FEDERAL TRADE COMMISSION

COMPETITION AND CONSUMER PROTECTION
IN THE 21ST CENTURY

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FEDERAL TRADE COMMISSION

I N D E X

P R O C E E D I N G S

WELCOME AND INTRODUCTORY REMARKS

MS. MUNCK: All right. Well, thank you very much for joining us this morning. My name is Suzanne Munck, and I am the Federal Trade Commission's Chief Counsel for Intellectual Property. I am also the Deputy Director of its Office of Policy Planning. And together with my colleagues, we are very grateful that you have joined us today.

I would like to express special gratitude to our panelists who have traveled from all over the United States to join us. And I am looking forward to a very productive session.

Tomorrow, we will be joined by United States Patent and Trademark Office Commissioner for Patents Drew Hirshfeld and the Acting Chief PTAB Judge, Scott Boalick. I want to highlight that point because I believe that the PTO and the FTC have worked together in every hearing that we have held to look at issues at the intersection of antitrust and intellectual property. I think that is very important because one of the themes that you will hear, particularly from this morning's panel, is that innovation is complex. It requires a number of steps from idea to development to commercialization.

Intellectual property policy also is complex. It does not happen through the work of only the FTC or only other agencies. We all come together to make sure that we are looking for policies that do the best job of promoting innovation and protecting U.S. consumers.

Tomorrow afternoon, we will close with remarks from Commissioner Rebecca Kelly Slaughter. I think that is particularly interesting because Commissioner Slaughter played a role in the development of the America Invents Act.

So, why is the FTC examining innovation and intellectual property policy? Well, as we have said for a number of years, innovation benefits consumers through the development of new products, processes, and services that improve lives and address unmet needs. Innovation rights are vital to the U.S. economy. In 2016, the U.S. Government reported that IP-intensive industries support at least 45 million U.S. jobs and contribute more than $6 trillion to or slightly more than 38 percent of U.S. gross domestic product.

For more than 20 years, the FTC has used its policy and enforcement tools to engage with issues at the intersection of antitrust and intellectual

property. We have convened hearings such as this to look at the role of patent quality, to look at the role of antitrust in promoting innovation. We have looked at the IP marketplace and remedies issues. And we have looked at more specific issues such as patent assertion entities and other IP concerns.

Through that work, we have issued reports, drafted amicus briefs, contributed to policy discussions among interagency groups, and I want to highlight that point, because you might think, how is what I am doing here today, sitting here today, going to contribute to the overall policy dialogue? And I think that, if you go back and you look at the FTC's reports, you can see a direct link from what panelists say on the dais to the FTC's summary of those panel positions, to recommendations, to supporting our colleagues in the Solicitor General's Office when it comes to addressing those issues before the Supreme Court. So there is a real trend from what we are doing here today to overall policy.

Now, we should not sit on our laurels. When Chairman Simons convened these overall hearings, he noted that a fundamental characteristic of a strong institution is a willingness to engage with new ideas and, in our case, changes in markets and

business-to-business and business-to-consumer relationships. This decade has brought several changes to intellectual property laws in the United States. So it is an opportune time to explore the role of intellectual property in promoting innovation.

For example, the America Invents Act was signed into law in 2011. The AIA is the most significant legislative change to the patent system since the Patent Act of 1952. It moved the United States from a first-to-invent system to a first-to-file system. It established new procedures to challenge issued patents and it authorized the USPTO director to set its own fees.

Within the last ten years, we have also seen several significant cases from the Supreme Court. These decisions have affected a wide range of issues from patent eligibility to fee shifting, from claim construction to venue and myriad other issues.

On the copyright side, parties continue to examine the application of the Digital Millennium Copyright Act, licensing issues, and the fair use doctrine. Content models are shifting from downloading to streaming.

With Chairman Simons' objective in mind, we

have gathered expert panels of academics, economists, and industry members to explore key questions at the intersection of innovation and intellectual property. This morning, we will hear from a panel of expert academics who will talk about the role of government in promoting innovation and the various ways that patents are used in different industries. I think you will hear that there is not a homogeneous approach.

Our second panel this morning will turn to business considerations. I am thrilled that we have been able to assemble a group of practitioners to talk about the role of innovation in business decisions, particularly in early stage investment and venture capital issues.

Then, this afternoon, we will move to the FTC's first copyright panel. We have noticed over time a shift to copyright issues, and it is time for us to stop and ask, what is the relationship between competition issues and copyright issues? So we will be surveying an expert panel this afternoon.

Tomorrow, as I mentioned, we will begin with a keynote from Commissioner Hirshfeld. Then we will move into an exploration of emerging issues in patent quality and patent litigation. We will have a panel of trade associations who will talk to us about how

these changes have affected their members. One reason why we decided to collect trade associations in that panel is that we wanted to make sure that we were reaching the broadest sector of markets.

Finally, we will close with a panel of economists exploring the literature in this space and policy changes of which the FTC should be aware. Finally, we will close with keynote remarks from Commissioner Slaughter.

As you listen today, please think about questions that you have. We will have people walking through the audience to take your questions. They can come up to us. We also are trying to be very open in collecting public comments in this space. A number of you have submitted public comments already. I have read each of them and thought of them as we began to develop today's program. The public comment period for this hearing will close on December 21st.

Now, before I begin the substantive program, I would like to cover a few administrative matters. If an emergency occurs, please follow the instructions over the building's PA system. If we need to evacuate the building, please leave in an orderly manner through the 7th Street exit. After leaving the building, please turn left and proceed down 7th Street

across E Street to the FTC emergency assembly area. Please remain there until instructed to return to the building.

If you have received an FTC's visitor's badge, we reuse those. Please turn that into the staff when you leave the building. And if you notice any suspicious activity, please alert building security.

For lunch, there is a cafeteria in the building at the other end of this floor. It will close at 3:00 p.m. Restrooms are located just around the hall.

And please be advised that this event is photographed and webcast, and recorded with huge thanks to our amazing tech team. By participating in this event, you are agreeing that your image and anything you say or submit may be posted indefinitely at FTC.gov or one of the FTC's social media sites. The webcast recording as well as a transcript of these proceedings will be available on the FTC's webpage shortly after this event.

If you have any other questions, please feel free to reach out to me or any of my FTC colleagues. We are here to help and very, very grateful that you have joined us either in person or via webcast.

AN OVERVIEW OF INNOVATION AND IP POLICY

So with that, I will take my seat and introduce the panel. I am so excited for today, so excited for this discussion. And I am just thrilled that you are all here. Thank you very much.

So now, I am moving over here. This morning, we are joined, as I mentioned, by several exceptional academics in the space of innovation. To my left is Professor Tom Cotter of the University of Minnesota Law School. Professor Cotter has recently completed a book that explores the role of intellectual property in different market sectors.

Next, we have Professor Rai. Professor Rai is at the Duke University School of Law. If you look at her bio, she has tremendous experience both in government and in academia, and so I think is well positioned to think about the policy objectives of government and the tools that we can use to achieve those.

Next, we have Professor Pian Shu from the Georgia Institute of Technology, Scheller College of Business. She will present information today on innovation, trade, and the role of China in this dialogue.

Finally, we have Professor Bill Kovacic,

former Chairman of the Federal Trade Commission. I was talking to Bill this morning and remarking on how he has been a stalwart in the FTC hearings. And he has a particular ability, I think, to take a critical eye to the FTC, but also make recommendations that will help us best use our tools to promote innovation and to protect consumers.

So with that, I would like to turn it over to our panelists who will each give a ten-minute presentation, and then we will have a question-and-answer period. Thank you.

MR. COTTER: Well, thank you very much, Suzanne, for inviting me to participate in this panel today. I would like to spend my ten minutes talking a little bit about the role of patents and promoting innovation and briefly summarizing the standard economic theory of patents as an incentive to invent and then talk about some of the empirical evidence as summarized in my recent book. And then I will close with a few observations about the need to balance the benefits and the costs of patent protection.

So the standard theory is that the cost of developing a new invention in terms of time, money, resources, uncertainty, often is very high, whereas the cost of copying often is comparatively low. And

when these conditions hold, then from a purely self-interested perspective, it would be more rational to copy than to invent. But if everybody follows that strategy and becomes a free rider, then nothing is invented.

Now, of course, those conditions will not always hold. Sometimes the cost of copying is very high. Sometimes the cost of inventing is not very high, in which case first mover advantage's lead time may provide a sufficient incentive to invent. Nevertheless, the conventional wisdom shared by most economists is that, absent patents or some other corrective, there would be an under-supply of new inventions. And given the importance of innovation to economic growth and human well-being, this surely would be a bad outcome.

So in theory, patents solve the free-riding problem by conferring a right to exclude or demand payment for a period of time, thus providing an opportunity for inventors to recoup the sunk cost of inventions. So that is the theory. And what does the empirical evidence consist of and what does it show?

First of all, over the years, economists have conducted surveys of firms to get a sense of how important, if at all, the patent incentive is to their

willingness to engage in research and development, and the surveys generally show two things. The first is that overall in terms of the role they play in helping firms to recoup their R&D, patents typically rank lower in priority than do alternatives such as trade secrecy and lead time. Now, that does not mean that patents are unimportant or never important, though the surveys do indicate that patents tend to be more important in industries such as pharmaceuticals, biotech, medical instruments, and specialty chemicals than in others.

Secondly, there have been several studies that have tried to estimate what it does cost in terms of R&D to bring a new drug to market, and the best known studies in this regard are the ones that have been conducted over the years by Joseph DiMasi and his colleagues at Tufts University using data provided by the drug companies. Their most recent 2016 paper estimates the average R&D costs incurred by multinational drug companies of bringing 87 self-originated new chemical entities, NCEs, and 19 new biologic entities, NBEs, to market at $2.6 billion.

Now, studies are sometimes critiqued for various reasons. Other researchers do not have access

to the underlying data, for example. Another possible criticism is that the study focuses on self-originated NCEs and NBEs, which may not be representative of the cost of drugs generally. Also, many drugs approved by the FDA are not NCEs or NBEs, but rather are new indications for existing drugs.

But, nevertheless, most of the other studies that have tried to estimate the R&D costs of bringing a new drug to market using publicly available data have concluded that the average cost is at least several hundred million dollars. So whatever the correct number is, it is a large number. And, with large up-front R&D costs, comparatively low costs usually of making a generic copy, most economists would agree that if any industry needs patent protection, it is the drug industry.

By contrast, for most other industries, the relevant R&D costs are probably considerably lower. But more empirical studies, both with regard to drugs and with regard to other industries, would be welcome.

A second point I want to make is that there are some other possible social benefits of patents so that even if patents do not materially impact the incentive to invent in certain fields, it is possible that they are still serving a useful public purpose.

Most prominently, there is the disclosure benefit because patents are public records. They help in disseminating new technical information, although, again, the empirical evidence is somewhat mixed regarding how important this benefit is in practice.

Disclosure also means that it is easier to license a patent than a trade secret. And for this reason, among others, patents may assist in the commercialization of new inventions.

There is also a growing body of evidence, again cited in my book, that patents play a positive role in helping startups to attract venture capital. And in this regard, patents may serve as signals of the underlying value of a new company, which, by its very nature, does not have a track record and is not yet publicly traded. Again, however, more research on the extent to which patents effectively serve these other purposes of disclosure, commercialization signaling, either in general or for specific industries, would be welcome.

Then I want to close with two caveats. The first is that depending on the circumstances, patents may not always be the best or the only way of inducing new inventions. It is important to at least consider the alternatives such as grants, prizes, tax benefits

for R&D, advanced market commitments, FDA exclusivities of various types. In my view, there is a role for all of these alternatives, although I also do not think that any of them are going to supplant the patent system anytime soon.

One problem is informational. Neither the Government nor any other central planner knows precisely what needs to be invented or how much of a reward to offer for its completion. The patent system, by contrast, has the advantage of being decentralized. Inventors go off and invent, and then the market, the wisdom of crowds, if you will, decides what, if anything, their contributions are worth. That said, however, the patent system is not perfect either.

It is not designed, for example, to provide incentives for the basic research that has no immediate or obvious potential payoff. So we probably need grants and other tools for that. And the patent system may not do a very good job of inducing inventions for which market demand is low, but human need is very high. For example, drugs to treat diseases that are endemic to developing countries for which AMCs or other tools may be better suited.

Yet another policy alternative are other

bodies of IP law. Software, for example, can be protected by copyright, and while the scope of copyright protection is less than the scope of patent protection, maybe that is all that is really necessary to induce the necessary R&D in this field. Alternatively, trade secret protection might be sufficient to induce the creation of inventions that are difficult to reverse engineer. Although, from the public's standpoint, trade secrecy may not be optimal because we forgo the disclosure that comes with having a patent.

And so for this reason, I do worry a bit that Mayo vs. Prometheus and other cases broadly constructing the law of nature exclusion to patentability may either inhibit R&D into new diagnostic methods, personalized medicine, or may cause inventors to opt for trade secrecy. And, again, I think more research into the impact or not of the patent incentive as it relates to diagnostic methods would be very useful.

My second caveat is that we need to remember that while patents may confer many social benefits, inevitably there are social costs as well, administrative costs, sometimes monopoly costs, transaction costs. And to some degree these costs are

inevitable if we are going to have a patent system, and as some of the other panelists may be discussing, there is a healthy debate whether a competitive or somewhat less competitive market structure is, in general, better for fostering innovation. But patent doctrine and other regulatory efforts should be structured to reduce or eliminate these costs whenever they are unnecessary to fulfilling the public purpose of patents.

So as I have observed before, if patent rights are too weak, we risk not inducing enough new invention disclosure signaling, and so on. But at the same time, if patent rights are too strong in terms of duration, scope, granting too many low-quality or trivial patents, at some point, the social costs threaten to outweigh the social benefits. So the ideal patent system would be structured so as to maximize the surplus of social benefits over social costs.

Of course, nobody really knows how to do that. Efforts to quantify all of the relevant costs and benefits defies empirical analysis. Nevertheless, using the best tools we have available of theoretical and empirical economics, I believe that policymakers often can be reasonably confident in predicting

whether a given change from the status quo is more likely to lead us towards or away from this hypothetical sweet spot that best serves its intended beneficiaries, namely all of us.

MS. MUNCK: Thank you very much, Professor Cotter.

Professor Rai?

MS. RAI: Thank you so much, Suzanne, for inviting me to these hearings. Professor Cotter has done a very nice job of walking us through the role that patents and other types of intellectual property play in different industries and for different types of firms. And he has also touched on the reality that there are other tools that the Government has at its disposal for promoting innovation.

I am going to dig a little bit deeper into some of these other tools and some of the data on innovation, particularly research spending that my colleagues and I at Duke have collected over the last few years. This data has interesting implications for innovation generally and also for thinking about patents and intellectual property as policy tools as well.

So as with patents and other types of intellectual property, the other policy tools the

Government has at its disposal do play different roles in different industries as well. So the project that my colleagues and I conducted ran from 2016 to 2018. It was funded by the Kauffman Foundation, and it assembled literature on changes in the U.S. innovation system as a whole and the extent to which, if any, these changes represented a policy concern. We concluded with a report from our former Executive Director Steven Merrill that suggested that, indeed, there was a policy concern and enunciated some policy recommendations.

So first, has there been a change in the innovation ecosystem? The tentative answer was yes, we concluded. We drew this answer basically from National Science Foundation data gathered through their annual BRDIS survey, as well as some related analysis by Duke colleagues, Ashish Arora and Sharon Belenzon. These data indicate that the private sector has shifted over the last 30 or so years from spending on research towards spending on development. The shift has been happening basically since the 1990s.

This trend could be seen as worrisome. Alternatively, it could be argued that perhaps research has simply become more efficient. We think, on balance, there is some reason to be concerned that

the private sector has shifted out of research to a significant extent, particularly outside the biotech and pharma industries. Biotech and pharma are exceptions in this arena as well as they are, it seems, in the use of patents.

By contrast, industries like the computer, electrical and semiconductor industries have seen much greater declines in their expenditure on research. So what are some potential causes? Here, we are reluctant to say too much. But one point is worth mentioning, I believe, and that is, since this decline in research has been happening since the 1990s, during a period of time when patent law has shifted significantly from being extremely generous towards patents towards perhaps being less generous in the last, say, ten years, at least as a first order matter, patents cannot be the major explanation for why there has been a decline in research outside of biotech and pharma.

In addition, it is, of course, worth noting, as Professor Cotter has noted, that patents and other IP, particularly patents, tend to be a double-edged sword when it comes to innovation. They promote innovation, but they can, in certain cases, also create transaction costs for innovation.

So we conclude on balance that patents are probably not the major player here and we are -- have reasons to be concerned about other factors. Some of these factors will be discussed, I believe, by Professor Shu as she speaks on the role of China and trade, but I did want to note another potential factor that has been highlighted by my colleague at Duke, Alon Brav, who has noted that although hedge fund activism can increase the efficiency of R&D investment, it probably does reduce R&D expenditure on balance by firms. And so that is a potential area of causation as well.

Finally, I want to conclude with what the toolkit could be in terms of interventions. So in the paper authored by our Former Executive Director Steven Merrill, we speak a lot about the role the federal funding can play. Professor Cotter has talked about that to some extent. But I want to highlight one particular piece of that white paper, which I think gives away what we think is a key problem with research funding. And the title of the paper is, Righting the research imbalance.

What is the research imbalance? Well, the research funding for the life sciences has been quite robust over the last 30 or 40 years. In fact, it now

represents a significant majority of the federal science budget. By contrast, the physical sciences and engineering research budget has fallen from 41 percent of the federal science budget in 1980 to 28 percent today. Life sciences has picked up all the difference. So we think that that is a policy lever that can and should be used.

Fortunately, it appears, at least in the last few months, Congress has heeded some of those warnings, not simply from us, but from many others about trying to write this research imbalance and that is good. But we hope that that will continue to be the case even as this current budget cycle -- we move on from this current budget cycle.

I will conclude with a couple of notes about IP, which happens to be, of course, the area in which I study most intensively. I, too, share concerns already enunciated by Professor Cotter about the role of the patent eligibility decision and subject matter eligibility decisions handed down by the Supreme Court, particularly in the area of medical diagnostics. And I have done some research -- some empirical work in that area that I am happy to talk about in the question-and-answer session as appropriate.

The issue, of course, if one is to address the 101 question is how to fix it. And it is a challenge to come up with good language, and I think everyone who has considered the question thoughtfully would recognize that the challenge of statutory language change is a significant one. So perhaps judicial evolution is the way to go, and we will see if judicial evolution brings us to a stage that is better equilibrium.

And then, finally, I want to note one piece that brings together in both sets of my comments or one point that brings together both sets of my comments, and that is the relationship between intellectual property and public funding. As many of you probably know, the fruits of public funding can, for the most part, be patented now by a consequence of Bayh-Dole. Bayh-Dole, on balance, has been a very good thing. However, it would be very good -- and this goes beyond the typical academic plea for more data. It would be good if we could have access to information on exactly how universities and other recipients of federal funding commercialize innovation, because to the extent that our academic center, industrial complex is a unique feature of the U.S. innovation ecosystem, and I think it is, it would

be good to have more information that we could -- and data that we could analyze on that question.

So I really appreciate this opportunity to speak, and I look forward to the question-and-answer.

MS. MUNCK: Thank you very much.

And, Professor Shu, I know that you have slides. I do not know if you would like to take them there or here. I have a --

MS. SHU: Yeah, I can take from here. Thank you. And do I just press it?

MS. MUNCK: Yes.

MS. SHU: Okay, great. Okay, all right. Thank you so much for having me here and for putting together this excellent panel. So I want to actually talk about some recent empirical findings looking at the impact of competition on innovation using actually patents as a measure of innovation. So this sort of kind of shifts gears a little bit where we are not -- I am not going be talking about IP policy, per se, but actually looking at research using patents as a measure.

So in this sense, like me and my innovation colleagues are sort of consumers of the IP system, we use patents as measures. So this is based on two works with coauthors. One is an empirical study and

another is a literature review. So the key question here is we are interested in understanding how import competition from China affects the innovation in the U.S., and this is particularly of interest because Chinese imports represents a major source of increase in competition in the U.S., especially in the manufacturing sectors. So as you can see on this graph, imports from China over the last several decades grew from really, you know, nothing, to nearly 3 percent of the U.S. GDP. The exports to China also grew as part of the increased trade, but not nearly as much as imports.

And there are several interesting sort of characteristics of this rising import competition. One that, I think, the timing of this increase in Chinese imports is sort of unexpected because China actually experienced a lot political and economic uncertainty in the late ‘80s and early ‘90s. So even in -- I believe in ‘89 or ‘90, the Wall Street Journal published their outlook for the next century, and they actually ranked China as one of their least-expected countries to grow.

So that shows you that, at that time, when China started opening up and shifting towards market economy, that was not necessarily an event that many

people expected. So that unexpected timing actually represents a really good opportunity for empirical economists to study sort of the impact of this rise, precisely because it was unexpected.

And the second characteristic is that sort of the increase in this competition is also unprecedented because prior to China shifting towards a more market-oriented economy, China was actually quite far from the production frontier due to the more -- sort of the state-owned enterprises and how the economy was structured. So after they opened up, there is a huge shift towards a production frontier, which drove this really intense increase in the rise of imports. And, finally, China has a clear competitive advantage in cheap labor, which also drives the nature of their production and their output.

So the rise of Chinese import competition to empirical economists like me is really interesting because it presents a really unique empirical opportunity to study the impact of competition innovation, which actually is one of the longest debated questions in economics. So going back to Joseph Schumpeter in ‘43, he is the first one to point out that competition actually can have a negative

impact on innovation because it reduces the incentives of companies to come up with innovation.

So assume like a monopoly that have full access to the market, obviously, the returns to innovation is quite high, because they have access to the full market. In contrast, when you have a lot of competition, you have access not necessarily to the full market. That reduces the incentives to innovate. So that is what I mean by the Schumpeterian effect on the slide.

On the other hand, the opposite argument that competition can actually be a way to escape -- sorry. Innovation can actually be a way to escape competition and take market shares from the competitors. So if you do not have competition as a monopoly, you actually do not have any sort of like profits to replace, so the opposite argument that competition can encourage innovation through this channel of escape competition. So these two, one is a negative argument. One is a positive argument. These two are the major arguments on the impact of competition innovation.

And, finally, there is a third channel which is less examined empirically, but I think it is important to talk about theoretically, that oftentimes

there are managerial slacks in a firm where managers are not necessarily maximizing profits but act according to their own interests. And competition can actually reduce this managerial slack by increasing the threat of, for instance, bankruptcy. So in this case, competition can increase innovation.

So ultimately, this is an empirical problem where we -- in my study, we look at the impact of Chinese import competition. And I do want to point out that, although Chinese imports can generate competition for firms in the same industry, it is not the only way that it can affect firm innovation, because for firms in downstream industries, Chinese imports can actually provide access to important intermediate inputs. So what I am presenting is actually only one aspect of how Chinese imports can affect firm innovation.

So with our data that we collected, USPTO patent data, matched to the firm-level data for public firms and as well as industry-level data on trade exposure. So our analysis really focuses on understanding how changes in Chinese import penetration between '91 and 2007 affect changes in firm patenting and other outcomes. It turns out that this is actually not an easy analysis, because we have

to control for sort of -- think about how U.S. firms demand and U.S. technological trends, how that could affect patenting.

So what we really wanted to do was isolate the exogenous variation in the Chinese import penetration and link that to changing firm outcomes. And we do that by looking at -- I will obviously skip the details here, but we look at this using Chinese imports to other countries, as well as policy changes in the U.S. to really identify this exogenous innovation.

So to summarize our key findings, we actually find -- first of all, we find that Chinese import competition had a negative impact on firms' financial outcomes in terms of, for instance, sales, profitability and employment. So this shows that Chinese import actually did increase the competitive pressure that the U.S. firms faced. And also as a result of this increased competitive pressure, we find that the import competition had a negative impact on patenting, which we used as a measure of the innovation output, as well as R&D expenditure, which is input into innovation.

So taking these together, the results suggest that competition led to a contraction of U.S.

firms in both production and innovation. So firms in industries that faced more competition contracted more or grew less than firms faced with less competition. So sort of the first, you know, reaction to this finding might be, you know, a sense of concern that this potentially represents a slowdown in the innovation and the growth in the U.S. And I want to just shout out to Paul Romer, who just won the Nobel Prize, for pointing out that innovation is the engine of U.S. growth. So in this slide, this is sort of a pessimistic reaction to these findings.

However, I do want to point out that there is a more optimistic reaction to these findings, because Joseph Schumpeter, the person who came up with the argument that competition is bad, reduces incentives to innovate, is also the same person who talked about -- who introduced the idea of creative distraction. So this idea of new entrants replacing old incumbents and new markets replacing old markets is a natural part of how the market grows and evolves.

So these are the two sides. And I think one aspect to consider in this is how much of this reduction in patenting and R&D expenditure represents an overall decline in innovation capability versus how

much of it is through reallocation from, for instance, the manufacturing sector to service sector? So that is an open question.

And, finally, I just want to quickly put these results in context, because any empirical results, if you want to think about interpretation, it is really important to think of some of these characteristics. So how competition affects innovation depends both on the nature of the competition, as well as the nature of the whole market.

So in the case of Chinese import competition, I think two characteristics are really important. One is that, as I mentioned, it is an unprecedented increase in the intensity of competition that could be unrivaled if you just look at changes in domestic competition. And the second is that this competition also concentrated on the low cost, lower end of the market. So the nature of the whole market also matters because other studies have found Chinese import competition to have actually positive impact for innovation in Europe and the developing countries, and if there is interest in Q&A I can explain how to reconcile these different findings.

And, finally, I do want to quickly mention

that access to important intermediates, so the supply chain effect, is actually -- there is overwhelming evidence not using the international market -- not necessarily U.S. firms, there is overwhelming evidence that this access to imported inputs has positive effects on firm innovation. So any policies that think about changing import competition, per se, must take into consideration its overall impacts, supply chain and competition and other aspects of firm activities. Thank you.

MS. MUNCK: All right, thank you very much, Professor Shu.

Finally, Professor Kovacic?

MR. KOVACIC: Thank you, Suzanne and John and Bilal, for the opportunity to participate in the discussion today. It is good to be back home.

I would like to talk about the role of the Federal Trade Commission as a means for policy development involving innovation and intellectual property. If we go back a century, you see that the FTC took shape in a period of revolutionary developments in technology and in the application of intellectual property.

In this period, in the area of transportation, that was the development of the

automobile, oil-fueled steamships and the airplane; in communications, the extraordinary rollout of the telephone as a means of communication; the development of the radio and what was then called the wireless, not the current wireless, but what was known then as the wireless; and in the area of entertainment, the emergence of a new device called the moving picture and soon to be the talking picture.

To citizens of the time, these change were no less revolutionary than the developments we see today. And to the Congress, a key question is how, for purposes of competition law, how does one respond to this, how does one understand them? And in crucial respects, the FTC was a core of the policy response, a response that encompassed a variety of policymaking tools.

One was law enforcement, but a special type of law enforcement, law enforcement that would take place through a mechanism of administrative adjudication with a deliberately elastic substantive mandate, Section 5 of the Federal Trade Commission Act and its prohibition on unfair methods of competition. The agency would be governed by a board, not by a single executive, a board that would draw upon diverse backgrounds and expertise to address these types of

issues.

The agency would not simply be an antitrust enforcement body in the special sense that I have described. Far more important, the Commission embodied a concept that we described today as competition policy, not simply antitrust enforcement. It would have a deliberately broad research and data collection function embodied in Section 6 of the Federal Trade Commission Act to collect information by use of compulsory process, to issue reports without contemplating necessarily the prosecution of cases.

And it would have a special role to play as a convener to hold events like this one, to hold a series of proceedings that would provide a basis for learning, discussion, debate, and the development of a synthesis with respect to specific issues.

And in many respects, I think through its history, the agency has achieved the fullest expression of this vision in dealing with issues such as innovation and intellectual property before the past 20 years that Suzanne referred to, extraordinary work involving the pharmaceutical sectors; a report on tetracycline; litigation involving the use and misuse of the tetracycline patents; the exploration of patent thickets in cases such as the Xerox monopolization

case; and in merger review, simply to single out defense and aerospace in the course of looking at dozens of mergers. The Commission's decisions have dealt fundamentally with the way in which innovation takes place in these crucial areas.

A further step forward, though, I think takes place in exactly the way that Suzanne described before. The proceedings that began in 2001 and culminate in the production of the "To Promote Innovation" report in 2003 is a broader realization of the capacity of the agency to serve as a convener to elicit views from a variety of different perspectives and then to distill that learning into a report that can be a source of guidance for policymakers, for judges, for legislators. Those undertakings took over 20 days of hearings that took place in different venues across the country.

They began not in Washington, but in California on the campus of the University of California at Berkeley where Kenneth Arrow and other luminaries in the field came together to discuss the fundamental issue that Tom already and Pian were just referring to, that is what role does competition, on the one hand, and the protection of exclusive rights, on the other hand, what roles do they play in the

development of an innovative and dynamic economy.

The result of this was a formative report that dealt with the impact of the rights-granting process on the system, a report that became a focal point for discussion and debate in the United States and has had a dramatic impact on the way in which foreign jurisdictions and international institutions conceive of these issues. It has become a focal point for judicial development of doctrine, notably the Supreme Court in several cases referring to its work.

What stood out about this is that this was not litigation. This was a conscious strategic decision by the agency to devote high-quality resources to the development of this convening role and function and to publish reports in the expectation, somewhat of an act of faith, that if done well, they would have a major contribution to these other areas of policymaking. And they required a major investment. This was a significant use of time, both the predecessor bodies of Suzanne's group and others brought together some of the best resources in the agency far and away above a university quality research faculty to do this kind of work with an impact that stands up.

There was the further strategy to follow up

with this, to continue it, continuing reports and research on patent remedies and on nonpracticing entities, all of it involving a continuing conversation and engagement with the disciplines of competition law and economics, intellectual property law and economics, and the affected business community.

If we look at the foundations for this kind of work and we think about what it takes looking ahead, it requires the agency to think about the best use of its capabilities to formulate priorities in a conscious way and the priority here was innovation and intellectual property and to wisely select projects that can realize the application of these special skills. And it also required the continued investment in building the human capital and accumulating it to do the work well.

This work cannot be done on the cheap. It takes resources away from what might be the next case. It is not case-specific. It is deliberately devoted to preparing a good research product that can have a major impact and marshaling resources to that end.

To look ahead, what do I think of the implications of this for the FTC's role in the future? As you might gather, I am an enthusiastic supporter of

this realization of the agency's role and its contribution to policymaking. First, investment. There is plainly, I think, based on past experience, a basis for seeing that this kind of work deserves continued substantial investment by the agency, even though, in a narrow sense, it does not generate the cases that tend to end up on the front page of the newspaper or front page of the business section of the daily publication.

Thus, it requires literally what would be the equivalent of research and development in the private sector. This is policy research and development. There has been a very healthy norm that supports its pursuit and development and that becomes important once again here.

Among the focal points could be an expanded effort to see how intervention by way of litigation in the past has affected innovation. The way in which merger remedies -- remedies in other cases have affected outcomes with respect to innovation with an eye toward the FTC becoming a uniquely significant repository for information and knowledge about competition information policy remedies, and to be a global resource with respect to that crucial development of policymaking.

A second frontier for policy development is what might be called policy integration. The agency was conceived first and foremost as a competition agency. But its role migrates as it expands over time to encompass, by statute in the 1930s, consumer protection. And that consumer protection function has spawned what arguably is a third distinct product line of policymaking and that is data protection and policy.

A question to be asked in the future is, how can we draw upon this three-fold combination of capabilities to pursue and develop policy in this area? In short, how do you use the special capacity inherent in our charter?

And the last is policy implementation, indeed, through the unique capabilities to act as a litigating body. To my eye, Section 5 of the FTC Act, administrative litigation, are the best home for policy development should litigation be seen as the right way to look at issues, such as standard essential patents, FRAND obligations and their implications. That is, the FTC has a unique capability to operate without the specific constraints of doctrine that come from the interpretations by the courts in Sherman Act and Clayton Act litigation to do

special things in this area, all premised on the research and development that come from the nonlitigation roles. Thank you.

MS. MUNCK: Thank you very much. And thank you, everyone, for your very thoughtful presentations today.

My colleague, John Dubiansky, and I have prepared some questions, but I also want to open it up to each of you to ask questions of each other as we sort of go. So I will kick it off. We have talked a lot about innovation as an engine for economic growth, and I think we have also heard from our panelists that innovation is not homogenous. It depends on which sector you are in, it depends on which stage of investment you are in.

So I would like to ask each of you, as the FTC considers its role here, what are the key factors to consider when evaluating policies to promote innovation. How do we test if we are on the right path and does that test change by industry? So I will open it up to everyone if you would like to join in.

MR. COTTER: Let me say, as far as the patent system is concerned, one of its strengths, as well as one of its weaknesses, is that the rules tend to be uniform. In fact, we are largely locked into

that role as a result of international treaties and that is probably a good thing. The TRIPS Agreement forbids discrimination based on field of technology. But it can also be a weakness because, of course, some industries make larger investments of R&D compared to others and so, in theory, the optimal system would be one that tailored patent roles to the needs of different industries.

But as a practical matter, I think that would also induce a great deal of rent-seeking. Each industry would then lobby on the favored one and so maybe, on balance, it is better to have uniform rules, but that means that the rules might be stronger than necessary for some industries and perhaps not as strong as they should be for others. The courts however can and do, when applying patent doctrine, apply them in somewhat different ways.

For different industries, for example, in evaluating how much needs to be disclosed in the patent document, I think it is fair to say as a general matter that you need more disclosure in the unpredictable arts of chemistry and biotechnology. So there are some modifications that the courts can make at the margin. To the extent we want more tailoring, though, we may need to rely more on other policy

levers such as those that Arti Rai talked about, FDA exclusivities and other tools.

MS. MUNCK: So, Tom, as we are thinking about each of those issues, whether you would want to have different grant terms for different arts or whether the -- we should be looking at the patent system together with other regulatory levers, what questions should the FTC be asking to think about how we can achieve our goal of protecting consumers in this space?

MR. COTTER: Well, I think it all does come down to the fact that any policy related to innovation will have its benefits and its costs. It is going to be very difficult often to quantify and to compare those benefits and costs. But we need to see where the evidence goes. So I think the FTC has done a very good job, for example, in its study a couple of years ago on patent assertion entities in assembling the data and analyzing it. And that is what we really need is the best empirical evidence we can find.

There are people out there who are telling us now that patent trolls are a myth or that the decision to go with a discretionary injunction standard was a bad idea. Maybe those people are right but you cannot ignore the evidence either and there is

some fairly good empirical evidence that patent assertion entities have caused some social harms. There is good evidence that patent holdup is a real phenomenon not just some myth as it sometimes dismissed.

But if the studies have been done improperly, if they have reached incorrect conclusions, then do better studies. I mean, but you cannot ignore the studies. I think we really have to focus -- patent law innovation policy is more closely aligned with science than probably any body of law and we should not ignore the norms of science. We cannot make up our own facts; we cannot ignore the evidence. Anecdotes are not data. Test, falsify, and see what you come up with.

MS. MUNCK: Perfect. Thank you.

MS. RAI: So I just wanted to add -- and this is very much along the lines of what Professor Cotter has said -- that the possibility of experimenting or at least evaluating in a very rigorous way new interventions I think is one that is -- one that the FTC does very well. And I am proud to say that I think the Patent and Trademark Office, with the introduction of Office of the Chief Economist, has begun to do as well.

So for example, with the introduction through the American Invents Act of 2011 of the Patent Trial and Appeals Board, there is an opportunity to learn as more decisions from that institution body come down. And so for example, I think that the recent -- what some might see as a bad course correction but at least an interesting course correction by the PTO towards moving away from the broadest reasonable interpretation standard for claim construction is based on some data, including data that I have generated on the role that these proceedings play in substituting for litigation and the efficiency benefits, excuse me, that might be realized by having the same standards of litigation in the district court -- in Article 3 district courts and administrative agencies.

So I think that is a course correction as contrasted with perhaps some of the anecdata that Professor Cotter was talking about that is based upon data.

MS. MUNCK: Well, thank you. I am hearing from both of you the role of empirical evidence in promoting intellectual property research. Is there a mechanism if you are sort of either beginning an empirical project where you are trying to understand

the sort of foundations of the question that you are looking at. What else can you look at as you are beginning to develop that empirical approach?

So I am thinking like if we were to start to look at an issue completely from scratch and we wanted to have the empirical approach together with looking at theory. How would we balance that? What would you be thinking about in that space?

MS. RAI: So the concern with empirical work -- and I have seen this in my own work -- is that it takes a long time for the data to emerge and so we had to wait until 2015 really to have enough data on how the PTAB was actually being used before we could say anything. And that does -- so, in theory, there was a lot of pressure on the PTAB to say that, well, you are operating -- because this is what Congress wanted you to do, you are operating this way or that way. But while all the loud voices were speaking, unfortunately, it took a while to actually figure out what was happening. And the loud voices always come first.

MS. MUNCK: Yeah, and I guess that is the delta that I am asking about. Is the approach to be more conservative in that space or is the -- what do you recommend?

MS. RAI: I am sorry. I did not --

MS. MUNCK: I guess what I am asking is you were -- so let's take, for example, the PTAB, the PTAB institutes in 2012 and the data starts to come in in 2015. What is the right thing for policymakers to be doing with respect to the PTAB in that 2012 to 2015 space?

MS. RAI: It is a great question. And from our standpoint, it was good that they maintained the constant policy because then that did not mess up our data. But that is obviously not -- should not be their concern necessarily. But I think that is the negative side of any new intervention one tries. One does not know for a while whether it is actually working, but that is just the reality. I think to swing back and forth wildly without data is a bad idea even if it can be frustrating sometimes to have to wait.

MS. MUNCK: Thank you.

Professor Shu?

MS. SHU: I actually wanted to add another aspect of adding to the delta is the data collection. So in our study, we actually spent three years cleaning up the patent data and matching to firm data because the patent data does not have, you know,

identifier for the firms and the firm names are very like, you know, self-entered, they are very noisy. So turnstile matching the patent data to the firm data was not a trivial effort.

So my larger point is that I think when you think about the effectiveness of studies, the measurement issue is very important. And on the measurement issue, you should expose sort of cleaning up the patent data, which I think USPTO has done a great job. They have released the patent view which is a great effort to, you know, clean up the data, as well as I think the larger question of how to measure innovation. So are patents the best measures of innovation? I think it is one of the best measures we have, but clearly does not measure all of the innovation efforts.

So that actually relates to a question that I want to ask the fellow panelists, which is what do you think are the best measures of innovation and can we do better than patents? And also R&D expenditures, of course.

MS. RAI: I think that is a great question and it is a question that we thought about a lot when we were -- we, in our recent work, have looked more at R&D expenditures or R expenditures and, of course, the

pushback to that is that, you know, that is just the input. What we really care about is the output. And so inputs are nice, but they are not really what you want. And then the problem with patents as output measures is well rehearsed.

So, yeah, I think that if we could actually have more sophisticated measures, that would be very much a good thing, and I take it that the National Science Foundation has, at various points, tried to come up with better innovation metrics and either patents or inputs. But I do not know that any of that has really led anywhere.

MR. COTTER: And, of course, the ultimate goal is economic growth. I mean, going back to Paul Romer and endogenous growth models, that innovation is both an input and an output. So the ultimate goal is not to increase the number of patents, but it is to increase economic growth and patents are one tool for doing that. But, you know, none of our ways of quantifying or measuring innovation are perfect.

MS. RAI: Although we do know that total factor productivity seems to have, at least on some measures, declined, and that is probably not a good thing in terms of innovation because innovation is what TFP is all about.

MS. MUNCK: Professor Kovacic?

MR. KOVACIC: When you look at the experience that a competition agency accumulates, and the FTC is one of them, I think you see that they accumulate the equivalent of big antitrust data. This is a lot of information that comes from pursuing individual cases, especially doing extensive investigations and cases within a specific sector. It does not always give you an insight from an economy-wide perspective, but in looking at specific agencies, I think it helps provide some insights to the points -- for the points that we have been discussing and maybe helps you start to creep up on answers to some of these larger questions.

For example, in the area of aerospace and defense, you see confirmation of Arti's point about the crucial role that government funding plays in the development of specific technologies. When the FTC looked at the United Launch Alliance joint venture proposal, a key question was would NASA give SpaceX, which had not launched anything yet -- it had launched ideas, but no hardware. Would NASA gave SpaceX contracts to do non-national security launches of different kinds as a way of establishing its credibility to become an effective supplier to the

whole range of government purchasers in the future?

The assumption that it was was a crucial part of the decision to allow the United Launch Alliance to be formed. And, fortunately, for U.S. citizens and for the aerospace sector, that assumption proved to be correct. But it was vital that the public purchasing agency played the role that it did in fostering the development of a new business model, which has been, in many ways, a dramatic departure from what existed before.

You could imagine that in sectors in which the agency has been quite proficient that you do the equivalent of industry studies; that is, you try to reflect on the dozens of mergers done in the pharmaceutical sector, which allow you to assess the role of -- perhaps of research and development, the significance of rivalry across different producers, the fascinating role, the collateral regulators and public policymakers, such as those in the Food and Drug Administration, play in the development of the sector.

You could go sector by sector where the agencies have deep expertise and use the big antitrust data that they have assembled to derive some observations about how innovation takes place, what

role different forms of intellectual property protection play and what role competition plays in stimulating the development of those sectors. You could go beyond that and develop the research agenda that, again, is uniquely within the province of the FTC. The FTC can get a lot of data. It can collect information that would assist in providing answers to a number of the questions that we pose.

How might you go about doing that? Allen Fels, who was chair for many years of Australia's Competition and Consumer Protection, but also a specialist in public administration, said that public agencies had to draw upon what he called coproducers outside of their own walls to carry out their own missions effectively. One that Allen identified is the world of academic researchers. And you could imagine a collaboration in which the academic researchers assist you in putting together what the research agenda could be. The FTC helpfully does have a microeconomic policy conference every year, which is a way to try and draw academics into the development of research projects that are supportive of public policymaking.

But you could imagine that one way to formulate the FTC research agenda would be in a more

systematic and elaborate way to draw upon researchers and ask, if you could get the data, what would you like to have to assist in formulating what the specific research project would be? And then the FTC goes about carrying it out. With its budget, I would not suggest that the FTC can do a Manhattan-like examination of the economy and all it contains and all of its origins and sources.

But you could imagine taking the big antitrust data that the agencies have themselves to look at specific industry evolutions, plus, the collaboration with researchers in a variety of settings on the outside to go about formulating the research agenda that would enable you to go forward and start to answer some of these questions, again using capabilities that are uniquely within the FTC's own mandate.

MS. MUNCK: I think that is an interesting, point, thank you. Because, you know, as we were doing the PAE study, one thing we need to do is to talk to our colleagues at OIRA to convince them that the benefit of the burden that we are placing on businesses outweighs the cost to the business. So I think the idea of leading with academic research or in the case of the PAE study, we led with a workshop that

told us that that data was not available. I think that is an interesting model.

MR. KOVACIC: And I think if you ask across the whole span of government institutions in the United States, which one has the greatest capability to do applied industrial organization research in a way that provides a mechanism for injecting it into the mainstream of policymaking, I would say the FTC has an unequaled capacity to do exactly that kind of work. And I realize it is not cheap, it takes time, and the results are not easily predictable.

But what impresses me from the past experience is that the careful effort has been used before to formulate a topic. To identify the focal points gives you a strong likelihood of coming up with the result that justifies the advice and guidance that you gave to OIRA in formulating the projects.

MS. MUNCK: Well, thank you. I would like to turn it over to John, my colleague in the Office of Policy Planning.

MR. DUBIANSKY: Thank you. I think as the panel has so helpfully pointed out, when we think about both our own policymaking and empirical research tools and agenda, it is helpful to think that, oftentimes, questions of innovation do extend beyond

simply the patent space.

So I have a question on really the role of government in promoting innovation a bit more broadly and perhaps Professor Rai, you may want to field this first, and that is, looking at the past 20 years, what can we learn from earlier government efforts to promote innovation and, in particular, how can we use these lessons going forward?

MS. RAI: Well, the first point I would make is a point I hesitate to make because I am not a -- I have not studied Congress intensively, but this is a point that relates to Congress. So one of the points we make or my colleague Steve Merrill made in writing the research imbalance report was that the rising above the gathering storm report, which was probably one of the National Academy's most famous reports regarding the challenge in physical sciences and engineering, in particular, was issued in 2007. It called for a doubling of Defense Department spending for the physical sciences and engineering.

And the America Competes Act followed swiftly and it was just actually, for some of us who were looking at it, just a remarkable kind of piece of legislation to follow so swiftly from a policy recommendation by an esteemed body like the National

Academies. Unfortunately, the appropriators did not appropriate the money because the budget politics got in the way. There were caps on discretionary spending imposed in the 2011 Budget Control Act.

So I think one of the challenges is we know, I think in some cases, what the right answer is, but it is really hard to get all the ducks in a row to get it implemented -- speaking of -- Suzanne, you were talking about how to do things quickly -- to get things implemented quickly would have been great had the doubling actually occurred in the seven years that the America Competes legislation authorized, so NSF and NIST and the DOE Office of Science would have gotten the money, but it did not.

And not until 2018, just a few months ago, did we get some significant infusion of resources into those offices, which I think all of us would say is really critical no matter what one's politics are for our future innovation economy. It is sad that it took more than ten years.

MR. DUBIANSKY: Building on that for a moment, what bodies within the Government are best poised to advocate and ensure the completion of these sort of initiatives?

MS. RAI: So I hesitate to bring up that

particular example because I know the FTC does not -- that is not a space that really plays in funding for basic research necessarily. But it is a sort of example. So, yeah, I mean, I think that there are different agencies that could help to advocate. NIH has done a very good job of advocating for itself in the life sciences. I am not sure why NIST and some other of these agencies have not done as good a job. I am not sure that the FTC could play a role.

But it is something that has struck me as a real -- having gone into the Obama Administration after the America Competes legislation passed and then seeing it just languish for so long, it struck me as a real problem. So I do not know that the FTC, per se, can do anything, but certainly it seems to me that DoD could perhaps have done more. I do not know if it could have or not, and that is why I sort of hesitate to jump with full feet into how one influences Congress. But that is a point that I thought was worth highlighting.

MR. DUBIANSKY: Perhaps we will go down in the opposite direction this time. So, Professor Kovacic, do you have anything to add on experiencing the past 20 years of the role of the Government in promoting innovation?

MR. KOVACIC: I think there are interesting observations that you can derive from some of the experiences of both the FTC and the Department of Justice and some of their peer institutions abroad. I think the hesitation in talking about it is that they are not broadly systematic. There are idiosyncrasies in each area that perhaps make one very cautious about drawing conclusions. But there are still interesting, I think, observations that can come from looking at the industry histories, which, at least in an informal way, start to emerge from the examination of what specific industries have done over time.

Arguably, the Federal Trade Commission has been focused very intently on the pharmaceutical sector since the late 1940s. That is a long period of observation. Countless mergers, nonmerger matters, remarkable case records developed, hearings and other proceedings that contribute to this. I guess a matter of methodology, a challenge, something that might be done is how do you integrate everything that you have learned from these kinds of experiences into formulating a broader view about what matters?

I think if we looked at, for example, defense and aerospace and you look at the fascinating transactions that the FTC has examined, you see the

intersection of public and private initiative that I think allows you to identify, for example, the Government's formative role as a buyer, not simply as the provider of what might be called R&D subsidies, but its role as a purchasing authority and how significant that can be.

The role of the Government in doing its own organic research and development, going back to the days of the Advanced Research Projects Agency and Vinton Cerf, who was a young contributor to that team at the time, and that is the origin of the internet. In many fundamental ways, those were government-sponsored efforts. So I do not know if the Commission, for example, or the Department of Justice could provide a systematic set of recommendations about what matters. But I think that there are exceedingly interesting observations that can come from having watched and touched these agencies in so many different ways.

Defense and aerospace I think is a fascinating example of how that works, but also pharmaceuticals is another area where the Commission has been deeply involved. And a step one could take would be how do we take, again, this vast body of antitrust big data, an experience one has collected

over time, and maybe look at the specific topics more intently and systematically, not all industries, but to pick a few, and to try come up with some better answers, answers that I think bear out, you know, Tom's comment about how you get different results or you have different significance based upon what industry you are in.

I think you would verify a number of the observations that these and other scholars have made about how the IP system, for example, affects innovation. But I think there is a lot of fascinating information that would come from a deeper examination of experience with the body of big antitrust data that the agencies have and that they can collect without tripping the GDPR.

MR. DUBIANSKY: Thank you. Professor Shu?

MS. SHU: So since Bill mentioned defense and aerospace, one interesting example that came to me was that, you know, the event of moon landing actually inspired a lot of young kids to study STEM and become, you know, potential innovators. That suggests to me that sometimes government interventions can have not just necessarily unintended consequences, but consequences that can be felt in the longer term. And I think this -- think about the supply side, so not

just a demand for innovation, but the supply of innovative talent is important.

And in some of my other research looking at the MIT alumni and how they choose careers and how they become innovators, one interesting sort of finding that emerged was that people's interest in becoming innovators, especially in science and engineering, those kind of interests form very early. So the role of government in there, you know, I think is interesting to think about. And maybe sometimes it is not explicitly targeted at those groups, but some of these policies, such as the moon landing event, are inspiring a new generation, I think. Those are interesting sort of -- not side effects I would call them, but interesting effects to think about.

MR. DUBIANSKY: Thank you. I think it is very interesting to raise education as part of this discussion as well.

Professor Cotter?

MR. COTTER: Yeah, I think I would just echo what the other panelists have said. From my own standpoint, it is very easy to be focused on patents and copyrights and how important the patent and the copyright system are, and they are important. Certainly changes in patent or copyright doctrine can

move the needle and either induce a little more innovation or a little bit less and those are important things. But I think it is probably equally and perhaps more important to think about the role of both government and private entities in sponsoring basic research for which then the patent system is designed to come up with applications.

It is great to have a culture of entrepreneurship and education, freedom to think, to collaborate, have a conversation where nobody is exclude. I think all of that is probably more fundamental to creating a culture of innovation than anything else.

MS. MUNCK: Well, we have an audience question -- actually, a couple of audience questions for Professor Shu. People are asking, please explain the different results with respect to the EU in developing countries versus the U.S. in terms of the positive impact of increasing competition from China. And that ties into another question that we were going to ask about sort of as economies become more global, how do you balance the domestic nature of intellectual property and other laws of global competition.

So I think first I would like to, if we can, go back to slide 13 and I think we can do that by just

going backwards.

MS. SHU: Okay.

MS. MUNCK: So I would love to have you address that point.

MS. SHU: Thank you for the question.

So the main -- so, essentially, the measurements are very similar. So how we measure our Chinese import competition and the source of variations are similar in the studies. So I would say there are potentially three explanations for the different findings on the passive versus negative impact. One is that the intensity of increase in competition is a little bit different. Arguably, the U.S. experienced the most increase of the influx Chinese import competition and the intensity might be a little bit less in Europe and developing economies.

And the second, and perhaps most importantly, the nature of competition, the hallmark in the home market is different. So in the U.S. -- and this is more of speculation and I think it is worth actually examining more with data, arguably, the U.S. market started out -- and there is some evidence for this -- the U.S. market started out more competitive than the European and the developing economies market. So if you are already in a very

competitive market and you have a huge influx of increasing competition, that tends to generate more incentives to contract and even exit the market than to innovate as a way to escape competition.

On the other hand, if you are in a market that is starting out not very competitive and you have a little bit of increase in competition, that actually would -- generates increased incentives to innovate as a way to escape competition as opposed to, you know, exiting the market.

And finally, I think, again, this is speculation, that there are perhaps some differences in managerial slacks across different economies, perhaps most slacks in developing economies. They are potentially furthest away from the production frontier, so there is a lot of efficiency gains from this increasing competition, whereas the U.S., especially public firms, are probably already very efficient and have not much managerial slack. So the -- sort of the efficiency gained from competition is not as much.

MS. MUNCK: Thank you very much.

And just sort of staying -- we have about ten more minutes for discussion and then I want to make sure that I save two minutes for your statements.

So if anyone has anything they would like to add on this global question, I would like to do that. Otherwise, I have a few other audience questions that I would like to address.

MR. COTTER: I would say, and there is, to my understanding, a fair amount of evidence that patents affect different countries in different ways as well. So whether it is a good idea for, say, developing countries to have patent systems very similar to those we have in the Western nations as is required under the TRIPS Agreement, I think there is a fairly substantial body of evidence that at least once a nation reaches a certain stage of development, that having a good patent system in place can be very useful in attracting foreign investment, foreign technology transfer, in developing domestic innovation perhaps to some degree, but that may not be true across the board.

So, once again, you know, we have a one-size-fits-all patent system and that is not always optimal on an industry-by-industry basis or on a country-by-country basis. At the end of the day, maybe it is the best we can do, but there are definitely some drawbacks.

MS. MUNCK: Well, thank you.

MS. SHU: One thing I do want to add on the global aspect, that, you know, one question that our study raises is, you know, do U.S. firms shifting their R&D and innovation to other parts of the world, especially the multinationals. On the U.S. patent data, we do not see that. So we have not seen evidence of, you know, a huge increase of patents from China, although there is an increase, but not overwhelmingly.

But I think that is sort of an interesting followup question to think about that is the locus of innovation shifting around the world globally.

MS. MUNCK: Terrific, excellent.

Well, as you can see, John and I are looking at a number of questions that have come in from the audience and trying to figure out how to balance that with time, but I want to sort of make a pitch for the public comment period. So if anyone is listening to things as we are discussing issues and you would like to hear more or raise points for the FTC, please be sure to file a public comment.

I think with the last really five or six minutes before we turn to your statements, I would like to go back to Chairman Simons' ask that we continue to explore the role of the FTC and how we are

doing our job. I know, Bill, that he quoted you in that statement and that has also been a position of yours --

MR. KOVACIC: You cannot do that enough, I think.

(Laughter.)

MS. MUNCK: So I think really my question to you is, you know, for the past 20 years -- more than 20 years, pardon me -- the FTC's IP policy and enforcement efforts have focused on the role that competition and intellectual property law play in promoting innovation. And our tools include, as we have mentioned, 6(b) studies, hearings such as this, participating in amicus briefs. I think we need to ask, have we gotten this balance right and what should the FTC be thinking of as we move into the next 20 years?

MR. KOVACIC: I think the habit of reflecting on a regular basis on the views of astute observers, like my colleagues here, about how policy is developing and having a conscious process of collecting views on that is the best process-related antidote that you have to a bad path dependency with respect to any set of ideas. So I think the culture and custom of the process of public consultations as

provided -- will continue to provide for an open-minded institution, the best way to continue to make adjustments and refine.

I think as we all sense in the area there is an inherent amount of experimentation that takes place in setting policy the right way. I am reflecting on my colleagues' comments here. I think that some measure of experimentation is inevitable. Experimentation involves success and failure. I am not aware of success experiments that invariably point toward success. They involve policy failures as well.

And there is no shame in the failure. The shame is in committing the same failure again and again when you ought to have some idea of making a change. So I think the virtuous cycle, which I see established in the agency's work, is one of acknowledging the experimentation with respect to its own policies and those of others; periodically and regularly assessing the consequences of that, and I echo all of my colleagues' endorsement of a habit of spending resources on after-the-fact assessment. And, third, making refinements based on what the assessment tells you.

My sense is that that has become the culture

and the habit of the agency. That is a norm, as academics call it. That is not a regulation that tells you you must do things that way. I think that is the best possible insurance that you will have a process of adjustment and reflection that points towards needed improvements over time.

MS. MUNCK: Thank you. I think we have a couple of minutes if anyone else on the panel would like to address that. Otherwise, we can move to closing statements.

Terrific. So I realize that I am asking you to criticize me while I am sitting right here, so I can appreciate that that might not be something that people would want to engage in, but I also keep plugging the public comments because I think that there people have raised a number of issues that might not fall in the spectrum of criticism, but certainly fall in the spectrum of here is how you have been looking at things. Here is how the economy has changed and here is how you might want to look at things going forward. So I want to encourage everyone to think abut that as they file public comments in this space.

So, now, as promised, I would like to ask each of the panelists to spend a couple minutes

talking about sort of either your closing statements or what you think the FTC should be focusing on as we move forward in this space because we have been talking a lot about a number of different issues. As I mentioned at the beginning, innovation is not heterogeneous and so -- it is not homogenous; it is heterogeneous, pardon me. So I would be really interested in your thoughts.

MR. COTTER: So I have just three brief points to make. One is that invention and innovation are very, very important to improving the human standard of living, and to the extent the patent system and other aspects of innovation policy can improve that, that is what we need to be focused on.

It is important to honor and recognize the contributions of inventors, but the overarching goal is to promote the progress of the useful arts, as stated in the Constitution. Patents are one means to that end.

Secondly, patents are not a guarantee that a firm will recoup its research and development cost, but rather patents provide an opportunity to do that. But, ultimately, the market will decide whether an invention contributes enough that it was worth undertaking.

And then third, and I think this follows up a lot from what Bill just said and from what the other panelists have said as well, it is important to experiment, not be too sure of ourselves. Again, patents and innovation policy, more generally, is the most closely related area to science, and the hallmark of science is that we cannot just assume that we know how the world works. So we formulate hypotheses, we test them, and if evidence refutes them, then we change them and we move on, and that is the way good science is done and that is the way good policy should be done as well, particularly in this area.

MS. RAI: So I have three points as well, although I had four and you took one of my points, which is experimentation and we have all talked about that. I do think that it is important in a time when people tend to have strong points of view on almost anything to realize that strong points of view should always be subject to what my colleagues in economics called Bayesian updating. You update based upon what you see the evidence as.

So the three points I have are as follows: In accord with what I said regarding the role of public funding, in particular, in fiscal sciences and engineering and the relationship that public funding

and/or public procurement has with the patent system, I think we do need more research there, and I say that not simply because I would like more data on which to do research, but I think that unfortunately the data that is available on how the, for example, academic funding has translated into commercial products, which is another metric one could use, commercial products, is hard to find because the information such as it is is in a database called iEdison, which is not accessible to researchers outside the Government or even, as far as I can tell, to some researchers in the Government.

So it seems to me that if we can gather more data on how public sector funding has eventually led to the creation of products beyond the great anecdotes, which I think are fantastic about the internet, we know that there is a lot going on there, it would just be great on a more micro scale to know exactly how that has worked and that requires open data, which is something that, unfortunately, academic institutions have not been eager to get behind. They do not want their licensing strategies and so forth scrutinized very much. So that is one point.

The second point relates to trade secrecy. I think that the evidence suggests -- and I do not

have a definitive answer on this, but the evidence suggests that but trade secrecy is becoming more important and it is really hard to study for obvious reasons. But if there is a way that government agencies, including the FTC, could study the role of trade secrecy, including in a global environment, more assiduously, to the extent that we are concerned that trade secrecy has become -- or concerned or just recognize that trade secrecy has become more important to certain players who think that patents cannot be enforced in some jurisdictions, we really need to study how that is working and if that is a problem for purposes of the cumulative innovation, in particular, because trade secrecy obviously cannot encourage cumulative innovation in the same way that patents can. So that is the second point.

The third point just follows up on something that Professor Kovacic was saying regarding all of the data that you guys have on particular industries, and I am just going to make a pitch for perhaps investigating more closely whatever data you have on the pharmaceutical industries, including the biopharmaceutical industry, because it does strike me that there we have something of a metric of output that is useful. New drugs, new molecules as opposed

to small variations on existing molecules and/or new biologics.

And it is interesting to me that there has been a huge shift in the pharmaceutical sector away from so-called small-molecule drugs to these big biologics and those things are really expensive and are going to blow up our healthcare budget, as far as I can tell. So that may be something to watch.

MS. SHU: Thank you. I want to also echo my fellow panelists on the importance of experimentation measuring the effectiveness. I only have one point to add, which is that I think there is a lot more to do, especially in the academic research, in understanding the role of U.S. firms that plays in global competition and global innovation.

So what we have studied, the impact of import competition and, you know, the innovation outcomes of U.S. firms, is only one aspect of the trade liberalization. So, surprisingly, in my literature review with my coauthor, Claudia Steinwender, we actually saw very few studies that look at the impact of export opportunities on U.S. firms' innovation outcomes. So U.S. firms actually have enjoyed quite a bit of increasing access to foreign markets, including China, and how that affects

innovation, I think, based on evidence using data from other countries, it is pretty overwhelmingly positive evidence on innovation outcomes. But we have yet to see a study or more studies using recent U.S. data.

Secondly, also, U.S. firms also introduced competition to foreign markets. So how that increased competition affects the innovation and productivity of foreign firms, that is also an open question. And I think all of these are interesting because it also is related to thinking more critically about the nature of competition, for instance, whether competition enters from the high-end of the market versus the low-end of the market. Those probably also have different impacts on innovation as well and that is another open area for research.

So there are many great opportunities and open research questions and I am really glad to hear the FTC's interest in research and experiments and rigorous studies.

MR. KOVACIC: I would like to make a pitch for three types of investment. First, the continued investment in building knowledge of which this set of proceedings is one part, but the continued investment that would be the equivalent of a high-technology company investing in its capability and its people to

do work over time.

I realize there is a tension for a public policymaker. This kind of work does not generate observable results. It does not produce ribbon-cutting ceremonies where you can say, I sued this company, I collected this fine, I did this, that and the other thing. It is an act of faith in many respects.

But I think in our community and certainly within the agency, a question to be asked every year, it almost should be broken out in the budget, what is the R&D budget? That is, how much are you investing in R&D to become smarter and wiser about the way the world works and share the results of that? So I think that is -- investment, number one.

Number two, investment in building the synapses that exist already but can be expanded with researchers outside the walls of the institution. You take a public institution that has a unique capability to perform this convening and research and analysis role, none other like it, you have a higher education system that has no peer in the world. Education, yes, has a few uneven spots here and there. At the higher ed level, would you swap it out for anyone else's? I do not think so. And to draw upon that uniquely

remarkable resource to help formulate and carry out the research agenda is a useful investment.

Last, the investment in building the relationships with other public institutions. So, Suzanne, you mentioned how the PTO has been involved in all matters related to innovation, IP, convening events and things of that kind. The FDA relationship, as well, very important. I would add one to the list, the U.S. Department of Justice Antitrust Division.

When we look overseas, it would be nice if there were policies that seemed perhaps coherent. And I realize maybe there is a real benefit that they are not completely coherent and that there is some contest for views. I would like to have the sense that when that contest occurs, the text drafts are exchanged in advance before the contest takes place in the public arena of ideas. That should be an ongoing deep collaboration between the two agencies.

MS. MUNCK: Well, terrific. Thank you very much. And please join me in thanking the panelists and my co-moderator, John Dubiansky, for the panel this morning. We will reconvene at 11:00. Thank you.

(Applause.)

(Panel concluded.)

UNDERSTANDING INNOVATION AND IP IN BUSINESS DECISIONS

MS. MUNCK: Welcome back to our second panel, which will be exploring understanding innovation and IP in business decisions. My colleague, Elizabeth Gillen, and I will be your co-moderators this morning. And we have assembled a fantastic panel -- I am a little biased, but I think they are a fantastic panel of folks who have various levels of experience and various sort of personal experiences looking at the role of early-stage invention and looking at the role of investment and looking at the role of intellectual property.

So the panel that we just completed was a very academic view. Now, we are pivoting to a little bit more of a business view. And I am thrilled to introduce Nicole Morris, who is with Emory. She also has a deep background in sort of the practical aspects of intellectual properties working at several companies. We have Michal Rosenn, who is from Expa, who also has experience with Kickstarter; Greg Raleigh, who will be talking about his experience as an inventor and his experience with New Enterprise Associates; and we will also have Talal Shamoon, who has just a breadth of experience in a number of different areas and he is with us today from

Intertrust.

So as I mentioned, each of you have experience with the business considerations necessary to bring innovative products to market. So I would like to begin by asking each of you to spend approximately ten minutes addressing the relationship between innovation, intellectual property and competition as you have seen it in practice.

And, Nicole, I would like to begin with you, please.

MS. MORRIS: Sure, thank you. I just want to say thank you for this invitation to be part of this really discussion, and also I am just honored to be up here with these really dynamic speakers.

The previous panel did an excellent job sort of laying out the foundation of some of the innovation policy concerns. So my remarks will really focus on my work with entrepreneurs and early-stage technology, particularly early-stage technology originating from universities and research institutions.

And as Suzanne mentioned, I will also draw upon my experience from working at multinational organizations as a researcher and then later on as managing patent council.

So universities and research institutions

play an important role in promoting innovation. Academic technology transfer is what is driving that economic development. The data that I will cite comes from the Association of University and Technology Managers, and their report that I am looking at this morning is from 2016. We are waiting on the 2017 data. It takes a little while for them to aggregate. But it is about 195 different universities, research institutions and also university hospitals, which tend to be a real source of innovation for the pharmaceutical industry.

So in 2016, the AUTM report or AUTM survey stated that there were over 1,000 startup companies formed out of the university technology. In addition, the data shows that the U.S. research institutions continue to develop and invest in intellectual property that arises from the academic research. The federally funded invention disclosures grew about 6 percent in 2016. So that is pretty important. If you think about federally funded research, we are talking about NSF, NIH, and those types of grants that are critical to most of the academic research labs anywhere in the U.S.

So these discoveries borne out of the university research can lead to more impactful applied

research and new commercial products. The invention disclosure activity really is what drives or what we would track as a measure of the key indicator of levels of innovation and this continues to rise. Disclosure activity over the past five years has jumped about 4 percent. And then these disclosures are what will eventually lead to patent filings.

Provisional patent findings are up about 5 percent, and this is data from 2015 then to 2016. And then the overall patent filing activity continues to increase.

I will just drop a footnote here. One of the things that the AUTM report highlighted -- and I noted this when I was in practice -- we are seeing a ton of activity for patent filings in the U.S. originating from foreign actors or foreign entities. So that also is kind of a big driver of the innovation, and the panel that presented before us commented particularly on some of the global challenges that we are seeing, and I think at some point during our discussion today, that is a key driver for competitive activity that is hard to really quantify but is definitely relevant and you see it play out anecdotally.

So my last comment would just be to close

and say that from the university standpoint there is lots of activity going on and we are seeing not only in the graduate, federally funded research area, but the undergraduate sort of innovation activity is starting to really creep up and play a role in either startups or just new companies forming from academics. So that is where I will close and let my other panelists talk.

MS. MUNCK: Wonderful, thank you.

Michal, I would like to turn to you.

MS. ROSENN: So thank you, Suzanne and Elizabeth and everyone at the FTC. As well as my fellow panelists, I am very excited for the conversation today.

So I am speaking to you today as a representative of a company that is working to bring ideas to life. So at Expa, we are bringing together entrepreneurs and creating the environment that allows them to bring their companies to life at the earliest stages. We have partners who work on ideas at those earliest stages of ideation. We help to fund them through their R&D phase and build them out into independent entities.

We also work with outside founders who have a marketable idea and are looking for their first

funding, as well as for a community that is going to help them through the unknown territory of starting a company. And finally, we also find projects that are just getting off the ground looking for capital to take themselves to the next stage.

Before I joined Expa, about a year ago, I was general counsel at Kickstarter, the crowd-funding company. And there what we were doing was providing a platform for creators who actually kind of, similarly to Expa, were looking to bring their ideas to life. They appealed to Kickstarter's community of backers to accomplish that goal, to find people who were willing to back this idea that they put out there and they would like to bring to life.

So based on my experience both at Expa and at Kickstarter, I have absolutely seen the power of intellectual property. I see that it is a valuable aspect for a company and how through strong trademarks and patents, a company can develop a brand, as well as an IP portfolio that puts it in a good position to face competition, as well as to attract capital.

More often though, I will say that the role that I have seen the IP system play with early-stage companies is as a weapon used to stifle innovation at its earliest stages. So both small projects just

getting off the ground with crowdfunding or companies that are at their earliest stages of development at Expa have been targeted by patent trolls. These are holders of low-quality patents who are using extortion essentially as a means of extracting value from their intellectual property.

And I know that my experience is not unique. That is why in a survey of 200 venture capitalists just about a year ago, 100 percent indicated the presence of just a patent demand letter, not even litigation, just a demand letter as a major deterrent in deciding whether or not to invest in a company. And it is why 150 early-stage venture capitalists recently signed on to a letter urging Congress to address the patent troll problem.

So a properly functioning patent system requires this delicate balancing between innovation and competition. But from my perspective, and I hope to expand on this in our remarks today, is the balancing has gotten dangerously out of whack as low-quality patents have proliferated in our system.

So as we begin today's conversation and engage in I think what will be a spirited debate on these issues, I want to be clear about what it is that we are discussing here. We are talking about a patent

system in which an average of 40,000 software patents are granted each year and those patents are often laid out in unreasonably vague terms. Take that together with the fact that there is no easily searchable index of patents nor is there a real consistency in definition used across patents. And you can see why startups and small businesses often face no chance when they are confronted with a lawsuit.

We are also talking about a handful of reforms that have been passed in the last few years that have laid the groundwork for a better-functioning system. The America Invents Act, which passed after nearly a decade of negotiation in Congress, you know, hearings, bicameral hearings, bicameral negotiations, this set up a system that allows for a more fair and efficient method for startups and small business to defend themselves against spurious claims of patent infringement.

So the AIA established something that is called the inter partes review, or IPS, and this is essentially a system that is explicitly designed to ensure that the weakest patents are targeted. First, as of the end of 2016, only .002 percent of active patents were subjected to IPR proceedings. Of those, 55 percent were electronic or computer patents, 29

percent were mechanical or business method. Those are the patents where we generally find the weakest patents, very low-quality patents. Only 7 percent of patents challenged in IPR proceedings were in the bio and pharma fields.

So the IPR system does not just benefit startups and small businesses who are challenging the patent's validity, it also directly benefits patent holders who are advantaged by a well functioning system that produces high-quality patents. In fact, innovation has flourished since the AIA was passed. In the past five years, the U.S. has risen from tenth to fourth in the global innovation index and R&D spending in the U.S. has risen significantly, seeing a 44 percent increase between 2012 and 2017.

Finally, we are also talking when we talk about reform about a couple of recent Supreme Court decisions, in particular, their decision in a 2014 case called Alice Corp. v. CLS Bank, in which the Court ruled in favor of decreasing ambiguity and vagueness in software patents. So in that case the Court held that otherwise unpatentable abstract ideas do not suddenly become patentable simply through the application of a general computer system. The Alice case and its progeny have really helped small

businesses in fighting patent trolls at the earliest stages of litigation. And I speak from personal experience where at Kickstarter, we were able to invalidate a patent that had been asserted against us using precisely the Alice decision.

Now, this really decreases the costly endeavor of staying in business but it certainly does not eliminate it. You are still going through litigation and still going through motions to dismiss and are likely spending several hundred thousand dollars in the process, but it is a good step forward.

So finally, I would just like to say it is a truism to say that -- to talk about the incredible pace of innovation. But it is a truism because it is true and innovation these days simply does not look like what innovation was like in the 18th Century or 19th Century. And our outdated patent system has permitted bad actors to stifle development of new ideas and to drown out legitimate inventors.

A handful of reforms that have come through Congress and through the courts in the last few years have been absolutely necessary for steps to address the problems that face startups and small businesses. And we should build upon these reforms and look for ways to further modernize the system and allow it to

keep pace with the direction that innovation has been moving for decades. Thank you.

MS. MUNCK: Thank you, Michal.

And, Greg, I know that you have slides. So if you would like to take it from there, I can hand this down to you.

And, also, if you are not using your cell phone, if you could move it away from your microphone. I think that that is giving us some interference. Thank you.

MR. RALEIGH: Well, great. Thank you, Suzanne, for inviting me. I am here to provide the perspective of someone who has been an inventor for well over 30 years. I have also been an entrepreneur at three startups that made some of the world's most important wireless technology that we all use today, roughly 3 or 4 billion devices.

And now, I am a venture advisor at NEA, one of the world's largest venture capital firms. We invest in everything from life science to tech, from seed to pre-IPO. We specialize primarily in Series A and Series B. And one of my main roles there is to evaluate deep technology, most of which requires some form of patent protection to invest in.

I think this is a fabulous one-two punch

here because I believe -- Michal believes everything she just said. This is the argument that -- all of these are patterned directly after the arguments used when AIA was motivated. From the perspective of someone who invests in, say, open-source software and thing that do not require patent protections, it is a valid view point. But from my perspective, what we have done with the AIA, the changes in the Court, some of which Michal quoted, we have pretty much destroyed the incentives for foundational invention.

And what I am going to do is just tell you from the trenches how this works, what it means for an entrepreneur or inventor trying to invent a big invention today, and I will show you some data that is very, very difficult to refute showing what has actually happened to big inventions.

And, again, I want to emphasize there are many types of innovation. Innovation is a new software product, maybe a change to an enterprise product or a consumer website, a social network, an app. Those do not really require inventions; they require innovation that relies on other people's inventions. Inventions change the world and inventions require hundreds of millions, if not billions, to invest in in many cases and we have

destroyed those incentives.

So we all know the patent system is not perfect and that was cited earlier, but it has worked pretty well. And I think it is very hard to argue that one of the reasons the U.S. enjoys the leadership we have in technology, life science and across the board in many industries, materials, drugs, is because we have the right for an individual or a small company to own an invention to prevent others from developing that invention and selling that invention. That is called a property right.

You do not really own a piece of property when someone can squat on your property without paying you and the only recourse you have is to try to get some rent, and if you cannot get rent, you are out of luck. That is the world we live in today. This patent troll narrative, which we were very cheered last week when the current USPTO director started debunking the myth.

There is something called a patent troll. That is an entity that preys upon small companies and using crummy patents for extortion value because they charge less than the litigation value for that. That type of entity has existed. It is very difficult for those entities to exist today because it is true that

changes we have made have harmed those entities and made it very difficult for them to practice. But in the process, we have also washed out invention and incentives for invention.

There are other ways to address a troll, which hopefully we will get into today, and those involve Federal Trade practices and policies and processes and laws to go after bad behavior, not inventors and not small companies that are doing invention.

The FTC has power to influence this debate and even to fix the troll problem, again, through restoring the patent system for inventors and then going after troll behavior. So that is why I am here. I am excited to be here.

MS. MUNCK: Terrific. Well, thank you very much.

And, Talal, did you want to do -- I was not sure if you wanted to do your slides or --

MR. RALEIGH: Yes, let me go through --

MS. MUNCK: That is why I was pausing a little bit.

MR. RALEIGH: So I am just going to kind of skip to the chase. I have roughly six minutes left. To make a foundational invention, I will just talk

very briefly about some of the things I have done. I was the sole inventor of something called MIMO technology that changed 100 years of radio science, and that is used in pretty much all of your wireless devices today. I did that research at Stanford. We started a company. We showed that it worked. That company was acquired.

I did a second company which developed the Wi-Fi technology that is in pretty much every computer and every smartphone today. These things take hundreds of millions of dollars to develop and anywhere from seven to ten years to reach profitability. In order for a venture capitalist to get a payback on that kind of investment, the valuations need to be upwards of a billion dollars.

So when a large dominant competitor copies your invention and puts you out of business, we cannot hope to compete with the market power, the pricing power, the engineering resources that dominant competitors have. When they put you out of business, the patents are there as a recourse. They used to be there as a way to prevent the competitor from putting you out of business because you own the property, but nowadays, it is more about trying to get a fair price for the investment that you have spent.

We have talked about the eBay decision which took away the right to injunctions. So there is really -- and the latest example of this is just, I believe today, Qualcomm, in their dispute with Apple showed the ITC that Apple was infringing on Qualcomm patents that were legitimate and the ITC said, we are not going to give you an injunction. So even in a large company whose livelihood depends on intellectual property, we are no longer providing injunction, which means there is not a property right, there is a right to try to charge rent.

So damage awards have also been dramatically reduced by roughly a factor of ten over, say, the last 8 to 12 years. So this is just one example. If you look at, say, Apple, Google, Microsoft, and Samsung in the tech industry, so of the world's most important and powerful dominant competitors, there is roughly a thousand cases that were brought against them post-AIA, and these are litigations.

Of those, there were roughly ten judgments. Recall that if you have a few hundred million dollars into an investment, you need let's call it something just shy of a billion dollars to get a good return for your investors after a seven or a ten-year period. So out of those thousand cases, ten resulted in jury

verdicts that were awarded that were more than $100 million and none of those had been paid. The latest failure was WARF University and a seven-year lawsuit with Apple. And what happens is the Federal Circuit has overturned. So these dominant competitors have become very, very good at a combination of serial IPRs or they may file up to ten IPRs against a single patent to challenge the patent again and again and again. When the jury award comes down, they appeal, and then they do a new wave of IPRs.

This is an impossible gauntlet for an inventor, for a small company. And so as a result, we have begun to understand this in the venture world and it is influencing the type of investments we are making. There is a lot more investment going toward the type of companies that do software innovation, consumer apps, consumer apparel, social networks, things that do not really require patent protections because they are innovations as opposed to invention. And we are going away from things like wireless, semiconductor, core networking, drug discovery. These are things that as a percentage of venture capital have declined very dramatically over, say, the last 12 years.

So this chart shows -- actually, this is

just U.S. semiconductors as an example. The reason we picked this, everything in the world today rides on semiconductors. Whether it is our consumer apps, whether it is a computer program to use artificial intelligence to discover the next drug or whether it is a fighter jet, semiconductor technology is underneath everything. And we are no longer investing in semiconductor technology because there are dominant competitors who are assured to copy the invention and we cannot really invest.

So what can we do? I agree that there were actors, some call trolls what I just call bad actors, who have patents for extortion value. The way to address those types of actors is by identifying behavior, and when you find them preying on small companies and not ever really going to litigation and you can identify the characteristics of their behavior, then we should use trade law to go after them and prosecute them.

At the same time, we should really restore injunction. We should have the right to own our inventions and we should not look at a giant jury award, what we consider to be giant, say, a $500 million jury award as a problem when there is a foundational invention involved in that decision. And

that will help start to restore things.

There are other things we need to do at the USPTO. We need to end serial IPR abuse, this endless stream of arbitrary arguments to attack the validity of a patent. Another example, Qualcomm, Apple teamed up with Intel, filed 42 IPRs against roughly half a dozen patents together. So we need to end that behavior and we also need to end the behavior of arbitrary invalidity arguments where you take two, three, four pieces of prior art, mix and match them and, you know, an arbitrary combination of arguments, again, with serial IPR trying to destroy patents. So those are some of the things we can do to restore U.S. invention.

MS. MUNCK: Okay. Well, I know you have raised a number of issues that the other panelists are going to want to address, but before we do that, I think I would like to turn to Talal for your opening statement.

MR. SHAMOON: Thank you. So I am sort of the poster child for a lot of this type of stuff. So a little bit of story time. I run a company in Silicon Valley called Intertrust, which has been around for about 28 years. The company was founded by a guy called Victor Shear, who is sort of the classic

genius visionary entrepreneur, who in the '80s realized that computer systems were built in a way where security was assumed to come from the outside and, you know, people used to lock machines in a room and just rely on physical security to protect both the data and the code that was running on the machine.

And the founder of my company realized that when a computer became a PC and a PC became a cell phone and a cell phone became a light bulb and it was all effectively a company and these things were talking to each other over open networks, like the internet, you could not rely on locking the machine in the room. The other thing he realized was that people would use these things in very difficult contexts and it was not really clear who the "enemy" was. The military model of computing had basically broken in transition.

So we ended up inventing a new way of writing operating systems where the data and the software in the operating system would be run in a protected environment, so regardless of where the machine was and regardless of where the information went, it was always not only protected but governed. You know, so you could always trust the computations as they traveled through the world.

Cool idea. Founded the company in 1990. Had some pretty interesting character traits. One was sort of an understanding that if you came up with something tremendously disruptive, at some point, a large company would show up and break your toys. And what Victor did was look around for the best way to protect his inventions which, of course, was to file a bunch of patents. He ended up from 1990 to 1995 filing one of the largest patent portfolios in the area and developing a patent portfolio that for our field was on par with what Graham Bell did for the telephone or what Edison did for lighting and whatever else Edison did, and then started fund-raising and building a good old-fashioned Silicon Valley company.

I joined -- I used to be a research scientist. I used to work at a lab in Princeton that was funded by the Japanese company, NEC. It was a basic research lab. One day somebody left the cage door open and I decided to move to Silicon Valley and become an entrepreneur and signed up with Victor in 1997, along with a bunch of other folks who were sort of leaving mainstream research and engineering, and actually we employ a lot of our lawyers because of our commitment to intellectual property, and, you know, we ended up looking for ways to apply the inventions.

I turned out the music industry, another intellectual property industry, was being gutted by the internet and MP3. We ended up developing what is now known as digital rights management, which is a derivative of our inventions and doing deals in the music business and helping start what everybody today does for entertainment, which is digital rights managed music on the internet. We did deals with the record labels. We went public.

And whether it was a self-fulfilling prophecy or not, a small company from Seattle called Microsoft showed up and said, hey, we would like to do a deal, and back and forth, back and forth. The terms of the deal were just unacceptable to us because they involved Microsoft getting a license to all of our IP, whether or not they actually used the products we were making. We said no and thus started a -- well, what turned into a huge patent war. Microsoft we believed and asserted in court eventually that Microsoft copied everything we did, did not take a license.

We started to go bankrupt. We were public on the NASDAQ. We went public in ‘99 with 500 people and just decided we were going to go back and use the patents for what they were made for and we sued them for patent infringement. We were called all sorts of

names. We had to lay off 90 percent of the company. We lived in the forest, ate squirrels and fought a guerilla war against the largest monopoly on earth at the time, and ended up going private.

We became a JV of Sony and Phillips, two companies that have a very strong commitment to intellectual property and standards in 2003. In 2004, right after a very good Markman ruling in our favor, we ended up settling with Microsoft after a long negotiation for the sum of $440 million, which is one of the largest settlements of its type in the world.

I became CEO at that point, about a year -- when we went private, and at that point, I started to rebuild the company in the image of a Qualcomm or a Dolby. I mean, we always had a very strong commitment to intellectual property, research. Today, we are about 250 people. We employee a Turing prize winner as our chief scientist. We have an actual research lab and we are fantastic innovators. We make products and we also do a lot of licensing. The last 15 years has been an intriguing ride.

Now, in the process, we also set up a strategic venture fund in the company and we have been dealing with all sorts of issues not only related to security and management of entertainment and media,

but the security and management of distributed data sets across the internet. So, today, we are very active not only in the entertainment space, but also in the energy space, we have a lot of data management activities, and automotive and so on.

Now, in the process of being strategic investors -- and this goes to a point that Michal made about trolls -- we invested in a whole bunch of companies, one of which was a -- at least at the time was a small thermostat company called Nest Labs, which is now owned by Google. And Nest, in fact, started in a borrowed conference room in my building. And we were part of the early stage funding rounds with Google and with Kleiner Perkins.

And I remember the first time I saw a Nest thermostat I told the founder, I think Honeywell is going to be upset about this. And it took about five or six weeks after the launch and I got a phone call at 7:00 in the morning from Tony Fadell that founded Nest Labs going, they did it. I said, what did they do? And he said, they sued me for patent infringement. So I was like, you know, do not talk to anyone, we will be there, I am going back to bed.

And what Honeywell did was kind of interesting, they obviously are not a troll under any

definition of troll, but what they did was they sued Nest with a bunch of patents with the sole intention of bankrupting them. And Nest fought back. They were well funded. They did not have issued patents of their own, but between us and Google, we kind of helped out. They prevailed. They were acquired by Google a few years later for $3.2 billion, which was not only a good exit for us, but a great outcome for everybody, and Google acquired a great team and a great product.

But in the process what we learned was that in addition to patent trolls and everything that is going on -- and we will bicker over some of the details in the last two presentations. I have some opinions that agree and disagree with some of the comments that were made. There is a form of -- it is not NPE activity, but it is a different form of trolling where large companies will attack innovators with intellectual property in a frivolous way with the intention of bankrupting the company. If you do not have patents to countersue with, you do not have the funds to fight a company like Honeywell, and other bid companies do this all the time.

I think everybody here remembers the IBM/Amazon shopping cart lawsuit in the mid-‘90s. You

go out of business, you run out of money, or your investors flee. And I know I am running out of time, so I will end with this. What we ended up doing years later was partnering with Google to create a program called Patent Shield, which we run today, where we run it like a venture activity, but we go to innovative startups and we provide them with a portfolio -- I think it is about a thousand patents right now -- that they can draw from in the event that they are sued by a product company so they can countersue.

And it is our own contribution for carving out a little bit of defensive perimeter around innovative small companies so they can actually go out there and innovate without the fear of being attacked by larger companies that they are disrupting. Now, if one of our startups or if a startup was actually infringing somebody's patents legitimately or if they were actually pilfering somebody's intellectual property, by all means, they deserve to go down in court.

But our intention is to find innovative companies and provide a defensive mechanism for them that really protects them from what happened with Nest and Honeywell, and we see this all over the place. We started the program about a year and some change ago.

We have about three or four startups in it today. We have three or four more coming in. And it is a really neat way to interface with innovative startups and actually help them develop their own patent positions in addition to providing this defensive capability that will not only help them defend themselves, but it will also keep their own patents clean so that they can continue to build on their patents.

So with that, I will hand over the last ten milliseconds of my time to Suzanne and we can discuss.

MS. MUNCK: Well, thank you very much.

We have touched on a number of issues that I want to explore on the panel. I think before we talk about some of the policy points, for me and I think for the audience, it is helpful to know that each of you are sort of involved, I think, in different stages and with different sectors. And so when you think about all of the issues that were raised in the opening, how do you evaluate the IP position of a company that you are either advising or considering investing in?

And I know that at the beginning of this panel we talked a lot about patents, but earlier in the day we talked about trade secrets; later in the day, we are going to be talking about copyrights. So

from just sort of a personal business experience, what do you do when you sit down with a company and you are either advising them or you are looking at investing in the company? And I think we can just go down the line this way if that works.

MS. MORRIS: Sure. So for the early stage companies or entrepreneurs that have an opportunity to interface with, the first question I actually start with is more on the novelty perspective. So I start with, what problem are you solving? Presumably, all of the speakers talked about enforceability of patents. So presumably, the patent is being filed to protect some commercial product. So I start with a conversation on what problem are you solving, how does your technology solution solve this problem, and what are the current modes for -- how are people currently dealing with this issue. So that is your competitive market right there.

So I try to get an understanding of where they sit in the competitive landscape to really answer the question whether a patent filing is worthwhile. So in order to sort of get to that answer, we start with these sort of derivative questions. And then in exploring whether a patent filing is worthwhile, you look at other areas of intellectual property. So

trade secret is not a useful tool in the academic setting because it is counterintuitive. Academics need to publish. Trade secret, it needs to be secret. So they are in constant conflict.

But in the commercial marketplace, it is a very viable solution to have a trade secret strategy in conjunction with the patent-filing strategy. So if that is an opportunity for the particular entity, I definitely explore that with them as well. Trade secret protection requires a lot more rigor and discipline. So it is not usually useful for a startup because in an early stage company, you would need help. There are very few early stage opportunities that are completely contained, self-contained, and can grow with the two or three founders that started it.

You do not see Microsoft very often anymore, you do not see Facebook very often anymore. So there needs to be some circle of trust within that. So patent filing is the other side of the protection that they can then go out and talk to potential suppliers and folks in the supply chain.

And then the third piece, which we are going to get to this afternoon, is copyright protection. So that is definitely an option. It is unique in that there is some interesting stuff happening in the world

of copyrights. So I am curious to see what our folks this afternoon have to say about that. But most people look to patents as a real -- sort of the 800-pound gorilla of IP for protection and enforcement. So we start there and then we look at other strategies based on the technology.

MS. MUNCK: And I just have a followup. When you are looking at mapping trade secret protection and patent protection, for example, how does that go to either your valuation of the company or your expectations for business projections for the company first? And then, second, how do you decide which rights to protect? If it is a company that is eligible for trade secret protection, how do you decide which rights to protect through trade secret and which do you protect through patents?

MS. MORRIS: Sure. So from the valuation perspective, it really depends on the commercial product. So my time at Coke taught me how trade secrets can truly, truly be an asset and truly be valued and have a valuation that is quite incredible. But you do not see that until time. So time is your determination of how really valuable your trade secret is.

WD-40 is another good one. There are lots

of interesting trade secrets that have maintained their secret status. It is really hard to determine that up-front on early stage tech. So the trade secret benefit that truly comes out is know-how, know-how knowledge, what I call negative know-how, so you know how things fail. We have all had some time in a lab, so we understand sort of your laboratory experiments disclose for you certain things that you may not want to put in a patent filing. So that level of process, step, know-how knowledge is perfect for a trade secret strategy.

Then on the patent side, you are able to see that directly correlate to your commercial product. So your commercially viable features should be represented in your patent claim. So some of my critique of Greg's remarks -- and, Greg, you are a great person, but I do have some critiques on your remarks -- when you look at some of the patent damages and some of the case law jurisprudence that we have seen over time, the reason that damages are going down, we sort of finally got it, that you do not get to claim, you know, a billion dollars' worth of lost sales when the patented feature was really a $3 chip.

So prior to some of the recent changes in law, you would just say the total sale of the product

is really what drove the demand and that is how I get my damages. Well, actually, the patented feature that your rights are directly related to in the damages case is related to the $3 part. So you only get the equivalent amount of damages related to that unit. So the law has changed to account for what is really, truly valuable.

And I am not an economist. We had some really talented folks early today. But, to me, that works with what you want from an economic market interaction with IP. So I like the outcome and I understand how we got there. And, now, that we are there, we are smarter about what we think about when we start the filing up-front, and we want to protect the features in the patent claim that really directly relate to commercial viability in the market, what they want.

So that is part of the -- back to the trade secret patent strategy perspective. You are able to see that value in your patent if you can sort of protect those features up-front.

MS. MUNCK: Thank you.

And, Michal, sort of the same question. How are you evaluating the IP position? Because I do want to begin to tease out some of the different views I

know that the panelists share with respect to the role of intellectual property and sort of anchor that in what you are looking at when you are evaluating companies.

MS. ROSENN: Yes, absolutely. I think, similarly to Nicole, the novelty of a company is really the touchstone when we at Expa are evaluating a company or I think any venture capital fund is evaluating a company. How, as Nicole was saying, are you addressing a problem? What is the problem you are addressing and how are you differentiating yourself from the competitive landscape?

What I would say is that filing a patent is rarely part of that initial evaluation for us. It is simply the case that in the environment in which we are working and in the industries in which we are working, the pace at which companies are innovating on a particular problem and are competing against one another just far exceeds the pace of filing for a patent and going through that system.

And so, you know, when advising a company that is very early stage, that is coming to us, we start to think about trademark protection and about patent protection as tools along the way. But rarely -- in my experience -- and admittedly, hardware is not

an area that we focus on and I can absolutely see that venture capitalists who are focusing on those areas might have different perspectives here -- in the software field and the internet technology field, the patent portfolio and trademark portfolio is a way for, as a company to develop, for it to build value to attract further capital to begin to differentiate itself once it has established itself, once it has gotten early stage funding.

But, again, the primary thing that we are looking at is a company's ability to outpace competitors and to stay ahead of the curve, and patent filing is not a major part of that evaluation for us.

MS. MUNCK: Thank you.

And I think Greg sort of --

MR. RALEIGH: Yeah. So this is actually a very complex question and there is not a single answer. So we invest in a lot of companies like Michal invests in, and in that case, patents are not all that important. So if you are doing a consumer app, some twist on a social network, a new enterprise piece of software, you might be relying on open source where patents are largely unavailable. That does not mean you do not have value. And there you are relying on just time to market, excellence in the product, and

a lot less money invested to get the product out.

Generally, you do not invest hundreds of millions of dollars in a company like that until the product is proven, you show product market fit, and then you are investing not in an invention, but in marketing the product, a sales force, a worldwide marketing program, et cetera.

We still want to see a patent portfolio typically for good practice and just in case the patent system someday recovers, as we are hoping it will in the next few years, so that there is some value, and if nothing else, for cross-licensing value.

But, now, shift gears if you are talking about a new drug, a new medical device, a new way to do wireless. You know, we have seen some really interesting things for 5G lately. And it has become much more difficult to justify those investments and that is across the board in the venture community. So what you are hearing is different perspectives on the same set of problems.

We do see everything, so we change our policies based on what we see. Nowadays, trade secrets -- so if you reverse the clock 15 years ago, trade secrets and patents were a choice. Now, you really have to rely on trying to go fast and keeping

everything secret. In my career, I have done three big inventions that, you know, really changed the market in wireless. All three of those were copied very quickly by dominant competitors. So it is a 100 percent they will get copied.

So you can try to keep them underground as long as possible with a trade secret, but that is not the same as a patent because you are eventually going to get copied. And they have literally a thousand times the resources to put on the development than you do, they have market power, they own the customers, they control the debate as they have in the patent world. So it is very, very difficult without patent nowadays to justify certain investments.

I would like to just comment on a couple of other things. We see demand letters quite a bit. But we do not -- I mean, generally, I have never seen a demand letter in the early stage. And after we had the pre-call, Michal mentioned she has seen demand letters when companies first get off the ground, and I said, I have never seen that. So I asked several of my colleagues in the venture world. And I said, have you ever seen a demand letter at that point and none of us have, at least the people I have talked to in a quick canvass.

Where we see them is when a big success begins to become evident. So that is where maybe you are going to go public. You are a unicorn. You know, you are worth a billion dollars. Maybe you just raised $50 million in a fund-raise. That is generally where we see these things. And you are a little more sturdy at that point.

And I will tell you who does not need protection against demand letters is the giant companies pushing the narrative in the patent world. Okay? When it is small versus big, that is a very different scenario than whether it is a bad actor or a large company attacking a small company. What we have done, in general, is made it so expensive and so time-consuming to try to defend a patent, you are talking seven years, appeals, dozens of IPRs. There is no end to the process. And maybe it is a $30 million process over that time. That is an impossible gauntlet for a small company.

So you might say, okay, I am going to do a trade secret and try to escape, you know, first orbit and get into the -- you know, make it with the company without those protections. Sometimes you can invest in that, but that is a much riskier scenario than if you can own the product of your investment.

One of the things -- there is this idea that you should get a royalty on a chip that costs a dollar versus, say, a phone that costs $1,000. This is called the minimum saleable unit. What it does is it motivates the manufacturer of the phone to try to crowd your intellectual property down into something they can say costs a dollar. And the best way to evaluate the value of an invention is to say, what would happen to that product without the invention? What would the market value be without that invention regardless of where it goes in the product?

MS. MUNCK: So we keep getting into a lot more interesting questions and much more interesting questions than the ones that I have written down. But I want to give Talal a chance to answer this question, sort of how do you evaluate the IP position. And then, Nicole, I know that you have a question.

MR. SHAMOON: People have hit a lot of the points. I will focus on entrepreneur psychology and how we evaluate. I mean, I have a bunch of trick questions that I ask in a pitch just to make it go quickly, one of which is why are you different. The other is, if you are successful, how do you prevent somebody from, like, knocking off your product. And there is a basket of tactics that companies employ.

One is just to run faster than the other people, build up enough of a base that somebody is going to want to buy you for your market accomplishments. And there is not a one-size-fits-all strategy.

I have never really met a successful company that is going to purely rely on trade secrets. Trade secrets -- I am advising -- it is actually an Israeli company spinning out of Tel Aviv University in the agriculture tech space, a very patent-rich area. They are coming out with a really good patent portfolio. They genetically engineer plants to complain louder when they are sick than when they are not sick, and then they have nanosensors that detect that the plant is sick. It is a very cool idea. They are going to depend on their patents to go up against the Monsantos of the world. At the same time, the techniques for genetically engineering a plant are going to be trade secrets.

Now, the woman who is running the company is brilliant, but she does not have a lick of intellectual property expertise. In that situation, we have been advising her on how to create an entire intellectual property strategy. And there is always a way to fit an intellectual property strategy to any technology venture. Now, it may be you are in social

network, you are in the data space, and you are using a bunch of open source tools. So, by definition, most of what you are going to do is going to be open source anyway. That is an intellectual property strategy. You know, you are using sort of the ice-nine of the open source system to basically defend yourself by not having any defenses. A lot of people do not know how to play that instrument very well and they need to develop an IP strategy themselves.

The last point I would make is we have talked a lot about, you know, light bulb, patent, go to market. But on the internet, a lot of the stuff that is being done is in the AI and the data space. And I do not know if you went to that panel at the conference we attended in Sweden, but there was an attorney from Microsoft who brought up a really interesting set of issues about there not being any really good intellectual property mechanisms to actually protect data. Data falls between the cracks of copyright, patents, trade secret. And there are all sorts of cases where, you know, like can you copyright a phonebook, can you use the data in a phonebook even though it is copyrighted, stuff like that.

If you look at the largest companies in the

world today, Google, Facebook, Netflix, Amazon. They are all data-driven. And, you know, Google goes to extreme lengths to protect the trade secrets that allow them to analyze the data for their profit. Facebook does a lot of that themselves. But if you have a large data set you have accumulated through a bunch of algorithms you have developed, you probably cannot patent the algorithms because you have used a bunch of open source tools to develop them and then you fall into all of the oddities around software patents.

Your data is your intellectual property. But there is no clean way of going after people who grab it or make inferences on it, and that becomes a really tricky differentiator as well. And all of the problems we are talking about with the patent systems have to do with the fact that by definition -- and we want it to work this way -- the law lags innovation. And there is always this undercompensation/ overcompensation effect.

The whole PTAB IPR thing is literally a hack on a system because people could not wait long enough for the law to adapt. So we have done a bizarro retrofit that has done a really good job of tamping down NPEs, but has taken a lot of -- you know, there

is a lot of crossfire and a lot of collateral damage in the process.

But the system will eventually catch up and clean its act up. And I agree with Greg. I think the FTC can do a lot to sort of come in on the perimeter of what the PTO is doing and sort of help the system act more rationally until the rest of patent law sort of comes into play.

I will give the floor back to you, Suzanne, but one thing I think we might want to address is actually the context of American innovation operating in a much more globalized world where people who never used to file patents and deal with IP systems like China are actually becoming more assertive and more aggressive than we are and innovating in their own odd way. There is actually a global trade aspect to what we are discussing. I hope we can come back to it in the context of some of the questions that come down the pike.

MS. MUNCK: I think that is an interesting point.

Nicole, I know that you had a question that you --

MS. MORRIS: Yeah, I know the panel has kind of taken a life of its own. So if it feels like we

are sort of scrambling, it is only because there are lots of interesting issues that are coming out of our comments.

I wanted to go back to something Greg said. I think it is a little bit more complex. I actually want to learn a little bit more about how you guys deal with these investment decisions. So you have mentioned that the pharma and medical device, they are just not as attractive as business investments. But my question points to -- it is really what stage are you looking at pharma and medical device and is it really because it is a patent problem or is it the regulatory issues and the uncertainty in terms of toxicology data and the uncertainty in terms of efficacy for those particular industry sectors that make that a less attractive or more difficult investment? So can you tell us --

MR. RALEIGH: That is actually a great question. So there is no doubt that in addition to intellectual property, et cetera, in life sciences, regulatory is massive. And regulatory goes through phases where it can be easier or harder to get approval for something and that greatly influences the outcome of the investment because it stretches out the time and increases the risk. When it is harder, it

makes it better.

What I was saying is that -- here is an example. Let's say you develop a fantastic medical device. And let me just say this, these new techniques, there is actually a paper by U.S. Inventors for Jobs that you should all read that is coming our shortly that I just saw on serial IPR abuse in the patent system. This is where a giant dominant competitor can file as many IPRs as they want until the patent is dead, and it is extremely effective.

And so what has happened is the dominant competitors practiced on small companies first, perfected their art of destroying patents over periods of time, and now they are going after some of the most important intellectual property producers in our economy. Genentech and life sciences is now -- it is no longer about the troll patent. These techniques are so good at killing patents that the most valuable patents in life science are now being attacked, the most valuable, Qualcomm, the most valuable in the world for wireless are being attacked.

And so when you face that kind of environment and you are building, say, a medical device, you have to say can we keep it under wraps long enough to get out there? And when is that

disease that has happened starting in the tech world with the dominant competitors going to come to my industry? And, now, we see it migrating from tech into some segments of the medical industry. So the disease has to be stopped and reversed so that great patents, wonderful inventions can be rewarded.

So no question in life sciences, the other regulatory factors are at least as big. But still if you cannot protect -- for example, when you could have an injunction for 15 years, you knew for 15 years that medical device was yours to produce. Nowadays, it is, okay, how long can I stay ahead? Once it becomes a big market, someone is going to put 100 times the resources you are able to put, so maybe it is seven years or six years, and then that factors into the investment pieces, and so then that degrades the valuation, which degrades the amount of money you can invest, which may prevent that from coming to market.

MS. MORRIS: A couple of rebuttals. One, serial IPRs are really hard to do. So let's drill down a little bit on IPRs. So from a startup perspective, there are very few startups that have more than five patents. It is hard. It is almost impossible.

So serial IPRs are difficult to do because

there is an estoppel provision within the USPTO that says if you bring all of your claims -- or you need to, at least in your initial filing, bring all the claims that you reasonably could have filed at this time. So there are some protections within the system to stop that. But I am not saying that people have figured out a way to game it. But it is not gameable as easy as some of your remarks tipped the scale towards a little bit in my opinion.

And then the other part, as far as -- oh, gosh, there are so many things that you said that are rich. Oh, I lost my train of thought on the second part. But the serial IPRs, I wanted to at least --

MR. RALEIGH: I hate to -- hopefully, this is not too wonky, but this is super-critical. This is just one example of the abuse that is occurring. So I kind of feel like you just lobbed me a softball, so thank you.

MS. MORRIS: No, that is okay. Keep it coming.

MR. RALEIGH: So this paper that will be coming out -- and I think it is coming out within a week -- it actually is similar to a paper that came out in IP Law a couple weeks ago -- shows how the dominant competitors, especially in tech, are

completely subverting the intention of the AIA and filing up to a dozen IPRs against a single patent. And they will also practice something -- if it is a small company they are going up against, they will practice something called portfolio abuse where they --

MS. MORRIS: Are these being instituted or are they just being filed?

MR. RALEIGH: Many are, yeah, eventually. Here is the thing with IPR, if you can keep filing, there is a gambling effect. So you are dealing with human judgment on these panels. Some patent judges in the panels are more favorable than others. And eventually you get a panel where two of the three are favorable to one of your arguments, one of the, you know, two, four, six, 12 arguments you have been able to make and you have been allowed to make. And they are very similar arguments involving combinations of art that are often arbitrary.

This is happening and there is data on it. It is being published. This is a fact. And it is something that has to be fixed. And it is one of the most deadly things happening to inventors right now that is out there. That, in combination with arbitrary assemblances of prior art references, take

two, three, four prior art references, mix and match them, and five different arguments until somebody says, hey, you know, I think that is right, and then you lose the patent.

MR. SHAMOON: I think you are protesting too much. I mean, I agree with you, the system is overcompensating. But Apple versus Qualcomm is a bad example. That is called a negotiation where I come from. You have two IP giants and Apple is not exactly an angel. They sued the crap out of the entire mobile space and they know how to stand behind their patents trying to figure out a cheap deal on chipsets and they are going to the court for that.

In terms of IPRs being used -- big companies hitting little companies and things like that, this is a technique that is available -- and far be it in my role to defend the way big companies defend themselves, but it is a technique that is available to them. And if they are sued, they are going to fight back with whatever is at their disposal. Fifteen or 20 years ago, there were no IPRs available and what would happen is you would sue Mr. Big in San Francisco and Mr. Big would countersue you in Australia because it was like really expensive for Joe Startup to go to Sydney to defend himself.

So there is -- the minute you are in court, it is a war. Both sides are going to use every tool at their disposal. We now have a tool that is being overused and it -- you know, as I said, the system will compensate back. But you are picking on these anomalies to amplify the problem and, you know, to me, it does not seem that bad.

MR. RALEIGH: Yeah. So if I can just completely disagree. So, again, please read the paper. There are tons of examples of small companies, WARF is an example, which --

MS. MORRIS: WARF is not a small company, by the way. It is a university in Wisconsin.

MR. SHAMOON: I mean, you get people like the regents of --

MS. MUNCK: So, you know, I am going to jump in here because I think that we can --

MR. RALEIGH: What is that?

MS. MORRIS: WARF is not a small company. It is the University of Wisconsin.

MR. RALEIGH: No, I said it was a university.

MS. MORRIS: Yeah, yeah, yeah. But they have several patent victories. So the reason they can fight for seven years is they are quite successful.

MR. SHAMOON: The endowments of these universities are bigger than the market cap of a lot of companies.

MR. RALEIGH: So we are -- look, here is a question.

MS. MORRIS: But I know we are getting adversarial --

MS. MUNCK: No, no, I just -- the reason I -- the adversarial part is fine. I have no problem with that. But it is more about honestly listening to this transcript and thinking about how I am going to use it in a report. So I am very grateful to have you guys talk about these issues, but I think one thing that is interesting to me is, you know, the FTC has weighed in on a lot of these issues. We have not really weighed in on the PTAB issues very much. And, tomorrow, if I can make a pitch for tomorrow as I said this morning, we are going to have Patent Commissioner Hirshfeld and the Acting Chief Judge of PTAB, Judge Boalick. So we will be talking about some of those issues.

But I think that -- as I said, I do not mind the adversarial nature, but if we can kind of talk about specific instances that have happened to you and specific recommendations that you have for that issue.

Because, you know, we can talk about Apple and Qualcomm and that is okay, but we do not have Apple and Qualcomm here. So that is not -- in terms of using that for my purposes in a transcript, that makes it a lot more challenging.

So I think -- and, you know, Elizabeth and I have been talking about how to sort of ask these questions and I really do not want to exclude Elizabeth because you have a lot of interesting thoughts on this. So, I think maybe now is a time to turn to some of the points in Greg's slides and as you are answering these questions, you know, thinking about how it has impacted you in your particular industry and to the extent that you can make the most specific recommendations possible.

So, for example, I think what we were just talking about with serial IPRs, that is something that would give you a chance to say, okay, are there -- you know, from a research perspective, are there serial IPRs happening, are they serial IPRs or is it different prior art being brought against different claims in the same patent? Because, to me, that is a little bit different. So that is just an example of what I am talking about. But I want to give Elizabeth a chance.

MS. GILLEN: Thank you, Suzanne.

I just wanted to return to a point that Greg made earlier in his slides that IP remedies today no longer justify the risk of investment. And I would like to hear thoughts from the other panelists as to whether you agree with that statement and whether investment decisions have adapted or changed to modify that trend and, also, what factors the FTC should be looking at in this discussion.

MR. SHAMOON: We advise all the companies we invest in to build strong patent positions. And one of the things that really attracted me to Nest in the beginning was he had a serious commitment to building an intellectual property portfolio of his own and actually has some really good patents. That not only goes to their ability to defend themselves, but in an exit scenario, it is another brush of color that adds value to an exit.

If you have a strong patent position and everything else has failed, sometimes people will buy you for the patents. If you have a strong patent position and you are succeeding, that will make an acquirer feel better about buying in. I think that every good American entrepreneur should be building a strong intellectual property strategy and we encourage

all the companies we invest in to do so and help them.

MS. ROSENN: Yeah, I would agree with that. And, you know, setting back the statistic that I mentioned earlier, there is the 44 percent increase in R&D spending from 2012. I do not think anyone can look at the current investment atmosphere and say that that is declining or that venture capitalists or other investors are hesitant to invest in the U.S. market. I think quite the opposite.

And, you know, very similarly to what Talal said, intellectual property is an enormous asset for a company. It is a strategy that entrepreneurs need to be thinking about from the earliest stages and whether that comes from the development of trade secrets, whether that comes from filing patents for legitimate inventions that they are accomplishing along the way as they build their company, whether that is building a strong trademark portfolio and building a brand around to that, that is something that we very actively advise our companies to do.

There is one point I wanted to go back to that I think Greg has been citing as one of the obstacles that has arisen for inventors, and this is the issue of injunctions. You know, I think Greg is citing an eBay case from a while back. And just to

clarify, injunctions are still available to patent holders the way that injunctions are available to any other litigant in this nation.

It is simply -- that eBay decision simply -- which by the way was a unanimous decision in the Supreme Court -- simply brought the field up to a place of equality where patents no longer got this exceptional rule of an automatic permanent injunction and they simply had to prove that they were entitled to a permanent injunction the same way any other litigant does, by meeting the four-factor test. And when they meet that test, they receive an injunction, as anyone else would.

It simply does not -- it simply sort of took the favor that was -- the exceptional favor that was given to patents and treating it as though it was kind of personal property and equalizing that a little bit.

So one additional point that I would make -- and I would like to harken back to something Tala said. I am very, very glad that you brought up the point of dominant industry players using -- that it is not just trolls who are engaging in troll behavior, not just nonpracticing entities, but it is a very, very common practice that I have seen at both

companies that I have been at where projects on Kickstarter, as well as companies in Expa's portfolio, have been targeted by dominant players in the industry, bringing spurious claims, usually filing dozens against dozens of defendants at the same time with, you know, nonparticularized pleadings and complaints, often alleging use of technology that is not even used by certain of those companies.

So to the extent that the FTC can, you know, help to further the project of getting particularized pleading standards, making sure that -- well, venue, I think, has been addressed by the Supreme Court to a large degree. But to the extent the FTC and the USPTO can continue to ensure that venue is not being abused, I think these are the areas where we can see improvements in the current system.

MS. MUNCK: I think that is a theme, correct me if I am wrong, that each of you have raised. And so I think that that is an interesting point. Because as you were talking about that I was wondering, were these sort of issues that you were seeing before the abolition of Form 18 or are you still seeing them? And the reason that I am asking this is tying back to sort of the tools in the FTC's toolbox.

When we issued our PAE report, one thing we

saw was the potential for nuisance litigation among some players and so our recommendations went to litigation behavior. And it is fair to say that that was criticized. And I think that is right and we take that into account. But I am wondering, as you are talking about what you are experiencing as investors in early stage players or elsewhere, and the idea that you have companies that are bringing sort of serial litigation, how do you address that and is that taken care of with Form 18?

MR. RALEIGH: What is a serial litigation? Let's make sure we understand.

MS. MUNCK: Well, I think what I am -- and I want to make sure I am not paraphrasing you in the wrong way. But if you are saying that as a small company or as an entry company you have some -- and as I am sort of saying this, I want to make sure that I am not saying it in the wrong way. So maybe I will ask you that. Do you think that that is a fair characterization of what you have said? And if it is, what remedies would be necessary?

Because as I am thinking about this and as I am listening to all of you, I am thinking very clearly of the FTC's role in trying to make sure that we are hearing everybody and balancing all of the issues.

MR. RALEIGH: Yes. So in general, innovation and investment in small companies in the U.S. is booming. I agree with Michal. What is happening is where we are investing is changing. And I want to take us back to that. Because it is a fact that certain industry segments are underperforming in the percentage of U.S. venture capital compared to others as a result of the fact that our intellectual property laws have changed. The data is there. So I would encourage the FTC to look very deeply into that and ask the question, is that the incentive we want to provide?

Second, there are abuses on both sides. I fully acknowledge this notion of a bad actor that attacks small companies. But there is also another kind of abuse which we have not even talked about. We talked about big companies suing small companies over patents, but we have not talked about big companies having policies that they institute that say, do not pay any attention to patents, do not look at infringements, ignore until you get sued, and then go scorched earth policy and IPR in litigation.

And so you asked us to provide real world examples of personal experience and also not to talk about companies. So I have personal experience twice

in the last eight years with companies being approached for acquisition that have fantastic technology. They get their brains picked for two or three weeks and then the large dominant company says, instead of a billion dollars, we have decided this is only worth $50 million, so if you would like to sell for that, fine. Otherwise, we are going to do this ourselves.

And then the small company says to the executive, well, we have patents. And the large company says, let me tell you what we do to people who approached us with patents that are like you. We sue you with our own patents. We take you to court. We file an IPR against your entire portfolio. That is called IPR abuse in a portfolio sense, not just the ones you are going to come at us with, but your entire portfolio. We will put you underwater there. And then, you know, if you win in court, we will appeal and we will keep you going for seven years. This is going to be a massive expense for you and we will put you out of business. I have seen those conversations take place. They happen all the time.

MR. SHAMOON: My company is living proof that if you do not take that and you fight back, you win.

MR. RALEIGH: If you can raise the capital. So then you have to go out -- I agree.

MR. SHAMOON: I mean, it is the point of business, right?

MR. RALEIGH: In today's world, I am not sure that is true anymore. Ten years ago, yes, because I think that is in the order of the time frame you have. But in today's world, you go back to your venture capitalists and say, I would like $30 million to fight giant company A and that is generally not a very popular investment today.

MS. ROSENN: Well, I would also say that IPR did not introduce any new avenue for claims that did not exist before. These are claims that would have ordinarily been brought through litigation, which is significantly more expensive for both parties. I do not think that the large parties that you are talking about that are using this in a weaponized way would be cowed by the cost of litigation --

MR. RALEIGH: True. But if they --

MS. ROSENN: -- comparatively to IPR. So IPR simply makes it more affordable and, frankly, easier for the person defending the --

MR. RALEIGH: That is the argument. And I am sorry to be the thumb that sticks out today, but

there is reality out there. So in court, you have one bite of the apple and you get to make one argument and then the court decides whether or not your argument is right. The rules in IPR have been different. Hopefully, they will be cleaned up, and they are looking at it now. But you can make many, many arguments. You can also -- there is evidence of collaboration in the market where giant competitors collaborate through firms like UnifiedPatents and also directly. Like take for example -- I will not name any names, but they collaborate with each other. And you may see, like I say, a dozen IPRs. That is a dozen bites at the apple, whereas in court, you have one.

MS. MUNCK: So, Greg, if I could ask a followup. When you are talking about -- because I think you talked about a valuation issue and an IPR issue. And what is your recommendation for addressing that? Because I think, you know, the IPR sounds like it is just one component.

MR. RALEIGH: Yeah, IPR, arbitrary combinations of art, BRI, which are addressing, you know, clear guidelines in Alice to make Alice more predictable, and then the realization that a large jury award for a very substantial invention is fair

and then hopefully return some kind of injunction. Just to address your earlier point on injunction, ITC cases -- a minority of ITC cases are found to infringe. Once it is found to infringe, there is an 85 percent failure rate from the time it is found to infringe to injunction. So you are looking at a rate --

MS. MUNCK: Do you mean exclusion order?

MS. RALEIGH: Yeah, an ITC. And a lot of those injunctions are temporary. You are looking -- so as an investor or as an entrepreneur, you say, I have like a 95 percent chance of failure of getting an injunction after I make all the arguments, after my invention has been copied. You have to assume that is unavailable in today's world.

MS. MUNCK: Okay. And I think we will -- it is a good idea to go back to the data in terms of the ITC issues because I do not have that at top of mind.

MR. RALEIGH: Right.

MS. MUNCK: But I think, you know, one issue is always separating out the 337 standards and the standards for an exclusion order, and I think, you know, in the past, to be fair, the FTC has supported eBay because, as a matter of our policy, we have said that there should not be special rules for

intellectual property. And so, you know, one of the things that we are doing -- and that extends in several places. We say that there should not be special rules for intellectual property. We say that we do not have to presume that patents will give you market power. That was sort of more unique in '95 than it is today. We say that patent licensing generally is procompetitive.

So it is a leading question, but are you sort of suggesting that we should have different rules for intellectual property than we have for other marketplaces as we are looking at --

MR. RALEIGH: So you have to ask yourself is it property. Right now, it is not. So I think there is also a question, which becomes extremely complicated and I cannot pretend to understand how to resolve it, but it is a question I think that should be asked, is an injunction for a small inventive company who depends on that invention to create a return for the employees and the investors, is that the same as an injunction for a giant competitor that probably does not need the injunction to live and survive and profit?

So I think that --

MS. MUNCK: I am just thinking about the

four eBay factors and --

MS. MORRIS: Yes, I have them here. The patent owner must show -- we are talking about injunction, so let's get to the test -- irreparable harm, that money damages are inadequate, the balance of hardships go in favor of the patent owner, and then the public interest would support a permanent injunction. So what eBay did is harmonize the law.

So as Michal mentioned, you know, before we had sort of a special case for IP. The Supreme Court said, no, no, no, we have always allowed parties to argue for injunctive relief and this is the test. You, in a patent case, must follow the same test.

Now, if you can argue and show -- and there are cases in the pharma industry where it was Sanofi versus somebody else -- I just looked at two of them yesterday -- where they were able to prove and show that there was irreparable harm and money damages would be inadequate. And in the article I read about it, it is usually if it is a two-player market. So going back to economies of scale. So you have two either small players or dominant players, it does not matter, but they have the entire market. And one of them is infringing on the patent and they argue for a permanent injunction, that the court has granted that

because there was an ability for the pharma company to show irreparable harm.

MR. RALEIGH: Yeah. So not to use specific company names, but it is very timely. So just I think this morning, an order came out from the ITC with the Qualcomm case.

MS. MORRIS: That is a different standard. Just to be clear that the exclusionary order standard is not the same standard for a permanent injunction.

MR. RALEIGH: Fair enough, fair enough. We are talking about exclusionary --

MS. MORRIS: So we do not want to conflate those issues.

MR. RALEIGH: -- which is on the way to a permanent injunction. So this is a first step.

MS. MUNCK: And, actually, I think this is a really fascinating --

MR. RALEIGH: I actually have a point I would like to make.

MS. MUNCK: Okay. I did not want to cut you off. Yeah, sure.

MR. RALEIGH: They were not allowed exclusion because preventing some other chips coming to market that they felt would harm the public because prices would go up. But let me just say I would ask

the FTC to evaluate the following question. Yeah, that is a short-term price increase for a product perhaps or maybe not, maybe the prices are equivalent. But what is the public harm to the pressing invention because you cannot own an invention anymore?

There is a different kind of harm that occurs when you decide there is no such thing as property in the word "intellectual property." So I would ask you to look at that.

MS. ROSENN: Well, Suzanne, I actually want to go back to just a word that you mentioned, which is competition, right. What does a permanent injunction do? It shuts down the use of a particular patent and largely will shut down that company. It eliminates competition. So while we are talking about the value of intellectual property and how that will encourage invention, we also have to be very wary of, as I mentioned in my opening remarks, this balance between innovation and competition.

And I think the kinds of standards that Greg is putting forth are ones that shift the balance very heavily in favor of innovation and essentially create a marketplace where there can be no competition, where the simple, you know, assertion of a patent infringement suit can put another company out of

business.

And, you know, when I was at Kickstarter, we would always talk about how we want to compete on the basis of our product and to always just be sure that we are able to provide the best product that is out there and we want to compete against competitors, we want that competition to exist. And I think, unfortunately, the patent system is very frequently used as a way to simply ensure that there is no competition.

MS. MUNCK: Well, I am sure we all would like to -- I actually would love to extend this panel by two hours, but I do not have that authority and I know that there would be very angry people if I did that. So with that apology and with apologies to some of the questions that we have gotten that go to your question, Talal, of globalization -- I would love to find a way to keep this conversation going -- I would like to turn this over to you for your final statements. And if we go over by a minute or two, is that okay? Okay, thank you.

MS. MORRIS: So we talked about a lot of different issues and, hopefully, you guys were able to keep up. Some of the things in terms of closing remarks that I think would be helpful for what you

need to do as you go forward, I think there is -- despite our critique of many comments from Greg, there probably is some issue with serial IPR filing in some anomaly cases.

So an argument could be made that that is stifling competition and I think that the FTC could play a role and have some work with the PTO in terms of looking at some of the new -- the IPR practice and maybe some of the other new practices within the Patent Office and whether or not that is having a negative impact on competition or a negative impact on the marketplace in terms of allowing people to continue to either have some business rights or through their intellectual property rights, there being -- there are competition sort of harms there. That would be my suggestion for how to look at addressing that.

MS. MUNCK: Thank you.

MS. ROSENN: Yeah, and agreeing with Nicole, I actually completely agree. I think we are, at the core, probably trying to get at the same thing, which is a patent system that, like I said, balances these interests of innovation and competition in the best way possible.

I, by no means, think that the AIA is the

perfect solution, but what I would say is that it is -- the IPR process, the various Supreme Court decisions, are good first steps to get us there and I would encourage that FTC, together with the other government actors here, to continue to build on that, to investigate any issues that seem to have arisen with the IPR process, to talk with all of the actors here, whether they are small businesses and startups or inventors or, you know, pharmaceutical companies or research institutions, all of them and fully understanding and understanding that each is going to present their side as though it is the be-all and end-all, but the truth probably lies somewhere in between.

And I think through progressive improvements, we can hopefully end up at a system that really draws on the different parts of the government. It is really wonderful to see the FTC engage in this and not just say, you know, this is the job of the USPTO, but really see how we can identify each of the problems that exists in the patent and intellectual property system and kind of marshal resources together to address them.

MS. MUNCK: Thank you.

MR. RALEIGH: So we are at the end of a 15-

year cycle that started with a group of lawyers at a big tech company that have invented the term “patent troll” because their CEO said I want another 1 percent profit margin in my product and those silly royalties we are paying are degrading that profit margin. And after 15 years and hundreds and hundreds of millions of dollars spent influencing the debate, we arrived at where we are.

And we are now in a regime where we have influenced where we are making investments. Big inventions that require patent protections are far harder to justify an investment in today. And that flywheel is in the process of spinning down. And we will recognize at some point what we have done. This is not the first time in our economy this has happened.

Just two examples, this same exact debate, if you go back and look at history, happened around the turn of the century, 1900, around the electric motor. And the electric motor was there are too many patents, there is something akin to a patent troll. There is no room left for innovation, et cetera. It happened again when the television set came.

So we go through these cycles and when we punish patents, we find out later that we are not

investing in fundamental technology and we go through cycles, as we did in the '80s, where we returned invention rights and saw a boom in fundamental invention. So it is the ability to own an invention that allows small entities to take on giants. That is gone right now for some types of invention. And I hope that we can restore that.

And I want to just say one more thing. Other countries are recognizing our history and they are actually providing far greater invention protections than we do now. Just two examples, Germany and China, of all places. It is now easier to protect an invention in some cases in China and far easier in almost all cases in Germany than it is in the United States. And I would just ask the FTC to look at what is happening overseas, and that is the one way we do -- you know, you can protect your invention, but it is not in the United States; it is overseas.

MR. SHAMOON: So I will start by saying that I agree with the envelope of what Greg was saying. I think a lot of the points that have happened over the last few years are actually somehow impeding innovation in the United States and directly harming consumers -- in some cases directly harming consumers.

Although, you know, in terms of the specifics and how things are evolving, we have a system that has really been put together to patch up not only flaws in the way our people are using patents against each other, but also the way patents are being issued.

One of the issues is when you look at China as a case study, they have the ability to throw thousands of examiners onto the patent system to deal with the increase of filing and ownership of intellectual properties has become an arms race between countries and within countries. I mean, there is a race to generate more patents, which obviously affects the quality of patents coming out of the patent system because the examiner can only do so much in a day.

And there is -- dealing with that through the PTO process is really complex because you do not want to throw the baby out with the bath water, and it is a very, very slow-moving process. Now, this is all playing out in a world where there are more patents being filed, more startups being started, more innovation taking place per day not only in the United States, but across the planet.

And the chain reaction that takes place as a result of the embryonic development of an invention is

now playing out on the street, whether it is patent warfare between companies or eventually the way companies are using patents to stifle innovation. And it really does land on the FTC's doorstep. You folks get to look at the system from the outside in and filter the transformation that is taking place into the system to something that is more palatable for the market.

The other thing I would point out is there is -- we are sort of at the end of an innovation cycle where you have this percolation of ideas that have resulted in a few really, really, really large companies. You know, obviously, patents and the use of patents and the functioning of a monopoly or monopolies, they are very close cousins. And looking at the way people with substantial market share are using their weight in a market to impede innovators from moving to market and growing themselves and the use of patents within that drama I think is something that needs to be examined very, very closely.

And that ultimately is harming consumers if it plays out in the wrong way because you are literally killing ideas before they get to market or copying certain elements of an idea that serve your business and help you maintain -- I do not want to say

a monopoly, but effectively large market share position. And that is an area where I think there should be much more activity inspection.

MS. MUNCK: Excellent.

Well, thank you all very much for your very thoughtful contributions to today. I am serious, I wish I could keep you up here for another two hours, and I am sorry that I cannot. But please join me in thanking our panelists.

(Applause.)

(Panel concluded.)

COMPETITION POLICY AND COPYRIGHT LAW

MS. GILLEN: So welcome back. We are very excited to present the FTC's first ever panel on copyright issues, and we are grateful to have a distinguished group of panelists with us here today.

Just briefly introducing everyone going down the line, we have Eric Cady of the Independent Film & Television Alliance; Meredith Rose of Public Knowledge; Sean O'Connor of the University of Washington School of Law; Tyler Ochoa of the Santa Clara University School of Law; Keith Kupferschmid of the Copyright Alliance; and Peter Menell of the University of California, Berkeley School of Law.

So to kick things off, there have been a number of technical and legal developments over the past decade that have resulted in changes in how we think about copyright law and the role it plays in the promotion of innovation. I would like to hear from each of the panelists to start. Which developments do you think are the most significant and how have these changes impacted competition and innovation?

We will start with Eric.

MR. CADY: Sure. Well, thank you to the FTC staff for the opportunity to participate in this afternoon's panel to share the experience and

perspective of the independent film and television industry on competition policy and copyright law, both of which are very important to the Independent Film & Television Alliance.

IFTA represents more than 140 companies in 22 countries, the majority of which are small to medium-sized U.S.-based businesses which have produced many of the world's most prominent films, including 80 percent of the Academy Award winners for Best Picture, since our association was formed back in 1980.

In contrast to the major studios, independents are completely reliant on third-party distributors from around the world and copyright is the foundation for the financing and commercial exploitation of their films and television programming. Collectively, the independent sector accounts for over 70 percent of all films produced in the U.S. each year. As producers of much of the innovative content that propels our digital economy, IFTA and its members are strong supporters of measures that promote competition policy, ensure consumer protection, foster diversity in programming, and choice for consumers.

In terms of developments over the past decade, the marketplace has shifted to the internet

and digital rights are an increasingly important element of production financing as the online marketplace continues to develop and consumer demand evolves.

While the internet creates important opportunities for expanded distribution, new audiences, new revenue streams for independents, it also presents the biggest threat to our industry as online infringement is allowed to flourish without any effective means under current law to prevent or stop the introduction and rapid proliferation of infringing copies across the internet. The result is a distorted marketplace where rights-holders are forced to compete with pirated content often made available for free.

Copyright infringement damages independents well beyond lost revenues by impacting their basic ability to secure financing and distribution. Like I said, independents depend on third-party distributors, who prior to production contractually commit to pay a minimum guaranteed license fee in exchange for the exclusive right to distribute the finished product in their particular territory. Those exclusive license agreements are then collateralized to secure bank loans to complete the physical production.

Online theft, which is often suffered on a

massive commercial scale, severely threatens the balance of this creative and business framework, impacting the ability of these critical early investors to recoup their investment. More recently, the widespread emergence of streaming piracy, enabled by devices and add-on applications, is particularly damaging since they normalize piracy and bring illegal content into the living room through set-top boxes and other internet-connected devices, often which have sleek user-friendly interfaces.

While the major online platforms and service providers now routinely deploy enhanced antipiracy protections with respect to their own content and in the context of agreements with large content suppliers, they refuse to extend those enhanced services to smaller content providers. This discriminatory treatment creates a substantial barrier for small content suppliers seeking to use the internet to reach new audiences. The FTC should pay particular attention to the platforms and their discriminatory deployment of tools designed to protect content on their systems, as the minimum legislative requirements under the DMCA are no longer sufficient in today's high-speed digital environment.

For example, in the case of Google, IFTA

members report being offered only the option of continuing to send thousands of notice and takedowns with respect to infringing copies found on YouTube or the option to monetize those illegal copies by allowing YouTube to place advertising on those copies and sharing only a fraction of that revenue with the content provider, rather than preventing the upload and further illegal distribution of those files.

At the same time, the growth of online platforms has been prioritized as a matter of public policy overprotecting consumers from traffic and illicit content, which has generated profit for the platforms at the expense of legitimate rights-holders.

With this backdrop, there is a growing and serious concern in the U.S. and around the world about the lack of responsibility and accountability exercises by the major internet platforms toward the harmful and illegal activities taking place on their services. The ultimate result here is a toxic environment to conduct business and reach consumers.

IFTA has long been on the record with regard to the competitive challenges facing independents in the marketplace, whether arising from the integration of major broadcast, cable, and broadband companies, or today with the extraordinary growth of a handful of

online platforms, all of whom now produce and promote their own programming.

Independents have limited leverage in negotiating for access, good placement, marketing and revenue shares with these major conglomerates and, thus, access to independent programming is under threat. The FTC should focus more broadly on the role of these intermediaries, their placement of advertising and self-dealing with access to information, including consumer viewing behaviors.

In the European Union, the Commission has already launched an initial investigation as to the anticompetitive impact of Amazon using data it has obtained from third-party merchants on this platform to unfairly advantage its own business.

As further outlined in our written contents, IFTA joins the other representatives of the creative industries to call upon the Commission to exercise its broad investigative authority to examine how today's dominant internet platforms engage in practices that harm competition in the creation and distribution of copyrighted works, and in doing so, ultimately harms consumers. Thank you.

MS. GILLEN: Thank you.

Meredith?

MS. ROSE: Thank you. First, I want to say thank you to the staff of the FTC for organizing this and for taking a good, hard look at some of the issues in intellectual property and how those impact competition and also for, obviously, inviting PK to speak.

I generally wanted to speak about the issue of copyright software and some of the ways that that has had an effect on both issues of consumer confusion and issues of anticompetitive behavior. Generally, I think we have been both legally and socially caught a little bit flatfooted when it comes to the role of software and ownership and how those two things interact with one another. Rather than recognizing that software has the massive potential consequences in our current legal system and potentially deserves its own framework, we have sort of shoe-horned it into some combination of contract law and copyright law.

Contract law, which is notably predicated on the idea of there being a negotiation, which there is not in most software contracts, and copyright law, which is designed to respond to the specific pressures with traditional creative works, such as music, writing, art, et cetera, and is not particularly well-equipped to deal with something with the sort of

hybrid-created functional nature of software.

So there are kind of three points at which I think the rubber really meets the road on this and I would like to discuss them briefly. One is that, nowadays, we own very little as individuals. Generally, everything is -- an item is mine only to the extent that I do not do anything precluded by the terms and conditions that are attached to the software that runs the device. And as software has become embedded in more and more devices, this implicates more and more of the objects that we own, in scare quotes, in many cases.

This can include everything from your phone, which is a more obvious example, and your computer, down to your watch, potentially down to your refrigerator if you have a smart refrigerator, somewhat famously, if you follow the Copyright 1201 hearings, down to your tractor, which is often embedded with software. You only are allowed to use the item -- you do not technically own it in a lot of cases -- to the extent that you comply with the terms and conditions of the end user license agreement.

And the moment you stop complying with those terms and conditions, you are in a violation of contract, which means that any subsequent or even

current, at that point, use of the software constitutes software piracy that becomes a copyright violation. And so, essentially, that -- when you combine that with things like statutory damage potentialities, you have $150,000 for running a piece of software in a way that the manufacturer perhaps just does not like, for whatever reason, without necessarily having a sort of legal or policy justification underneath it. And this runs directly up against consumer understanding and expectations.

We have a very specific -- perhaps not specific, we have a very general, very deeply-rooted concept, both socially and legally, of what constitutes ownership and what I can do with something when I buy it. Very famously, Aaron Perzanowski and Chris Jay Hoofnagle did a study on the “buy now” button as made famous on Amazon, but they did a mockup at their own site, and the results of what people thought they were getting when they clicked a “buy now” button were pretty astounding.

Sixteen percent of participants thought they had the ability to resell the e-book that they were buying with a “buy now” button; 30 percent thought they had the ability to leave it to other people in their wills, which they did not; 40 percent believed

they had the right to lend or give it away, which they do not; and more than 80 percent thought that they owned the work and could keep it indefinitely and could use it on whatever device they chose, which is also not true.

The word “buy” has very different connotations than pay for access to a license the terms of which may change at any time, which is functionally what the “buy now” button is. Anyone who is on Twitter frequently enough as I am -- for one thing I am sorry -- to you probably saw a viral story about a gentleman who moved, I believe, from Australia to Canada and found himself locked out of all of his iTunes movie purchases. So this is kind of what we are dealing with.

There is this gapping in expectation for what a consumer comprehends as ownership and what software companies and platforms represent as ownership which in reality is sort of this complex licensing schema. This has really large implications for downstream commerce on top of everything else. If I do not own the car, if I really -- I am operating the software that is critical to running the car only under a license, what are my options for things like repair, replacement, modification or customization,

resale. Many times licenses prohibit or drastically restrict these common behaviors or artificially limit them to a few in-house or downstream-approved providers.

Apple is uniquely bad about this. I say this as someone who owns several Apple devices, but the ability to only get your Apple device repaired by an authorized Apple retailer is a problem and sufficiently stifles downstream commerce.

And attached to copyright, we have sort of copyright adjacent laws such as the anticircumvention provisions of Section 1201 of the Digital Millennium Copyright Act. And what these do for folks who are unfamiliar with them is 1201 creates a separate right of action for anyone who circumvents a technological protection measure that effectively controls access to a copyrighted work. You do not need to actually implicate the copyright in the underlying work at all. If you merely circumvent the digital lock on that work, that, in of it itself, is a separate violation.

This has been used somewhat famously in the example of John Deere tractors to control who is allowed to repair your tractor. It came up -- every three years, there is a triennial rulemaking hearing that the U.S. Copyright Office engages in where they

issue exemptions to this, and it is a laborious process to secure one, and you have to argue them de novo every three years.

But one of the examples that came up this year, in particular, which I wanted to flag was one in avionics, which is the computers on board airplanes. There is an FAA mandate that requires certain kinds of security compliance testing and certain results. I do not know what the exact schedule is, but the major manufacturers of onboard avionics computers have prohibited any independent parties from conducting any of the mandatory software testing that they are required to do by the FAA.

So to get these legally-mandated tests done, you need to go to the in-house security penetration testers who will only give you essentially a piece of paper that says, thumbs up, in effect, and you can pay extra to get access to the actual data that they were able to get to.

So we have plenty of examples of copyright and copyright adjacent law, such as 1201, controlling downstream commerce in a way that was not within the purview certainly of the original design, frankly, of these laws. And at the end of the day, this kind of just is evidence of this poor fit between modern

software and the sort of legal framework surrounding it and how we traditionally envision ownership, competition, resale, and issues like that.

MS. GILLEN: Thanks, Meredith.

Sean?

MR. O'CONNOR: Thanks. I want to thank the FTC staff for bringing me in for this.

I have been on many sides of this equation, the so-called innovator side, content creator side, and a really important starting point is always that creativity and innovation go hand in hand. They are not necessarily in tension with each other. So a lot of creators are innovators and innovators are creators.

So what we really want to be thinking about here is, how do we have robust markets and how do we have free and fair competition? I still use, as a starting point, copyright and other property rights, that when you have those, then people can enter into private market arrangements. So starting at that point, we need to look at some of the arrangements that are going on because we want to encourage this kind of innovation in business models, innovation in contracting, innovation in licensing, but we also want to make sure that those things are not becoming

anticompetitive and that they are not harming consumers.

I do want to scope my remarks here and say that I will not be covering data or actually software or industry-specific things like music just because those are big rabbit holes that we could spend a lot of time on, and maybe in the discussion we can go through that. I think the best use of my time here because of my particular background is making some distinctions and talking about how I view the world when helping clients and when doing research and looking at this whole innovation and creative nexus space.

So let's make a core distinction between business-to-consumer licenses and business-to-business licenses. That is standard kind of management school, business school speak, but it just means that you have some things -- like we used to call EULAs, end user license agreements, today you normally think of them as terms of service. It is all that stuff you click "I agree" on and you do not really read it. You know, we are not always sure what is going on with it, but those are effective.

Now, within those, there is often copyright licensing going on. Okay? Now, my remarks today are

mainly focused on that copyright part because that is our panel here. So if we look at the terms of service, the business-to-consumer, now we want to think of some of the issues there. In a moment, I will turn to the business-to-business and those are less obvious to the regular outside observer. It is the contracts behind the scenes that businesses do with each other.

So on business-to-consumer, I think the biggest question is, again, in copyright content, what is being done with my stuff. That is what we all want to know. We create stuff. Some of us do it as amateurs. Some of us do it as professionals. And then we enter into all these agreements online with a lot of the internet giant companies and it is fun and it is awesome that we can get our stuff distributed, but we do not always know how those pipelines are working and where everything is going.

We also know that a lot of consumers, particularly teenagers, young adults, are learning the hard way about that the internet is forever and some of their stuff once posted kind of stays up there. So we need to think about that a little bit.

Now, I am not against a lot of the licensing models going on and I also want to be careful to carve

out the notion of contracts of adhesion, take-it-or-leave-it contracts. That is what a lot of these end user license agreements and terms of service are, but there is nothing inherently wrong with those. But you do sometimes want to scrutinize them a little more carefully because of the fact you do not often have real negotiating going on and people are not deeply thinking about what is going on in the contract. So we want to look at it a little more carefully.

A lot of us have heard about that mandatory arbitration clauses can be difficult. So if I start having concerns about where my stuff is going and do I have a right to get my content taken back down, if I dispute it, I am stuck in arbitration which may not work for a lot of consumers. The notion of rolling contracts where when I do that first "I agree," I basically have kind of pre-agreed to changes that the other company will make.

Now, it is true that there is some -- when we teach contract law, we say consideration has to happen. But the consideration is simply that in exchange for you continuing to use the service, you then agree to our new terms. But a lot of times consumers do not even know that the terms have really changed. So we need to worry about that. We need to

worry about the creeping differences in a lot of these contracts so that what may have been reasonable expectations for how your things could be used a number of years ago may be different now because a lot of these companies are kind of pushing further and further on what can be done with the content. And, now, that is what we call “expect.” We expect it will turn up everywhere.

What do we do about that? Also in an era of disruption where the mantra is “ask forgiveness, not permission,” right? So let’s keep pushing the envelope and see what happens.

So on the business-to-consumer side, just a couple of recommendations that might be worth looking into. Following up on the notion of the right to be forgotten that is being explored a lot in the EU and other places, thinking about how to make it enforceable that people can get control of their content again and get it back out of these various systems when they want to and when they need to.

I think perhaps -- again, I am pro-licensing, but discourage some of these what I will call perpetual licenses with these vague assignment sublicensing provisions. This is going to feed into my business-to-business comments in just one moment.

You know you are giving your content to one place, one of these social media platforms, but then can it leak out to other places? Well, of course it can if you have agreed to allow them to sublicense it further and they then can sublicense it out to lots of third parties.

So we also need to be thinking about guidelines and standards for those kinds of licenses and also for thinking about enforceable public private distinctions. We know that a lot of folks think that they can have a private zone with just their friends where their content is, but then sometimes it seems like that becomes public and people are often surprised about that.

Okay, shifting over business-to-business now, we do not really know a lot about what is going on with the contracts among a lot of the leading internet -- I will call them sort of the internet giants and a lot of the whole ecosystem of other companies that rely on them. So we know what I will call the public facing firms, the internet giants, we know that they have the business-to-consumer licenses in place. But in this behind the scenes we know somehow it is linked back there to advertising and search engine optimization and data mining, that thing

where when you search for something at one point and then for the next week or so -- I was looking for guitars recently and then every website I go to, even on my phone, little ads are for guitars, you know, and it is kind of embarrassing.

So how do those contracts work? See, they have to be contracts. There is something going on behind them that allows that stuff to happen. So I think that what we want to do as well is look at is there any potential unfair leveraging of the companies that have the largest portfolios of the content saying, look, if you want access to any of this content, then you need to then sign these business-to-business deals with us.

And a final point, because I am really running low on time here, is that as these networks of licenses are being put out there and created, are we also displacing some of the other regimes for open kind of content distribution, like creative comments, which people could have some reasonable expectations about how their things were being distributed now with essentially kind of private networks of sets of rights and what are our reasonable expectations around that.

So I think that looking at the behind the scenes business-to-business licenses are as important

as looking at the business-to-consumer licenses. And I think that the FTC using a lot of its longstanding practice of issuing guidelines on licensing and particularly looking at distinguishing horizontal and vertical licensing would be a really good use of time.

Thank you.

MS. GILLEN: Thank you.

We are also joined by Peter Jaszi of the American University Washington College of Law.

We have been talking about significant developments and copyright law over the past several years and particularly those that may impact competition and innovation, and which do you think are the most significant?

MR. JASZI: Thank you.

So one could describe the relationship between copyright law and competition policy over the course of my professional career as 50 years of solitude with two discourses occupying essentially the same policy space but resolutely refusing to acknowledge one another’s existence.

As any former students of mine in the house will know, I have been predicting for many of those 50 years that there would have to be an eventual convergence, if not a collision, between these two

lines of thinking. So I find the fact of this hearing and the fact that I was invited to participate in it very gratifying indeed.

I think I will begin by stating, rather than belaboring, some four propositions that seem self-evident to me, although there may be room to discuss them later on. First, that the copyright monopoly in nonrivalrous information goods is inherently anticompetitive by both design and definition.

The second is that the commonly-held assumption that copyright has some incentive effect on innovation, although not inherently implausible, is neither demonstrated or perhaps demonstrable. On the other hand, we can show that follow-on creativity and innovation necessarily does require reasonable lawful access to preexisting content or works in copyright jargon. And we can also demonstrate that, as an historical matter, many of most of the significant bursts of copyright-related innovation over time and space, although particularly in the U.S., have been closely associated with limited copyright protection, either as a formal or a functional matter for the information goods in question.

In other words, although both the individual consumer and the general innovation climate benefit,

we believe, from right-sized copyright protection, neither is likely to thrive in an environment of hyperprotection.

From that perspective, I want to make four points about copyright doctrine at this moment of convergence, and all relate to what I think are, in one way or another, urgent items, action items, or as the case may be, inaction items. The first two are about the importance of maintaining or nurturing certain existing procompetitive features of copyright law, while the second personal pair relates to some features of that law that may now require reconsideration.

First, the fair use doctrine, the general safety valve of the U.S. copyright system, is more important today than ever before. Although it dates back to at least 1841 in one form or another, fair use has come into its own only really in the post-war period and especially in the last 25 years. Under current Section 107, the doctrine is in a pretty good place now, both textually and jurisprudentially.

Later on, I would be happy, if anyone were curious to multiple examples of how fair use promotes competition of all kinds. But for now I will simply say that in years to come, the doctrine must be

preserved from both its enemies and its friends. Its enemies would like to water it down and at least some of its friends would like to enhance its short-term clarity at the expense of its longer-term flexibility. Both temptations should be resisted.

Another existing doctrine that stands in a very different place is copyright misuse. This is, as yet, at least an underrealized, underutilized doctrine. It is of relatively recent vintage, but it has enormous potential. It has been a wallflower at the ball of copyright for a while, but I think it may be about to come into its own.

The doctrine, which could serve, and occasionally has served, to port competition policy considerations into the heart of copyright litigation as memorably, for example, in the Practice Management Information Corporation vs. AMA case, is one that is worth watching and especially for academics who care about the -- I should say judges and academics who care about the competition copyright nexus to promote.

Now, let me turn very briefly to two copyright doctrines that I think in this moment have gone far and off the rails to require some urgent reconsideration if this procompetitive right-sizing of

doctrine is to be achieved.

One is, of course, the rules relating to statutory damages, which is presently constituted, consistently operate to discourage procompetitive good faith risk-taking by innovators. Over the last half century, the relevant provisions of Chapter 5 of Title 17 have lost all semblance of a nexus with their original purpose, which was to fairly compensate successful plaintiffs in cases where actual damages were especially difficult to prove.

Today, they serve explicitly punitive and deterrent functions and they are deployed accordingly by rights-holders not just in court, but also in all kinds of prelitigation skirmishing. The result, of course, is that small innovators are chilled into making risk-averse choices to the general detriment of all. Statutory damages may have a continuing role to play in cases involving out-and-out commercial piracy, but they have grown out of all proportion to their true utility and urgently need a good pruning.

Finally, let me note that before it is too late, and it may be too late very soon, some of our basic assumptions about authorship and initial ownership of copyright could use a stem-to-stern reconsideration. We know that in years and decades to

come, more and more copyrightable works from databases to computer programs to art will be produced by effectively autonomous intelligent agents which themselves in turn will, in many cases, be the products of yet other AIs.

Right now, we are not up to the question of how rights of ownership under copyright in such productions will be or should be assigned. The best guidance we have is that perhaps they might be allocated to the person or the company that was the first mover, so to speak, in setting the train of machine authorship in motion. But that is, for many reasons, a very unsatisfactory solution.

The most important of those reasons being that it will, of course, or the application of such a rule will, of course, over time have the effect of creating greater and greater consolidation and concentration of ownership where information products are concerned. That is an outcome about which considerations of both competition policy and broader social policy suggest extreme caution.

Thank you.

MS. GILLEN: Thank you.

Tyler?

MR. OCHOA: So I think my comments will echo

many of the theme that we have heard on the panel here, but hopefully with a bit of a different spin in a couple of areas.

So the two things that I wanted to address were sort of abusive end user license agreements and artificial intelligence. With regard to the end user license agreements, we see abuse in both directions. We see abuse directed towards copyright owners in some instances and we see abuse by copyright owners in some instances.

So Sean talked about terms and conditions in end user license agreements that automatically assign ownership of a copyrighted work to the social media platform or have such a broad license that it essentially renders any type of commercial use available to that platform. You see this in lots of areas where people post things to social media or post photographs, maybe they will enter a contest for -- a photography contest for the best type of picture you can have of wildlife and the terms and conditions specify that the user can do absolutely anything they want to do with that.

So that is taking advantage of copyright owners who want to see their work reach a wider audience, but then the terms and conditions allow that

work to be used for commercial purposes without any further consideration. Definitely people should know what it is that they are signing up for when they post things. People should have the ability to post things and have them disseminated without giving away all of their rights or most of their rights.

On the flip side of this is abuse of end user license agreements by copyright owners. And copyright law is designed very differently from patent law. Patent law gives the patent owner an exclusive right to use the patented invention, although even there, under the first sale doctrine or the doctrine of exhaustion, once you have sold the machine embodying a patented invention then you can continue to -- then the buyer can use it in any way that they see fit.

But with copyright law there is not even an exclusive right to use a copyrighted work. The exclusive rights of reproduction and distribution exist. The exclusive right of public performance and public display exist. But there is no exclusive right of private performance. One is able to read a copyrighted work as many times as one wants. One is able to listen to a copyrighted work as many times as one wants. It is specifically designed not to control

individual behavior.

And, yet, we see copyright owners using end user license agreements terms and conditions specifically to give themselves a right of private performance specifically to control user behavior so that persistent access controls, you cannot necessarily listen to or watch this as many times, but only X number of times for a particular purpose. You have a copy that resides permanently on your hard drive, but you are only going to be able to use that for the next five years and then it is going to go away or you have to enter some sort of download code in order to be able to use this copy further. And we see that both with regard to traditional media, digital copies of traditional media, and, in particular, with regard to software.

So that you own a copy of software, but the software company alleges that you are the only one who can use that and you cannot even lend your laptop to somebody else and let them use it because they do not have a license from the software owner.

I might add that even the term “license” itself is a bit of a stranger to basic copyright doctrine, which talks in terms of sale or other transfer of ownership or rental lease or lending.

Those are the only two options under the public distribution right, sale or other transfer of ownership or rental lease or lending.

And what you have is software companies and owners of digital content contending while it is not really a sale, you did not really buy something, so you do not own it, but they are also not claiming that it is a rental lease or lending because they know if they did that that consumers would rebel against the notion. Instead, they use the ambiguous term "license" as if they had the right to control of anything you did with a copy that you owned permanently. So I think seeing that sale is defined in a particular way so that these abuses could be lessened would be very helpful.

The second area of concern I think is artificial intelligence and Peter mentioned one concern which is we are going to see some type of artificial intelligence or machine learning generating copyrighted works. I want to look at the other side of that for a minute, which is how artificial intelligences are trained because they have to be trained using very large data sets. And data sets, by definition, are often going to be copyrighted works.

If you are training using large areas of

text, you need lots of textual works, which are subject to copyright. If you are training using a large data set of photographs, the photographs are subject to copyright. So in order to do research in AI, in order to train in artificial intelligence, one needs access to large data sets.

Well, where are we getting those data sets from? The only people who have large data sets are typically large platform owners, large content providers. One of the terms and conditions in which those data sets will be made available to researchers, one of the terms and decisions on which those data sets would be made available to developers of artificial intelligence, will they be licensed on a nondiscriminatory basis and so forth? So I think those are a set of issues that are worth considering.

And related to that we have the problem of bias in the data sets. Because we see evidence that the data sets you use influences how machine learning learns. So for example, when you are trained on a data set of photographs of white people, facial recognition works very well when you are recognizing the faces of white people and works much more poorly when trying to recognize the faces of people with darker skin because the artificial intelligence was

not trained on that data set.

So what can we do to assure that the data sets that are being used are nondiscriminatory, are representative, and are not building additional biases into the system. So those I think are issues that could be profitably looked at.

Thank you.

MS. GILLEN: Thank you.

Keith?

MR. KUPFERSCHMID: I want to thank the FTC for inviting me to speak here today on the panel on competition policy and copyright law. Thank you all for attending and everyone online.

My name is Keith Kupferschmid. I am the CEO of the Copyright Alliance, a nonprofit, nonpartisan organization dedicated to advocating policies that promote and preserve the value of copyright. We represent the copyright interests of more than 1.8 million individual creators. Those are creators, like artists and authors, performers and photographers, songwriters, software coders, and numerous other individual creators who make a living through their creativity. In fact, the foundation of copyright is built on the creativity and ingenuity of these people.

The Copyright Alliance also represents the

copyright interests of over 13,000 organizations across a spectrum of disciplines. When most people think of a copyright, they may think of the entertainment companies in associations that we represent, but copyright protection is much -- is crucial to so many more organizations ranging from book, magazine, and software, and newspaper publishers to organizations that you might not think of as relying on copyright law, like the NBA or the National Association of Realtors or the National Fire Protection Association.

There is one thing that unites all of these individuals and organizations that are otherwise very, very different, and that one thing that unites them is their reliance on copyright law. It is copyright law that protects the fruits of their creativity. It is copyright that protects their basic freedoms, their freedom of expression, their freedom to pursue a livelihood and a career based on their creativity and innovation. It is copyright that protects, that safeguards their rights afforded them under the Constitution. It is copyright that propagates America's culture around the globe. It is copyright that promotes competition and innovation and it is copyright that is crucial to the success of the U.S.

economy as evidence by the fact that the core copyright industries add $1.2 trillion to the U.S. GDP and employ nearly 5.5 million people.

Now, I would like to highlight one of those core industries, the software industry, because many people may not understand just how reliant the software industry is on copyright protection. No other country can boast a software industry as vibrant as the United States. And that is in large part due to our strong framework of copyright protection.

Because most software is created through collaboration, copyright is often the only viable form of protection, especially where patent protection is uncertain following the Alice case. If copyright for software is diminished by overly-broad applications of fair use or by denial of protection, the software industry will be forced to retrench to a closed model no longer sharing code and instead relying on proprietary contracts to keep code protected. That is a step in the wrong direction.

The economic premise of copyright is that protecting priority rights in creative works will promote innovation. This premise is reflected by the Constitution and supported by both the FTC and the DOJ in their report entitled, Antitrust guidelines for the

licensing of intellectual property.

Somewhat contrary to what Peter Jaszi commented earlier, in that report the FTC and DOJ confirm that the ability to license content can have procompetitive effects for both the copyright holder and the licensee by increasing the value or utility of the copyrighted content and, thereby, encouraging the copyright holders investment in it.

Now, over the past decade, the creative community has embraced the internet and the growing capabilities of technology to make their copyrighted works more widely available and more easily accessible to the public. The result is that consumers today have a wealth of ways to access and enjoy all sorts of copyrighted works and creators have many more platforms to reach their audiences and customers.

All sectors that rely on copyright law have seen and continue to see great transformations due to shifting legal developments, evolving business practices, and new technologies. We have seen business models shift from download to streaming, from access on one device to many devices, from ownership of physical goods like DVD to access to copyrighted works in digital formats like on demand and subscriptions and many more.

Throughout these transformations, the one constant has been the importance of robust and meaningful copyright protections. Importantly, this includes the protections afforded to technological protection measures, or TPMs, which allow the creative industries to offer users and audiences these and other new experiences that otherwise would not be possible.

Despite the success of TPMs, piracy remains a significant problem. For every technological advance that makes it easier for creators to reach consumers, there are bad actors one step behind that exploit these new capabilities through new forms of piracy. Piracy is the antithesis of competition. It threatens competition by allowing others to exploit works without compensating their creators, reducing the commercial value of the creator's work, and weakening incentives to invest to the consumer's detriment.

While online piracy remains a persistent problem, it is especially harmful to small creators. PPA reports that 70 percent of all professional photographers have been victimized by copyright infringement multiple time in the past five years. Because the federal courts have exclusive jurisdiction

over copyright claims and federal litigation is so expensive and so complex, most individual creators and small businesses and micro businesses simply cannot afford to enforce their rights.

The income they lose from piracy may seem insignificant to some, but to them it is the difference between staying in business or being able to travel to a location where they could create their next photo or their next book. For this reason, the Copyright Alliance is a strong supporter of legislation to create a voluntary small claims tribunal within the U.S. Copyright Office.

While online piracy continues to be a problem, new threats such as illicit set-top boxes and stream-ripping services have emerged to contribute to the environment of lawlessness that is hindering competition and innovation. Stream-ripping is a process by which everyday listeners can rip a file from a streaming platform and convert it into a download file. Apps that facilitate this process are rapidly growing in popularity.

The difficulty in combating this problem is that there are no infringing links or content to pinpoint and eliminate. Instead stream-ripping software targets legitimate streams and creates

illegal reproductions.

Another emerging threat is illicit streaming devices or ISDs. The most prevalent ISD is the Kodi box, which is a legitimate media player that is easily configured to access illegal streams of copyrighted works that are available online. By pirating these works, ISDs harm not only copyright owners, but also impair competition by harming legitimate streaming services such as Netflix and Hulu, that are licensed to provide content and increasingly produce their own works. They also harm the many creative professionals who contribute to these entertainment products by decreasing the revenue pie that serves to stimulate further creativity.

As noted in an FTC blog post, many of these ISDs are often rife with hidden malware that can bombard users with ads, that can take over their computers, and that can steal their personal information. Importantly, these ISD distributors also often advertise their products as legitimate while at the same time promoting their illegal usage. This is one area where the FTC should be able to help.

The FTC has extensive powers under Section 5 of the FTC Act to police and pursue instances of false and deceptive advertising and promotional schemes. To

the extent these distributors of ISDs or stream-ripping software advertise their products as 100 percent lawful or inflict consumers with damaging malware, the FTC should consider pursuing them for misleading and impairing customers and harming competition. Thank you very much.

MS. GILLEN: Thank you.

Peter?

MR. MENELL: Good afternoon, everyone.

I wanted to widen the lens to think about the problems we will be facing in the coming decades. It has taken a while for copyright to hit the FTC's agenda, but I think it is going to be a recurrent issue and trying to think through some of the more profound changes that have been going on in the content ecosystems.

So I want to go back to the founding of the country and really the roots of our copyright system. This notion that we can, through markets, promote creativity; that by creating a system of exclusive rights, our government can mimic the way some other markets work in order to motivate people to create works. And I would say for much of the early history of this country, that model worked. Publishing began through the copyright system, was very much fed by the

copyright system, and to this day, we still see the copyright system functioning in that way.

But Elizabeth asked us at the beginning what changes over the last decade or two have changed the way in which these ecosystems function? There has been a rather remarkable shift that I think has happened without many of us realizing it. We can think about many content companies operating in the way that Eric's clients do or Keith's clients do or there are individual creators who create things.

But, now, we are also in a world in which there are companies that are operating in the content space, but their modus operandi is not to sell works to consumers, not to use the copyright system in the way that it was understood. In fact, the most successful companies or some of the most successful companies today are companies that have developed social media and other platforms in which copyright plays a central role, but does not operate in the typical way.

Now, in order to fully explain the story, we have to go back maybe a century to the birth of the broadcasting industries. And in order for that industry to take off, we needed advertising. Advertising was a way to enable companies to build

broadcasting. Since there was no way to create turnstiles or other ways of paying, advertising came in and for half a century or more it was an essential part of broadcasting, which is also very central to the media and the copyright industries.

But with social media we have seen a shift and a lot of the use of the social media platform is actually not to serve in this primary function, but really as a data collection system so as to improve ad targeting. And this ad targeting is really a major shift in the way the copyright and the larger ecosystem functions.

So how would I highlight this shift? So it is not as though internet companies in the content space are operating in the same way. Netflix, for example, harvests data to help them identify what would be good content projects to develop. And I think that, in some ways, harkens back to the way copyright has always been used. But when you think about Facebook or perhaps YouTube, that a lot of what is going on there is the content is being pushed out really to monitor user behavior. So it fits into some of the other themes we have talked about, about how contracts and all kinds of new licensing models are playing into this new world.

And so I think it directly connects to the FTC in the sense that we are now really seeing how consumer protection is really intersecting with the copyright system and that a lot of these phenomena -- and I am on the fence about what to do or even what to think about these things -- but it is a dramatic shift in the way in which many companies operate. Their goal is to use copyright as really a data collection mechanism, and then they work with data brokers and other companies to better target ads, and then we get into what you might call the unintended or side effects of some of those.

And I will say the last election cycle is one of the side effects that we found that the same tools that were developed for ad targeting were harnessed to very much influence democracy. That is something that I would say is of great concern. I know it is a very sensitive topic especially here in Washington, but it is one that we are confronted with because now we have built tools that allow very effective targeting of ads and the whole ad industry is not so much oriented towards providing information so much as persuading us, manipulating us. So I think that these issues are now in play in a big way.

The other thing I would say -- and this is

perhaps more of a paternalistic view that I have -- but I am brought back to the work of Thorstein Veblen in thinking about how conspicuous consumption is fed in our society, and I think we are now living through Veblen on steroids, that we have created through social media, especially towards vulnerable communities. We have created ways in which we are vastly reshaping the way in which people grow up in our country and the way in which they experience both content and advertising as kind of served up together.

The other place we see is this is with embedded advertising. That, in some ways, as a result of commercial skipping, we have now created a content industry that is very much focused on bringing advertising directly into the products we create. So I am really putting this out as food for thought for trying to think about the very large issues.

I will just briefly comment and maybe we will come back to some of the other issues. There is another interesting competition issue here that one of the big problems we faced with the internet was the illegal downloading. I agree with Keith and Eric that this was a big concern. But we partially solved that problem through competition.

As Netflix was able to create and other companies, HBO GO, Hulu created very effective streaming systems, we saw a lot of people leave the illegal towards the legal, but we are now coming into another phase of this. And that is because we have so much fragmentation of streaming that we are seeing, yet again, a rise in illegal content because people do not want to subscribe to eight or ten services in order to get everything they want.

So I think that is an interesting competition issue that is relevant and, in some ways, it is within the control of the industries, but will require us to rethink antitrust law because we, in some ways, want to create, as Spotify is doing in the music area, we want to create an easy way for people to gain access to a lot of content, but as we also want to have competition, that means when Disney enters the market, as they will in the coming year, we are going to see a tremendous amount of fragmentation which will, again, stoke the fuel of the piracy concerns.

Last but not least, and I cannot resist, partly because Keith somewhat raised this issue, this idea that software is protected by copyright is a very, I think, easily distorted issue. And the

Oracle-Google litigation, I think, highlights an important reason why we ought to keep on the FTC agenda competition in the software industry. Functional specifications are not the kinds of things that copyright protects. And the courts had largely resolved that issue and, now, because of the Federal Circuit's misinterpretation of Ninth Circuit law, we are now having to revisit that issue. And I think it is unfortunate.

And the other problem we have is that the Federal Circuit does not sit as an independent circuit. It was supposed to apply Ninth Circuit law, and it did not. And, now, perhaps the Supreme Court will take the case. I am not sure what they will do with it. But whether or not they do, I think that it would be -- especially if the Federal Circuit law remains the same, I think it is a legislative issue now; it is a policy issue. And we should definitely keep that issue on the front burner because platform competition and interoperability and functional specifications are essential to the kind of valuable competition that supports.

So I am a fan of copyright protection for software, but not for functional specifications. I think it has to be very narrow. It has to be limited

to preventing piracy. But once we get into how a machine works, we are in the patent realm, and that creates other issues that we talked about this morning, but I am willing to say it is better fought there than in copyright. Thank you.

MS. GILLEN: Thank you.

And I am sure you all have questions for each other. I know there have been a lot of different issues raised. But I just want to kick things off with a question about end user license agreements since I think a few of you touched on that issue in your remarks, particularly the gap between consumer knowledge and the actual terms of a particular agreement.

My question is, what can the FTC do, what can we look for, what further research can be done, to better identify those types of arrangements that may fall into the anticompetitive realm?

MS. ROSE: I can speak sort of very briefly to it. Like I mentioned in my opening statements, there has been some research done on this. And it has followed -- Perzanowski did the research and he actually -- the second part of the study, which I did not get to mention, is that they proposed a kind of alternative to a “buy now” button which had a labeling

system which clearly -- it had a thumbs up and a thumbs down. Next to the thumbs up, it said, here are things you can do with this and here are things you cannot do with this. And they found that that had a remarkable effect in increasing consumer comprehension of what they were doing.

The scholarship around this thus far has mostly focused on just the fact that the phrase “buy” or “buy now” tends to create a high degree of consumer confusion. So I think they are -- you know, having not spent nearly as much time on this as some other folks, I think that there is probably some answers in labeling requirements to some extent. It is certainly a place to look.

MR. O’CONNOR: So I would say there is a tension, and the tension when you are practicing law is you have your clients want you to do a really simple agreement, simple license, kind of like the here is what you get, here is what you do not get. And then every time you simplify, you kind of lose some of the nuances of the exact legally enforceable language. So that is a bit of a problem.

I think the way you can kind of thread between those, though, is getting some standard adopted language as to what these kinds of clauses

mean so that you know that you can do that sort of summary of here is the bullet points. But, again, a lot of us who are writing these licenses are very concerned that if consumers only see the simplified five bullet points, they are missing a lot of nuances of what is really going on behind that license.

So having something that is kind of approved, maybe FTC approved, as to what certain clauses mean and if everyone can agree, okay, so this gives me that right, this clause gives me that right, this clause does this, this clause does that.

MS. ROSE: Yeah, I would sort of push back on that and say that the amount of information that they are getting off a thumbs up/thumbs down button is still more than they are getting now because no one is reading the license agreements. So you are moving from -- you know, you are moving maybe only to 10 out of 100 points, but you are moving from zero. So it is a marginal, albeit, perhaps not a sufficient step up.

The other thing -- and I say this as a video gamer, there are a lot of cases in which violation of terms of service have led to essentially copyright claims for things that are fundamentally not copyright issues, but because the behavior revoked the license agreement then it became an unlicensed use of the

software for things that are essentially just boiled down to developer preferences about user behavior.

I think that there might be an answer in looking for ways to ensure that the copyright aspect of them -- of these end user license agreements are decoupled from other behavioral preferences that are expressed by the copyright holder and licensee so that we do not have a situation where, you know, if I found an exploit in my game of Fortnight that lets me be a great sniper, that using that exploit does not necessarily land me or my daughter, who is probably more likely to do this, on the hook for $150,000 of statutory damages.

MR. O'CONNOR: So my point, though, is that you are not going to get lawyers to stop doing the full license agreement. I mean, FTC would have to do something really heavy-handed like, say, oh, private people, you cannot do your own licenses anymore. And instead what we have is if you have some bullet points that do not accurately reflect what the legal language is, you can do more damage as well because it is out of sync now.

MR. OCHOA: So I think there has been a very good model of what Sean maybe has in mind through Creative Commons where Creative Commons has end user

license agreements in legal language, but has summarized and provides a suite of options that consumers can do for -- you know, you can do this for commercial purposes or noncommercial purposes, with or without attribution and so forth.

And by far, the most popular of the Creative Commons license is the noncommercial with attribution license. Right? Because consumers want attribution, do not necessarily want money, but sometimes they do -- you know, if there is going to be a commercial use of their work, they would like to be able to share in that, so the notion that approved terms and conditions that provide a suite of options to consumers and also perhaps prohibiting some of the more onerous terms. There really should not be automatic assignment of your entire copyright in a contract of adhesion, I do not think. Right? That is just not something that should be permitted. That should be only allowed on perhaps on an individually negotiated basis.

MR. KUPFERSCHMID: If I could add something. First of all, I want to associate my comments with Sean. I think he identified very clearly, very well the sort of push and pull between the lawyers and trying to get all the terms in there and trying to make the agreements as simple as possible.

I think, in the Creative Commons example, you still even see litigation in the Creative Commons area with license. So there still are certainly issues with people still not understanding what they can and cannot do even with regard to those licenses. So I do not think they are that unique in that regard.

I mean, if we are talking about consumer education, that is something we are all for, that we want consumers to understand what they are buying, what they are licensing, how they can use or not use the products. If we are talking about sort of mandatory contractual provisions or limitations, I think we are getting into a very different territory. So, you know, thumbs up on -- if we are using the thumbs up analogy, thumbs up on education. But I think beyond that, I think we are going a little too far.

MR. JASZI: I would suggest returning to the original question that although I think the work on the disparity between consumer perceptions and the realities of the licenses to which they agree is enormously useful. There may also be room for some expert study of the question of to what extent and in what ways end user licenses in general constrict or

undermine or revise the classic copyright assumptions about consumer freedom.

Copyright, for most of its existence, has operated on a set of assumptions about what consumers can do not only with physical objects they acquire, but also with the content of those objects. Some of those assumptions are memorialized in doctrines like the first sale doctrine or the fair use doctrine. Others are a little more inchoate, I think, but nevertheless important.

There is room for someone, whether it is an FTC study or not, I am unsure, I think to look carefully and, if I may say, scientifically at the way in which the terms and conditions of the full range of available EULAs stack up against those classical assumptions about consumer freedom.

Again, in the promising world of new business models, as it has been presented today, it may well be that overall as a society, we want to reimagine the position of the consumer and copyright law to be a much more passive and a much more restricted and a much less creative one than has historically been the case. But we ought to know what we are doing and we ought to do it self-consciously if it is going to occur.

MR. KUPFERSCHMID: If I could just add to one thing Peter just said. I think we have to be careful, though, with -- which you mentioned sort of historically and sort of classic set of assumptions about consumers, what they can do. I think the one thing we have learned over the past decade, if not longer, so is that what consumers want to do is changing rapidly. And that is why the copyright industries, the creative industries have been transforming their business models over time, like I mentioned before, moving from a download model to a streaming model, moving from a model which allows access from just one device to many devices or in many different locations.

And so, that sort of assumption is what consumers -- that did not exist 20, 30 years ago, whatever, but now it does. And so I know the creative industries are responding to that. So I think we need to be careful about relying on too much about what consumers historically maybe want to -- and recognize that there is -- there is also what they are looking for today, which is oftentimes very different.

MR. JASZI: By the same token, however, it is clear that consumers coming up are being rapidly socialized into a system in which they lack the same

expectations about consumer freedom that previous generations had. In other words, it is a chicken/egg problem to some extent. Consumers will learn to be satisfied with what providers provide, and so I do not think that any more than classical assumptions about how copyright promotes markets are irrelevant today. I do not think that classical or historical understandings about the idea of consumer freedom are irrelevant either.

MR. O'CONNOR: Licensing has been around for quite a while, though, and I think we want to be careful about that. For a long time, musical scores to orchestras have been under what I always called the lease license, a physical copy is sort of leased and then you get a license to do some performances. So I do want to be a little careful about what we say are some of the classical senses of what the expectations are. There is a richer licensing history going back over time.

MS. ROSE: And, realistically, I think we also need to cabin all these discussions by saying the business-to-business and business-to-consumer models are very different. Presuming even in the case of a relatively small business, perhaps in cases of all but the smallest of businesses, you are going to have some

sort of more or less comparable legal involvement on both sides.

I can certainly cabin my comments to the situation of an uninformed nonexpert consumer. I sort of use my parents as the meter stick. Sorry, mom and dad. You know, they are boomers. They grew up with certain expectations about the things that they use and what they can do with them. And that is kind of model that I am operating off of.

MR. MENELL: I would just add that there are players in this mix that we do not even know much about. There is a whole sector of data brokers and, believe me, I am trying to figure that sector out. And when Facebook gets information through your use of their site and they say, we are not doing it, we are not going to use it in certain ways, putting aside the data breach and other problems that they have had, I think there is a whole layer of the economy that is not well understood, that is pretty well capitalized, that is sort of operating -- and I do not use the word "troll" lightly, but they are able to connect a lot more dots in our personal dossiers than we may realize. And it is obviously hitting much bigger sort of political and democracy-related issues.

But the FTC is potentially a place to look

at that issue, because it has to do with competition in some of the most important markets, and whatever agreement I have with Facebook, I do not know their agreements with the further deeper state of data brokering. So that is going to connect to Madison Avenue and the whole advertising world.

And I just think that we ought to know as a society -- we ought to have transparency about all of these different layers, and I think the FTC is one of the few places that can do that.

MR. O'CONNOR: I think it is the B2B issue again. And what is critically important is to look at some exemplars of it. When you have Facebook or Google, you can log in to other sites. And then there was a hack of that and that was problematic. But people were focused on, oh, my other sites may have been compromised. But to me as a transactional lawyer, I am kind of curious, what are all those deals -- and this is what Peter is talking about -- going on behind the scenes?

I have some questions about whether there is some leveraging of one asset class off another. So one purveyor of social media that has a lot of content can say, well, you get access to this content, third-party data company out there, if you then give

me access to something you have. We do some exclusive deals behind the scenes. So that was what I was trying to map again. And FTC is perfectly situated for this, looking at exclusive versus nonexclusive licenses, looking at the classical horizontal versus vertical. Are you tying up markets? Are you tying one sort of commoditized thing to another?

MR. OCHOA: So I would like to push back on the notion that consumers are behind the transition from downloading to streaming. I think content providers are largely behind the transition from download to streaming, because they want to get paid on a regular basis every month, rather than giving you something that you can own forever.

And I think consumers accept streaming on the basic notion, well, I will be able to access this forever, and then they get really upset when Netflix no longer has access to certain types of works that they previously had been able to have access to. So, you know, I mean, and it goes back to the notion of what does buying something mean? But, basically, I think we have a consumer preference for, you know, I would like to be able to have this forever, and we see notions of ownership just disappearing in a purely streaming society.

MS. GILLEN: So I think this is a good time to jump in with our next question, because you have all talked about a lot of sort of the tools that the FTC has and I think much like you said that this is one of the first conversations of antitrust and copyright, this is the first conversation I have had when I have been able to talk about our data broker study and our IP licensing guidelines.

I think that one of the things that I am thinking about as you guys are talking is what are our tools? So in the licensing space, we do not traditionally say, here is your license. We say, you parties should engage in your licensing behavior, and here is what you can do to be within the antitrust guidelines. So with that sort of background in mind, I am curious to hear what future solutions you think that the FTC or other government actors can engage in to promote innovation in the copyright space.

And we have talked about some of the FTC's tools in looking at our enforcement work, our policy work, and our research opportunities. So are there specific examples of enforcement actions that the FTC should look out for? Do you have suggestions with respect to legislative change?

And, Eric, maybe I will start with you.

MR. CADY: Sure. Thank you.

And just in terms of continuing to innovate from IFTA's perspective, legislative solutions are required to address the problems associated with copyright infringement, especially as it becomes more sophisticated, particularly online. Our enforcement strategies and laws must adapt accordingly.

To ensure that copyright law keeps pace with the technological advances, IFTA offers two key legislative changes. The first, to classify large-scale unauthorized streaming as a felony to effectively deter online infringement and provide an important enforcement tool to pursue those who do the most damage to independents and their authorized distributors.

So under the current law, streaming and downloading are the exclusive rights of the copyright owner. But they are treated differently in terms of the criminal penalties for the violation of those rights. A violation of the public performance right, streaming, can only be charged as a misdemeanor, whereas an unauthorized downloading, a violation of the exclusive right to reproduce and distribute, may be punished as a felony. This is particularly important in today's marketplace where, as we have

learned, streaming is becoming the primary model for how consumers consume audio/visual programming.

Second, IFTA would recommend updating the 1998 DMCA to provide for notice, takedown, and staydown to incentivize all stakeholders through safe harbor to effectively and rapidly deal with the damage of online infringement, especially in the most egregious cases of prerelease theft where there can be no legitimate copies available online.

Today's now common technology is employed by major platforms where they can identify a specific digital file after a copyright owner provides notice of a digitally watermarked or fingerprinted file. They can do it an exact match and ensure that those copies are no longer proliferated online especially on their systems.

MS. GILLEN: Thank you. Does anyone else have anything else they would like to add?

MR. MENELL: I want to respond to Eric, just because I think he highlights why we have made so little progress in amending the copyright statute, that I have sat through, listened to all of the hearings that the House Judiciary Committee held and each session involved people who were polarized on these issues.

And, now, let's just think about what has been said on this panel today. I mean, Peter Jaszi hit the nail on the head. Statutory damages make absolutely no sense in the way they are currently being used. They were designed to help ASCAP go around and police public performances in bars and restaurants and, now, you know, it can create a massive chilling effect on all kinds of players. And what I would say is that we could start having, I think, a conversation that might lead to legislation by just walking towards the middle on all these proposals.

I mean, I think staydown makes a lot of sense but not with massive statutory damages. I mean, I know Google and other companies like to say that it costs a lot of money to create these filtering systems that they deploy and that would chill small companies, but, in fact, Audible Magic and other companies license those technologies, and I think the FTC could easily do a study just to show that you do not have to build content ID to create a new service that has peer-to-peer and other capabilities built in, you can license those technologies.

But I think, in order to get anywhere, we have to take off the table that you would be

potentially hit with extraordinary damages. I mean, small claims court could be a good solution for dealing with some of these issues. But we have to move towards sensible remedies.

I mean, look at the Viacom case. I mean, 79,000 works times $150,000, I mean, there is over $13 billion. Now, when I asked the Viacom lawyer, he said, no, we are only asking for a billion. But, in fact, you know, a billion was kind of laughable, because they benefitted from YouTube. I learned about the "The Daily Show" from YouTube and then I started watching it.

So I just think that you are exactly right, that the DMCA is out of date. But I would ask you and Keith and others in the industries to just start looking at the middle and try to talk with -- I think Google could easily come to the table if people were willing to put statutory damage and other things out there.

So I agree with you that there are problems that are fixable. I think that the problems, though, have to be balanced, and none of the discussions in the public have really tried to do that and I just think that is where we ought to be right now. And I think if this panel were to sit together for dinner,

we could probably come up with a really nice solution.

(Laughter.)

MR. KUPFERSCHMID: If I could jump in here. So I love that last line Peter said, and I just wish it were true. I think if we were to sit down, I think we would go down the line and define the middle. I think we would all have different definitions of what that middle looks like and what it is. And so I would love for that to be the case and would certainly support that.

But, you know, I love what Peter said also about the -- you know, the small claims tribunal. We are talking a lot about big guys and big lawsuits here, whether it is the Oracle vs. Google case or the Viacom case or what have you. But I have to admit, I am really concerned about the little guys here.

That is why we have been supporting the CASE Act H.R. 3945, which would create a voluntary small claims court in the Copyright Office because it is these little guys that are granted copyright rights but they have no remedies. They have no way of enforcing those rights. And what has happened over time especially over the last decade plus, is that these small creators, these small businesses have become disenfranchised by the copyright system. As a

result, they no longer are registering their copyrighted works because it does not make sense.

The primary incentive, the primary reason to register your works with the Copyright Office is to be able to sue. And you get a lot of benefits associated with that. But they cannot afford to sue. They cannot afford to hire an attorney and pay the what -- on average, I think $350,000 it costs to litigate a copyright infringement case. So that is a problem.

You know, patents and copyrights are indifferent in this regard. You have no rights to your invention until you go and get a patent. Copyright, you have those rights and what you get from registering is the ability to sue, which these little guys cannot do anyway. And so, that has created more sort of a ripple effect, because these small creators are not registering that the Copyright Office's database is becoming incomplete, if you will. It is made up of all the big companies and the big organizations and the big creators who can afford to register on a regular basis or at least register more easily.

And the problem is you have people who are looking toward that ownership database to try to license copyrighted works and that hurts both commerce

and competition. And so for that reason, we think the CASE Act that would create this small claims tribunal in the Copyright Office would be a huge step forward. It is not going to solve all the problems, but it would solve a lot and it would give these creators, who are disenfranchised now, it would give them some faith in the system and they would begin to start registering once again.

So I also just want to just reiterate what Eric said also about the idea about this disconnect between willful, egregious acts of downloading being a felony under the law, but when it comes to streaming, which is where the new business models are certainly moving, if not have already moved, it is simply just a misdemeanor. And that just does not make sense. The law has not kept up.

Criminal penalties for copyright infringement should not differ depending on whether a work is made available to the public to download or to stream. And given the popularity of streaming, misdemeanor penalties are simply not sufficient to deter those large-scale infringers. The IPEC has supported legislation to fix this problem and we support the IPEC in that regard.

MS. ROSE: And I just want to jump in with a

comparatively very small fix that I would like to suggest, which is -- and I believe this would take some legislative action to formalize, but in the triennial 1201 anticircumvention exemption hearings that the Copyright Office offers. They currently do it in consultation with NTIA. But over the last few rounds, we have seen more and more issues of competition and downstream commerce control coming up.

And I would like to see the FTC become involved in that process, if nothing else, you know, through either the availability of a formal referral mechanism or something similar to that, because as I said, as we see more and more softwares embedded in objects, we have seen more and more instances of companies using 1201 to impact other areas of commerce outside of the initial production. And I would like to see the FTC have some kind of role in helping to consider those questions.

MR. JASZI: If I could mention -- I think that is a terrific idea. I would mention two other areas in which it seems to me that an attempt to come to the middle of the one of the kind that Peter describes would be interesting. And one is, in fact, this discussion of small claims tribunals that Keith

has mentioned already. It has tremendous appeal and obvious advantages.

And, at the same time, I think those are -- there are those of us who are concerned that a small claims trial format might not be one in which the full range of defenses and exceptions available to copyright defendants could be easily or successfully invoked. So rather than line up for or against the small claims tribunal format, it might be interesting to actually talk candidly about those competing aims and those conflicting anxieties.

An area in which legislation would certainly be necessary, but which I think is worthy of discussion now in light of all of the talk that we have had today about licensing, is the question of whether or not there are any consumer freedoms that are historically associated with copyright law that should not be waivable in an end user licensing agreement. Should the fair use doctrine be waivable in gross in an agreement, for example?

And that, I think, again, it is a tough discussion, but it is not actually a binary question. It is one in which there may be a middle ground and it would be an interesting conversation to see if it could be arrived at.

MR. O'CONNOR: So I will be a little bit of an outlier and just say I think -- and this is obvious to the FTC, I think. You know, the jurisdictional issue really is -- I think that we are kind of varying on this panel now at the moment to talking about substantive copyright law, which would be a great other panel, and we could really take a lot of time on.

I am refraining from doing that just because I think the FTC has been in its most helpful over the years to me as transactional lawyer with the guidelines about what is appropriate for licensing. You know, I remember things where I am more on the patent side, but if you, you know, you license someone a patent and then you do not have to -- you are not obligated to grant back any of the inventions that you come up with. So this may get less exciting in some ways and less sexy, but this is the stuff that is incredibly important.

I will toss out a couple of ideas again, this notion of maybe thinking about issuing guidelines, discouraging these what I will call the perpetual licenses with vague assignment sublicensing provisions. That is what lets everything just go perpetually through the data networks and lets you

lose control of your stuff.

I think that it is incredibly important to maybe issue some guidelines about enforceable, private public zones. I said this at the beginning, but let me make it more clear what I mean from that. A lot of us feel like we have been told that we have a private zone where we can just put our content up available only to a closed network of friends and associates, and then lo and behold, it gets disclosed much more than broadly. That is a problem, I think. And this goes, in some ways, to the heart of contracts themselves. Are you getting what you thought you were getting?

MR. OCHOA: In terms of what the FTC can do in enforcement, I think perhaps the single-most useful thing the FTC could do was what Meredith talked about with regard to embedded software, is trying to use the embedded software in a device to give you exclusive rights to be the one to repair or fix or service that device. That is a recurring problem. Section 117(c) was designed to address that in part, but it has not solved the problem because of 1201.

That is just an obvious antitrust violation; it is an obvious tying arrangement. And just to ensure that because there is software in a device, you

know, does not mean that you can prohibit other people from being able to service the device.

MS. GILLEN: So switching gears just a bit, Peter Jaszi mentioned the importance of a doctrine of copyright misuse and we would be interested in hearing whether you have any examples of copyright misuse and how the law would apply and maybe other panelists have examples as well.

MR. OCHOA: Well, I do think repair of devices with embedded software is the classic example of copyright misuse that could be addressed by the FTC. Another one we see in the Disney/Redbox situation, tying a digital copy to ownership of a physical copy, where they should be able to be transacted separately.

MR. KUPFERSCHMID: So on the issue of -- I do not want to go too deep on this, but on the issue of embedded software, I mean, that is an issue that has come up at the Copyright Office in the context of their Section 1201 rulemaking. I know that they are scheduled to come out with a new rulemaking decision I think either later this week or next week or sometime very soon. So, at best, it is sort of premature, I think, to talk about these issues, because this process, the rulemaking process, is an evolving

process.

And the Copyright Office has certainly tried to make it easier for those who are seeking exceptions, things like automatic renewals and things like that, and I think certainly there are a collection of statutory exemptions in 1201, as well as the triennial rulemaking exceptions that ensure that the 1201 process does not sweep too broadly. So it is very likely that these issues may be sort of nonissues, if you will, moving forward.

MR. MENELL: That may be true, but I would also remind the FTC that they played a tremendous countervailing force in the patent field, that the Patent Office is a little more sort of focused on the property rights orientation just as the Copyright Office may be inclined and because of the competition overlap going back to the mid-'90s and certainly through the whole battle over patents, I think the FTC is now, in my view, a very important player, a counterbalancing player.

So just having a way of interacting with the Copyright Office and being able to provide guidance on what you see, because they see different parts of the elephant, you see different parts. And in that sort of combination, we get a better overall balance in our

law.

MR. JASZI: If I might, I would second what Tyler had to say about the potential importance of the Redbox case, which is, of course, ongoing. With respect to the future of copyright misuse, because the district court's interpretation of the doctrine in that case is a broad rather than a narrow one, it is not limited to the kinds of tying of situations that have been the classic locus of the doctrine. And it bites specifically on this question of unreasonable contractual limitations on consumer expectations with respect to licensed goods. That is the very essence of the district court's attack in the Redbox case.

Now, what will survive as the case progresses is a different question, but it is not too soon, I think, to begin investigating from an enforcement perspective whether the vision of copyright misuse that the Redbox court articulates is one that should be pursued.

MR. O'CONNOR: I think two issues. One, with the embedded software, that is, again, I think just a topic that is really much bigger than we could do today. I think if the FTC wants to get serious about that, it has to do a whole panel session on thinking about that. It is a really deep issue.

On Redbox, I think -- and sometimes I will sound like I am going in two directions, but I am a big fan of innovative business models, and I think that, you know, we do have to be careful about when we are looking at Disney providing content and basically saying, well, look, here is a way you can get two things of content at one bite.

It goes back to this lease license model, I said that has been around for a long time. You lease, or essentially convey, under an impermanent basis some physical object and then you give some license rights. So it is not really that different than what has gone on before. So the question is whether people can just try to circumvent that. So I think that is an issue that we need to be careful about.

MR. MENELL: Yeah, we have come through this digital revolution. It is obviously going to continue, but, you know, many of us on this panel grew up in an era where we owned records. We joined record clubs, which is a thing of the past. And for my kids, I did not want them growing up pirating. So we did iTunes. We spent a fortune on iTunes. And, now, we do not touch our iTunes and we do not care about our iTunes because we are all on Spotify.

And I do not think it is necessarily a wrong

thing to -- you know, Spotify will evolve. There are obviously going to be important governance issues in how that platform works. But the beautiful thing that it has brought about is that younger people are not viewing music as free anymore. They are joining services. They are participating in the market. And the celestial jukebox is starting to work as we had all hoped.

And also the data side is pretty good because you get paid based on how people are using music rather than just some kind of, you know, Nielsen or other method. I mean, you have actual good data, and I think, for people growing up today, the main problem, though, in that market, as I have tried to communicate, is that the major record companies are able to dictate the terms on which money is distributed, because no one would join Spotify without having access to the full catalog of the major record labels.

So universality, I think, in music is a very important feature of an ideal system. But I think as with the Music Modernization Act and other things, we are starting to view this as less of a free market, as more of a regulated market, but we could go back to the goals of the original copyright world, which is

that we want that money to flow in a balanced way to the creators. So that is a sense in which I hope the Copyright Alliance would support me. And I worry that because of the legacy catalog, the major control in that space is still dictated by three or four music labels.

And how that -- you know, they have -- Sony, for example, is giving some of the money that they earn from the Spotify IPO to artists. But I think sort of trying -- for me, that is the health of a copyright system, is money getting to the creators in proportion to value. And it used to be the record companies did a lot of value. They do not do it anymore. And, yet, they dictate the terms on which an independent artist comes in to Spotify. So it is a very big issue.

But I think the film side, what Eric's talking about, is actually a different market. And I was interested to hear how he viewed some of those issues. He is worried about Netflix, but in some ways Netflix and HBO and the other companies are creating competition for his clients' products. And so making sure that market worked well could be very good for filmmakers.

And I see the world as being -- you know,

copyright is not monolithic and so we have to look in these pockets. But music, I think, has improved dramatically in the last five years. Film and television is getting better, long-form content. There are a lot more people producing very valuable stuff that people are paying for. But I think being aware of how network effects are going to continue to operate in these fields and how power is allocated is ultimately going to determine how well the copyright system functions, how well money gets down to people who create things that other people value.

MS. ROSE: To sort of piggyback on that, you know, holding up the music industry, I think, it is certainly not a determinative example, but possibly an illustrative one. The music industry is governed largely by highly opaque contracts. Nondisclosure agreements are pretty endemic within the industry. And so this leads to asymmetries of information all around.

And I cannot speak for artists as someone who is not one myself. I will name-check groups like Future Music Coalition which does a lot of work on this. And that the money flows are intensely opaque. The amount of money that given streaming services pay out to record labels is opaque and, frequently, the

existence of a nondisclosure agreement is a precondition for any record label who wants to enter into these contracts. And so, these things are purposefully obfuscated.

This can create problems on the artist end with asymmetry of information about what compensation rates are among artists. And one of the places we see this most endemically is in the exercise of termination rights, which are the statutory rights that were made available. They were created in 1978. And essentially what they are is the ability of an artist to revoke a license that they have issued for use of their creative work 35 years after that initial license was issued.

The first batch of these really became ripe in 2013 en masse and everyone kind of held their collective breath to see what would happen, and it was a big fizzle. There has not been much successful exercise of these termination rights. And the attempts to exercise them have largely been litigated, and they have been settled under nondisclosure agreements.

So there is this sort of endemic use among the industry. And while this is not necessarily -- this is partly a problem tied to copyright because

termination rights are tied to copyright, I think a lot of the problems we have had in systemically addressing inequities that stem from these industries has been tied up in this truly amazingly pervasive use of nondisclosure agreements and lack of information flows.

And it makes it very difficult not only just as someone who is curious about the market, but it makes it extremely difficult for policymakers to craft any meaningful policy around these issues, especially when you are relying purely on self-reported numbers coming from major industry players who have their own interests disturbed by crafting the data that they give you.

MS. GILLEN: Thank you. And, unfortunately, we are running short on time. I think we have time for everyone to make some final remarks.

Eric?

MR. CADY: Sure. So I think I would just add a reminder here that content fuels much of the platform innovation that we have discussed today and would reiterate that, as a matter of public policy that consumer interests requires wide access to an ongoing supply of the creative content from major blockbuster films to the diverse and unexpected

productions from the independents.

The unfortunate commercial reality here is that a few major online platforms and distributors of content hold market power that is unbalanced to the detriment of program suppliers and consumers. This reality, combined with a lack of meaningful platform responsibility to avoid illegal content, means that the FTC must be even more vigilant in its efforts with respect to competition, consumer protection and their relation to the copyright law and we urge the FTC to make legislative recommendations in that area.

IFTA looks forward to continuing its participation on these important issues. So thank you.

MS. ROSE: Yeah, I think I just want to reiterate fundamentally consumer well-being and consumer freedom is not just tied to freedom to access and consume content. It is tied to certain statutory limitations and exceptions in copyrights. It is tied to certain freedoms to not only consume content passively, but to use content in forms of commentary parity, transformative natures.

And I think we tend to lose sight of that, that while the market has grown to accommodate passive consumption quite nimbly and quite pervasively, the

tradeoff has been that we have started to lose the immediate ability to exercise these other consumer rights that have been enshrined in the law.

And the place where -- you know, again, I come back to harping on it -- the place where we run into this perhaps most frequently is in the very fundamental concepts of ownership and how those have been undergoing or not undergoing a paradigm shift by the pervasion of consumer-embedded software.

So I thank the FTC for holding the panel and also for inviting public knowledge, having consumer voices on it and, hopefully, I look forward to seeing where your inquiries lead you.

MR. O'CONNOR: So in my final remarks, I would just say -- I would reiterate again that free and fair competitive markets -- goodly competitive markets for creative works are based on strong property rights. We start there, and then people move into the market. It is unfair if people have to negotiate against free. So I think we could spend a lot more time on the music industry where things are just -- if it is available for free out there, then you may freely come to a negotiation, but that is because you are competing against yourself in the rates that you are trying to set.

I think the transparency is something I think we all might agree on on the panel, that there needs to be more transparency across this, especially with the data and what I am calling these kind of back behind-the-scenes business-to-business deals that are going on.

And then, finally, just once again, I think this is a great time for the FTC to continue its research and issue some updated guidelines, particularly for how content is used in this new digital age.

MR. JASZI: I think one pretty clear point of consensus on the panel is that one measure of the health of a copyright system is the transparently available evidence of the meaningful flow of economic returns back to individual creators. But that is not the only measure of the health of a copyright system, as Meredith has suggested.

The longer term health of a copyright system, the ability of a copyright system to fulfill the purpose of promoting the kinds of cultural progress to which Article 1, Section 8, Clause 8 refers depends also on mechanisms both in the law and in practice around the law to assure the continuation of consumer freedom to recreate. And that, I think,

is where the new business models, the limited access models wrapped in end user license agreements most threaten the health of our copyright system going forward.

MR. OCHOA: I think I would just like to point out that we have to be very careful because copyright owners are not monolithic. There are just lots and lots of different types of copyright owners, ranging from so you have a lot of the people that just want to post stuff on social media and on YouTube. Individuals who create content, own copyrights in their content, they are primarily interested in credit. They are not primarily interested in money, but they do not want to be taken advantage of if their stuff is being used commercially. They would like a share of it.

Then you have individual creators that are trying to do it for a living, that are trying to -- individual photographers that want to be able to make a living from doing photographs, perhaps individual songwriters or singers that want to be able to make a living from their songs or their performances. And as Peter said, they have to live in a world where the rules are largely dictated by the large corporate copyright owners, the four major record labels make

the rules for the music industry, and people who want to make money in that space have to live by those rules.

Photographers, you know Corvus and Getty make the rules for the photography industry and other people have to live by those. So trying to correct that imbalance of power between small individual copyright owners and large corporate copyright owners might be a useful focus.

MR. KUPFERSCHMID: So this is supposed to be a survey panel. We certainly did do a survey. We covered a whole bunch of different issues. I know we are going to be filing written comments and so it is just not possible to address all the issues that came up here today on the panel.

But I do want to talk about one since there seems to be a theme running down the table here about the health of the copyright system, and with regard to the health of the copyright system, what really has not been focused on enough here is the adverse effects that piracy has on competition. And I am going to give one example here or maybe two and try to it pretty quickly.

But in three months in 2015, Disney sent 35,000 takedown notices directed to illegal copyrights

of Avengers: Age of Ultron, which was still in the theaters at the time. Those were sent to one single site. That is more than 10,000 notices a month, more than 300 in a day directed at a single movie on a single file hosting site. Similarly, over a three-month period in the spring of 2015, Fox sent more than 57,000 takedown notices to a single file hosting site for the film, Kingsman: The Secret Service. That is 19,000 notices a month to one site for the same movie.

If the DMCA was working as intended, one would expect the notices to the site to decrease over time. Yet, we see the opposite. For instance, in the Kingsman example, on April 30th, Fox sent 697 takedown notices. On July 21st, three months later, it had to send 881 notices to the same site for the exact same work. In no universe, whether it is the Marvel universe or any other universe, is this an effective way to deal with piracy. This is just not a healthy system from the piracy standpoint and something needs to be done.

I am not suggesting legislative change, but perhaps we are a big supporter of voluntary initiatives and voluntary measures to promote competition and protect consumers and we would

certainly support the FTC playing a role in that.

MR. MENELL: I see we are at the end of our time. I will just say that this was a great beginning, a great first date, and I hope there are many more.

(Laughter.)

MS. GILLEN: Thank you. Yes, I think it gas been a productive discussion, and please join me in thanking all of the panelists.

(Applause.)

CLOSING REMARKS

MS. MUNCK: So since I am already sitting here, I will do the closing remarks from here instead of standing up. But I just want to give thanks to Elizabeth and John for their moderation today. Thanks to the panelists for covering almost every issue in intellectual property and copyright law.

You have clearly given us a lot of work to do in terms of going back and digesting the transcript and understanding what we have learned, both today as we prepare for tomorrow when we will begin at 9:00 a.m. with Drew Hirshfeld, the Commissioner for Patents, looking at patent quality, patent litigation, trade association issues, and economic issues, closing with Commissioner Slaughter's closing remarks.

So both in preparing for tomorrow, but also in preparing for what we are going to do going forward and I am very happy with our inaugural copyright panel and I hope that we will be able to continue to work together.

Thank you. And thank you, everyone. Have a good evening.

(Applause.)

(Hearing concluded.)

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