the whole, you know, IP ecosystem here in the United States. I think we need to be better at capturing innovation, better at, you know, sort of the -- to oversimplify -- it's the creation and the liquidation. It is the market operating effectively and efficiently. To give you a little cultural vignette, I had a -- in fact, it was a

Chinese client, who was asking me to explain a U.S. business practice to them. And the way I explained it was, okay, here's the deal. You rob a bank and if you get caught, maybe you have to give back some of the money. Anybody care to take a wild guess what business practice I was describing for them? Yeah, efficient infringement. Exactly. So, basically they're all saying sign me up.

So if the Chinese and everybody else is recognizing the gaping holes in the whole creation management monetization lifecycle of innovation and intellectual property in the United States, you can rest assured that everybody else is as well. So, I mean, we need some foundational changes in the way we approach this. And, again, I hate to keep invoking the ecosystem expression, but I deeply believe that's the case. If we lock down one of the links in the chain -- to mix metaphors -- but we don't address the others -- so if we -- if the U.S. ratchets -- in fact, over the last five years, U.S. R&D has been basically flat in terms of a percentage of GDP. Even if we ratchet that up, but we don't address how patents are created and ultimately recognized as a monetization vehicle or as a market instrument, well then we're wasting our time.

MR. DETKIN: I'd like to add to that analogy. It's a great analogy -- the bank robbery -- because you not only get to say whether you get caught, but if you get caught,

you'll then be able to argue to the Federal Reserve that the bank really shouldn't have existed in the first place. Therefore -- then if that fails, you get to argue to them again that their certificate never should have issued, because it's a different ground than the first time you argued. Then you could argue that the money was improperly issued to the bank and never should -- you have all these administrative ways. I mean, Rob can go -- I've heard Rob go on talking about the IPR process. You know, challenging it in the Patent Office is fine, but constant challenging, where there's a never ending stream of challenges, that's just not fair to the patent owner. That's not fair to the bank owner in this particular case. And then you first get to the question of whether you actually did it. And then, after all that, as he said, you might actually get back a portion of it. It's hard not to sign up for that one.

MR. STONE: One thing to add on the ecosystem concept. I regularly get asked by investors and business people from other countries -- how do you guys do it? The U.S. is the envy of most of the world for creating new businesses, new opportunities, new products, historically. We are the envy. People ask me how do you do that? How does that happen? And it is an ecosystem. I think about the universities a lot because -- if I looked at our portfolio, at least 75 percent of our product opportunities originated at

universities. One of the key aspects that was seminal in creating this ecosystem is the Bayh-Dole Act. The ability for universities to take their innovations and transfer them through technology licensing into private companies is a win-win relationship. But foundational to Bayh-Dole and that part of the ecosystem are patents, right? If you don't have patent protection that is sufficiently broad, there will be nothing to transfer from the universities and they are so foundational to our ecosystem across the board -- at the on-ramp, as Chris said -- to the exit opportunity off-ramp and everything in between -- all the investment that goes in along the way.

I like this analogy and this concept on the ecosystem, and patents are just foundational to that.

MR. GALLAGHER: On the ecosystem, I think that's a word that means interdependent components -- some of them are called keystones. One of the keystones, obviously, is a patent. And another is investment. Then another is energy usually -- if it's a coral reef or it's a jungle. That's how innovation happens. And when seeing these pieces -- these keystones -- drop out, just as Paul said, and we don't know if we're dead men walking or if it can be recovered, but we're going to have to start coming back. We're going to have to start improving on what was left out.

The universities suffered greatly under AIA. They lost their grace period. They switched to first-to-file.

They're whole system really fell apart. They couldn't go out to conferences and do all the things that universities do. And that's bad, but they could survive. But the present system where the investors are backing away -- oh, some of the robust ones will do okay, but the vast, flyover country where good patents come from is in serious trouble in university world. And that's not our entire ecosystem, but it's a big chunk of it. And it itself is a keystone.

MR. EVANS: I like the reference to the ecosystem. So it's not just about getting a strong patent, but it's being able to enforce it. From the perspective of a small business, if you're looking at a scenario where you believe a competitor is infringing your patent, the decision to bring a patent infringement suit is a multi-million dollar decision. And when the company is looking at that decision, they also understand the new playbook for patent infringement is the accused infringer will immediately put the asserted patents into IPR -- and not with just one IPR. Let's say, for example, you assert three patents and then you end up with nine or more IPRs. The cost for each one of those IPRs is about $200,000-$300,000.

Statistically, roughly 70 percent of those IPRs are instituted on. Of those that go to a final written decision, about 80 percent of the claims are killed. So when a company is looking at that decision, one could argue it makes no

financial sense to pursue patent infringement litigation. Going back to my comment earlier, that's why this is such a difficult situation for the investment community backing companies that require strong patent protection to ensure their survival. A strong patent ecosystem is a very critical aspect for the investment community.

MR. DETKIN: Rob's original question to Damon was can the U.S. system compete with what's happening now in China and Europe. And right now, you know, the market is voting with its feet. And it's voting with its wallet. Filings are down here, while they are up in Europe and Asia, as Rob gave you the statistics before. Enforcement actions are down here -- down dramatically, actually -- and they are up across Europe. And I'm seeing that, you know, from my vantage point on the streets, investments and licensing activity is much stronger over there, which, as a practical matter, frankly, means that, you know, there's less need for patent examiners at the end of the day. I'm sorry to say that to this group, but there's a decreasing need for the folks in this room.

But, again, the question was can the U.S. compete? And the answer is absolutely -- for the exact reasons that Paul -- and it's easy to say Paul, because half these people are named Paul -- but for the reasons that Paul lays out, which is that not every problem is in Congress or the courts. If the PTO could streamline its procedures and make it -- I

mean you have every right to do the work you do, of course, and I encourage you and applaud you for the work that you do and we know that you're trying your hardest. But if it can be streamlined so that it doesn't take forever and it doesn't take three or four challenges to find out if you have an asset that is worth investing in, that would make the investor market reconsider sending its money to another continent.

JUDGE MICHEL: Just consider this set of numbers. There are about two million patents in force in America today. The majority of them actually have no present commercial value and no predicted commercial value that's very reliable. But the subset -- let's say it's half a million -- do have present or future commercial value. Out of that half million, the vast majority involve either software implementation or are in the health science area. Almost all of those patents are under a huge cloud of uncertainty about whether they were even eligible subject matter because of this regime the Supreme Court has imposed on the country. And, ironically, in China and Europe, eligibility has been broadened at the same time here the Supreme Court has sharply narrowed it.

But the worst problem isn't which patents are definitely invalid as ineligible. The worst problem is there are hundreds of thousands, by my estimate, of patents where I can't tell looking at the patent, based on Alice and Mayo, whether the subject matter claimed is eligible or not. So if

I can't tell, how can anybody tell and what does that do to the incentives on investment? So that alone is a catastrophic problem that could apparently only be solved by legislation since the Supreme Court denied cert in the Sequenom case and in other cases that would have given them a chance to revisit the Alice-Mayo regime. So my impression is the Supreme Court is not interested -- at least not any time soon -- in revisiting, much less revising, the Alice-Mayo disaster. So that means we're stuck with it unless Congress fixes it. So I now agree with the Intellectual Property Owner's proposal to legislate -- effectively overruling Alice and Mayo. That's a huge part of the cause of uncertainty and the IPRs are most of the rest of the cause of uncertainty. And then, as has been mentioned, the slowness in getting patents in the first place, even when there aren't eligibility problems, is yet another problem.

They're all solvable, but it will take concerted effort by every single stakeholder, every single person in the vast patent community. So we are appealing to all of you to get personally involved.

MR. STONE: I'm glad you mentioned the Supreme Court decisions. And for me, in the biotech space, when Myriad came out and then Mayo -- the way I explained it to my kids, I said, you know, you ever had that experience when you're playing Monopoly and you're about an hour and a half into the

game, and there's red houses and green houses all over the place and money is going around and some people are doing well, some people are challenged? Then somebody gets up and they bump the board and the stuff just flies everywhere. I said, that's what just happened in the patent system for life science companies -- except it's not a game. These are real companies that have tens, twenties, hundreds of employees. They've invested millions of dollars on technologies that they thought were fundamentally protected.

For example, with Myriad, claims for a naturally-existing, but isolated chemical entity, for example, a segment of a protein, we thought was foundational and protecting against competitors. Or with Mayo, with diagnostic businesses that were helping to identify patients that were at risk of a particular disease and/or best treatable by a particular pharmaceutical. I mean that's the differences. This isn't a game. These are people's lives and companies that are going out of business. And while that company just failed, there goes 30 families that no longer have a job. That one is not going to make it. We can't get any more investment. We've reached the end of our reserves. We can't get new people to come in because we don't have patent protection. Competitors are coming up.

This is real. And, to me, the Supreme Court decisions on eligibility and a framework they set out where,

by any rational standard, is such a confluence now of what used to be considered subject matter and what used to be considered an obviousness determination. And now there's this confluence at some stage of the analysis, depending on what path you go on. At the end of the day, you just don't know what you have. Which then you have back-up strategies and you do your best. I always say, in time of war, you're making love in the trenches. You're doing what you can. But it fundamentally goes to overall value.

JUDGE MICHEL: We should also keep in mind the revolution caused 11 years ago by the eBay decision. The constitutional language suggests that it's a right to exclude. The Supreme Court eBay decision is very interesting because the unanimous majority decision doesn't say anything at all. And district judges have had to choose between two concurring opinions -- one by Chief Justice Roberts suggesting that in most cases injunctions were appropriate, and one by Justice Kennedy suggesting that, depending on the nature of the business model of the patent owner, injunctions were not appropriate. And for reasons I cannot explain to you, but since there's criticism of the Patent Office in the air, I want to be sure to criticize not only the Supreme Court, which I have in the Alice-Mayo area and also now in the eBay area, but also the district judges, because they've taken one side of the story from one concurring opinion in the eBay case and

ignored the other side. So now injunctions are extremely difficult to get, except in head-to-head competition of exact competitors for comparable products, which is a very small portion of the total enforcement landscape. So we've taken a right to exclude and made it not a right to exclude.

MR. DETKIN: Even then, Apple couldn't get the injunction. Even then, Apple couldn't get an injunction against Samsung. Head-to-head products -- I'm sorry, head-to-head competitors, same products. They couldn't get one.

MR. MATTEO: If I can circle back to your original question. If you buy into the whole ecosystem metaphor. One of the things implicit in that is small changes to any element of the system can have huge perturbations across the whole system. And the other one is lag effects attended to any change. So those make it difficult to comprehend the impact of the changes that we're making now, for example, by virtue of legislation and some of these court decisions. And, while it's not a perfect analogy, the one I often invoke here is if you go back 50 years and you look at Xerox, the antitrust people thought they were doing a great thing with their consent to create -- forcing Xerox to compulsorily licensing broadly xerographic technology. Well, if you look at the implications of that, that's very much like saying well, patents don't matter. You guys can all use these at no or a minor tax. The result of that over the next 20 years was the

complete evisceration of our presence in that industry. So now we have a marginal and shrinking presence in an industry that we created.

MR. GALLAGHER: This business of compulsory licensing is really important because that's what you get if you don't get an injunction. You get a judge. You get a judicial pricing of your product. And that may be very different from a market pricing of that product and if you could negotiate up front, you might like Qualcomm built into your licensing process, things that protect you even further and to figure out where they can go and so forth. All of those contract type items disappear and it just becomes a guess at a royalty. And as was pointed out earlier, it's generally speaking to not be less than what's reasonable. Well, why wouldn't you infringe? Why wouldn't you efficiently infringe on the technical side?

ICT makers have two or three years -- sometimes less -- of relevancy in the markets they're pursuing. They're fighting each other with patents in order to protect market share. But what's been going on, on the side, is they have gathered together to reduce the component product piece of what they produce. In other words, they want a bigger slice of the pie of the product that's ultimately sold at the Apple store or wherever. So they're very much allied on that crusade and they were throughout House Bill HR9 – the

Innovation Act, which was a terrible piece of legislation, passed 325 to -- I don't know -- 41 or something, but then was killed in the Senate and was stalled.

But we came very close to death at that point. And by we, I don't mean just the universities. I mean we who, in this room, are engaged in an ecosystem that of which the national ecosystem is a fundamental part. So it pays -- it's important to pay attention. It's important to be ready and it's important to get involved. That's what I tell universities and I'm really telling you folks the same thing. We need you to keep the system to work.

MR. STERNE: Chapter 2 of *Patent Office Litigation*, second edition, in your course material along with some other very important writings, is based over 200 interviews I did with people like our panelists and others around the globe, particularly in the U.S. and Europe.

One thing I addressed is whether there is an adequate return on investment using our patent system to protect funded innovation. Should investors believe that they have enough certainty and predictability from our patent system to make informed and prudent investment decisions? I came to the conclusion that in some situations today if I was investing my money and relying on the U.S. patent system to protect technology, that I would not do it. Why wouldn't I do it? Because, as you'll see in Chapter 2, in the fastest

courts in this country, it takes 54 months and you have to win every step of the way in order to get a compulsory license. That does not make prudent investment sense.

I find the deficiencies in the U.S patent system embarrassing to explain to many of my clients these days. I feel like I am not adding value as a professional. While I am doing well professionally, representing clients at the PTAB, in the Courts, and at the ITC, am I really protecting inventors properly? What am I doing for the true U.S. innovator? For the entrepreneur like myself who started their own company? What am I doing? Am I just taking their money? Do they understand the uncertainty and weaknesses of the U.S patent system today?

There's a lot of misinformation about the patent system these days that is spread using the patent troll narrative. What is being said might have been correct 10 years ago, but it's not correct today. And this change is part of our panel discussion which we have been having for the last three years at this conference. What is clear is that things are not getting better for innovators in the United States who are relying on the U.S. patent system and who are creating a large bulk of the innovation in our country. We need to sound the alarm about what is happening to protect this critical portion of our innovation ecosystem.

Our job is to protect innovation in our country.

Why? It's jobs. It's industrial competitiveness. And in the end, it is national security. If we don't innovate and others do, how are we going to protect ourselves where there are drones, artificial intelligence, big data, killer robots and the internet of things? And it goes on and on and on.

This is a scary world and we, as patent practitioners have an affirmative duty to the innovation public. The innovation public has a constitutional right. Jefferson and Madison put it into the Constitution for a reason: to encourage innovation in this country.

You are hearing from our panelists and others on the front lines who are investing money from university and retirement funds as well as angel investors, people who really have to be able to assess the return on investment, that they are worried that the U.S. patent system is not doing its job for these innovators.

It's correct that there are some bad patents out there. But of the 6,000+ proceedings at the PTAB, do these all involve bad patents? I think not based on my extensive experience. And why is the kill rate at the PTAB so high of these patents? In fact, many of the patents challenged now at the PTAB are the most valuable and yet, the kill rate at the PTAB of patents hasn't really gone down!

Is the USPTO still issuing bad patents? Hard to explain to the public. One of the things that people find

amazing when I go to Europe and Asia is that the USPTO issues patents under new statutory subject matter guidelines (§101) and yet the PTAB can immediately invalidate them on the ground of the guidelines as if the examination never occurred. Maybe we should just have a registration system at the USPTO and a post-grant challenge process at the PTAB?

So put yourself in your client's shoes, practitioners, and ask yourself the question -- what are we going to do about this? I now want to ask each one of our panelists to give us their recommendations. Let's start with our Chief Judge.

JUDGE MICHEL: I think that the power of the pen is the strongest power available to patent lawyers or lawyers generally. So I challenge everyone in the patent community to write. Write articles. Write op-ed pieces, in addition to writing members of Congress whose view of the landscape is a decade out of date. They still think that the problem is frivolous law suits. There was a serious problem years ago of frivolous law suits. It's not entirely eliminated, but it's mostly eliminated by court reforms and actions. But the Congress and the other policy makers are not aware of the changes in the courthouse and have this 10 year, out-of-date view. The only way that that can be updated is if the people like you who know, write.

MR. STONE: I think one of the most important things

that everyone in this room can do as part of your day-to-day practice, regardless of how your practice is oriented -- whether you're at the Patent Office examining patents, whether you're at the PTAB, whether you're a patent drafter, prosecutor or litigator -- is to focus on quality. One of the key and constant threads through this whole discussion is about quality. And part of quality to me is educating your clients on a strategy that's focused that way, right? I mean we all know you can write a patent for $2,000 and file it -- but if you haven't searched the prior art, if you haven't really contemplated subject matter eligibility, if you haven't really thought about scope and fall back positions.

We know what a quality patent is, but yet we often don't instruct our clients. And I get it. Some clients have that strategy. But for me, I think it's something we could all focus on that would be meaningful to help the U.S. patent system. And it goes throughout drafting, prosecution, enforcement, and licensing.

MR. MATTEO: For me, I think that would be invoking a more of a financial dynamics of investment returns mentality. In my firm, for example, we don't talk about patents per se. We talk about innovation assets. Think about your client or think about the patent that you're prosecuting as an element in a broader investment strategy by your client in innovation. And, right now, that might mean that you want

to stilt the investment more toward European or Chinese patents or patents in Japan. Or maybe we want to dial down the patent investment because we're not going to be able to get returns. But I think if we constantly put the dynamics of investments and returns mentality into the work we're doing, we're starting to see patents for what they are and should be: a commercial instrument.

MR. DETKIN: So I'm going to end where I began, which is it bothers me no end that in 10 years of patent law debates about how the system needs to be changed, there's a lot of hysteria and a lot of stories, but very little data. I think it's very important for those who are the policymakers in the room and those who talk to the policymakers in the room, and those who are asked about the patent system -- so that's pretty much everybody in the room -- that you rely on data, not anecdotes when considering what changes should be made.

Every system can be improved. There's no question about that. And there are some ideas out there that are legitimate improvements to a system. But to borrow the phrase of a famous Chicagoan, let's mend it. Let's not end it.

MR. EVANS: Going back to the ecosystem analogy, this is a problem that we need to address from a global standpoint. If the concern is over the quality of patents, then we should focus on that up front, not on the back end.

There are a lot of recommendations out there such as increasing examiner time for searching. We can do things from the patent practitioner standpoint in terms of patent searching to ensure that we submit quality applications that distinguish over the prior art. But, importantly, we need to fix the ecosystem. We need to create a system which can be viewed with better certainty by the investment community. It also needs to be properly balanced, whereas today the financial onus is on the patent owner. And so looking at it from the small business perspective, it needs to be financially viable, and it needs to provide better certainty. These are the areas that need to be focused on.

MR. GALLAGHER: Rob sort of stole my thunder because, once again, I'm going to say get involved. But I want to point out something that -- I realize that getting involved is tough. You don't have time. You don't want to be bad mouthing people that you may need some day for clients. But on this pricing issue, I doubt that there are many in this room who support the pharmaceutical abuses with EpiPen and Durapren and some of those things. But those are what they are and prices are high in life science. But life science is really the most complex, the most difficult in clinical tests. If you're in clinical testing, you've got a 12 percent statistical chance of getting approved by the FDA -- 12 percent. Now by that time, you've spent a billion dollars,

six or seven or eight years. Opportunity cost is considerable.

So what I want to do is just get you to understand that it's not going to be easy to get involved. Nobody wants to say, gee, price controls coming out of nowhere can be harmful. But I will tell you that the politically driven decision to impose price controls will be governed by the success of the product. So you get all through everything we've talked about and it's really successful, then everybody wants it. And the way to get it is to lower the price. And the way to lower the price if we have price controls coming out of the 115th Congress, is to enact them. It could by dual margin, could be importation. There's a bunch of different initiatives underway. But this is going to be a difficult test to see whether or not this ecosystem can maintain its integrity without having at the end the penalty of success, which will be politically driven price controls.

MR. STERNE: So we're at the end. It's gone quickly, as we expected, but I think we've done well. We've laid out a lot of issues and a lot of things that we want you to think about.

I want to thank USPTO Director Lee and Chief Judge Ruschke for being here today, along with Joe Matal, who was very involved with the drafting of the AIA, and others from the PTO. We need your help. The patent community needs to

own this situation. We need to make our patent system work again optimally for the innovators of America who are the target of the power given to Congress under Article 1, Section 8, Clause 8 of our Constitution.

Thank you.

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