

European Policy for Intellectual Property

Panel Discussion – New Challenges to the Patent System

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Dominique Foray: This is the last session of this conference, the panel discussion. The Title is “New Challenges to the Patent System”. So we have got here many extremely committed people in these problems of challenging the patent system, and of course I will give the floor to everybody here but I would also like to get questions, comments, anything from the audience. So from time to time I will address some issues, I will just ask you to intervene, if you need to. So, of course we will talk in this last session about research and policy, and I think that the success of this conference, thanks to the European Patent Office, thanks also to Prof. Harhoff, is that two communities probably are knowing each other better now. I talked to many colleagues, to many economists since yesterday and we all agreed about the fact that one great result of this conference is an increase in our positive appreciation of EPO, how you are strategically thinking, your role, and your function, and so the first keynote by you (Manuel Desantes) and Ciaran (McGinley) was very helpful to realize that. Many of the informal talks during the Bavarian evening, for example between us economists and EPO-staff, helped very much to really get these two communities closer together. I hope that you know also that the EPO-staff have a better appreciation of what economists and also social scientists are doing. I think it’s not enough, I mean it’s not enough just to be a bit more familiar with each other, we still need to work on both sides to improve the transferability of results of our research and to increase the impact of research about patents and intellectual property rights to policy. We are already aware, Adam made this point yesterday, that we have to make a lot of efforts to create a common vocabulary and to explain better what we are using as a concept. We have to put a lot of effort into improving our knowledge of how the system works. Probably on the side of the EPO and practitioners, the effort to be made is to increase the absorptive capacity of policy making institutions and patent offices vis-à-vis the work done by economists. So to discuss the need for better transferability and convergence, I would like to address several issues now, not to do that in general, but to address specific issues. And each time with a leading discussant and of course the other members of the panel possibly will react as well as the audience. By the very end of this round, I will let you have a few minutes for final statements.

Dominique will start. I would like to come back to a recurrent topic and a sort of obsession during this conference, which is this idea of “one size fits all problem”. Clearly this is a reasonable principle and I said that yesterday. There is certainly no room to adapt the patent system to any kind of sectoral particularities. If it was possible, if it was feasible to adapt like that, I mean this kind of Pandora Box, which will be opened, so it’s quite reasonable not to do that. On the other hand economists seem to be a bit worried about that because working on technology innovations shows really that technological specifications, sectoral specifications matter. And so the question is, Dominique, does it mean that a large amount of economic works is just irrelevant for policy issues, and how can we deal with this “one size fits all problem”? You have the lead of the discussion.

Dominique Guellec: Thank you, Dominique. There are companies which sometimes invent diseases for being able to propose a cure, a drug and make money. So maybe the economists are inventing problems in order to propose solutions and sail their staff. Hopefully it’s not the case now. So let me remind you what the issue is, as we started discussing it yesterday. There are differences across inventions in their economic characteristics and that would justify a differentiated degree of protection. This is the basic notion in an ideal world. I will address two questions. What type of differentiation and which ground would be desirable first; and second to what extent is it feasible or not. So, when we started to discuss that yesterday, our discussant Dietmar reminded us that there is already a de facto differentiation of the patent system, patent breadth, probably inventive step across technology fields, these coming from traditions, which have evoked in the world of patent examiners. So if we think that, and I think that it is true, there would not be a need to invent further laws, regulations, whatever, that would complicate the system and that would be useless. However, I think that it’s not the whole story. The current differentiation is based on a technical view, a technical assessment of inventions. I’m not a patent examiner, nor a lawyer, so you will excuse me, I apologise, if my language, my vocabulary is not correct, but basically the breadth of a patent is made according to its contribution to the art. So it will protect you for your invention and that is on the technical ground. And that is the situation, where we are probably now. The fact is, I think, that this is not a satisfactory situation and I’m talking in my own name, not in the name of the organisation I belong to, which has no opinion on these aspects, on this issue. This is strictly not enough, as we saw yesterday, it’s important to assess patents not only on technical grounds, but also on economic grounds. And the criteria for granting patents, criteria for granting a certain breadth to a given patent should go beyond the purely technical aspect for embracing economic aspects, for instance the cost of the invention, its value, the cost of imitation might be relevant also, also a couple of technical aspects, which are beyond the discovery of the invention itself – is it an upstream or a downstream invention, is it part of the field that is evolving rapidly or not, many technological opportunities, incrementality and all that. So these are many characteristics that go beyond a purely technical assessment of a

single invention. I will claim that on this ground a differentiation of the patent system, differentiation as it is now, is not enough. The reason is the following: if you want to take into account these economic issues and these issues, which are broader than the invention itself, in many cases patent examiners don't have the information, they don't know the cost of invention, cost of the imitation and all that. That's the first thing. Second thing, regarding the fact that it is an upstream invention or a downstream invention that the industry is rapidly evolving, it's characterized by incrementality and so on, these are characteristics that go beyond the invention itself. Which means that for these characteristics it is possible to set rules that would apply whenever it is identified that the invention that is submitted to the patent office falls into a certain category? I will give examples later. For economic characteristics - they are not known for any single invention, they are not known by the patent examiner, what the cost of the invention was, in many cases they are not even known by the company that is filing for the patent. Of course the value ex ante, the company has a very vague notion of the value, some notion, but even the cost of an invention in many cases is not known. However, there might be some regularities, some regularities in these variables across certain industries, across certain technological categories. And if we can identify such categories, than it is possible again to come to rules that could be applied to entire families, entire categories of patents, that would be differentiated rules. So it is on these informational grounds and on the fact that we must go beyond the technical, the purely technical aspects for assessing patents, so it is for that reason that I'm claiming that a differentiated system is desirable. Let me give you two examples very shortly. Business methods that were discussed several times here, I will leave aside the fact that they are not technical, I think as an economist the fact that some thing is technical, according to a dictionary or not, I don't think is a good criteria per se. It can be a good criteria, if you can put some economic value that makes this differentiation relevant to economic aspects, otherwise it's interesting for technicians, philosophers and the rest, but I don't think it's an important distinction for patents. So business methods – they have the reputation of being inventions that cost very little. That's the first thing. Second thing, many of these inventions are extremely spread and they improve in an incremental way while spreading. So on this ground a possibility for having protection that will be well fitted to these type of inventions, we could think of a shorter patent, shorter narrow patents, as there are not very costly, so there is no need for a big compensation, a big price, a big incentive for inventors, short and narrow patents. And second, I would say a kind of 100% research exemption that would apply to all economic actors – universities and other businesses. In concrete terms, when you use a financial method, when you use it, when you implement it, when you sell to your customers products based on these methods, you will have to pay your license. When you use it for improving it, this would not justify paying for a license. That's the first example. Second example, biotechnology or even more specifically DNA, this was discussed this morning , the main issue here is that it is an upstream invention, they can be very costly. So they

would deserve probably patents of considerable length – 20 years maybe, but they might raise obstacles to follow on research. On this ground one could consider that narrow patents would be desirable. Very little leading breadth. When you have invented one pathway to some gene or whatever, you can patent that pathway and that's it, for instance. And again, research exemptions here should be granted. It's not clear that it should be extended to the business sector, but at least in case of universities doing research for the sake of knowledge, which is not the case of all universities today. These research exemptions should be guaranteed.

Now I will be much quicker on feasibility. It's clear that when you set new rules that are based on certain criteria, you have to think, you will have a system that will be somewhat more complex to manage. But looking at thousands of pages, of patent case law, rules and the rest, I think that should be manageable. But more specifically, I would have two arguments. First one is that it seems to me and patent examiners could intervene there, it's much easier to assess the inventive step of a patent that is in the technical category. Isn't it? And it's the daily business of patent offices to do that. And it's there that it would be more contestation and it works. Certain patent officers are able to identify the inventive step. So why not the technical category, as they do it now. In addition to that, I understand that patent officer desire to have patent examiners, a subcategory of patent examiners, called patent classifiers whose job is to classify patents. So I don't think there is a feasibility issue there. In addition to that, patent offices, the USPTO has issued special guidelines for business methods, so they know what a business method is. The trilateral offices have issued, I think, common guidelines or something for certain types of biotech patents. Well, there are already things like that, which are going on. I don't see there is a problem of feasibility.

I will end this intervention by a proposal, as we have to be constructive and we have to bridge the gap between practitioners and economists. Based on the example that was mentioned yesterday, during the Chinese cultural revolution intellectuals were sent to the countryside, in the case of the Sloan Foundation, they sent economists to factories for looking at the reality. Why couldn't we set up a group of economists plus EPO examiners that would try to find this common language that Adam was referring to yesterday? Namely, what is patent breadth? In reality, we economists tend to think that it is a relevant notion. When it comes to finding it in reality, we have more difficulties. But if this notion has some relevance in reality, than we should be able, by discussing it with patent examiners, to identify it. I mean, this could be such a common working group where economists and patent examiners could go ahead and look at this question of differentiation of patenting standard, de facto differentiation across technology fields and all of that. Thank you.

Dominique Foray: Thanks very much. I very much appreciate that you have a positive proposition again. I would like to ask Prof. Desantes to react on this; I mean all these comments about this problem.

Manuel Desantes: On this proposal?

Dominique Foray: On this proposal for example or even on the feasibility of what Dominique said about differentiation, special guidelines, etc. All these things, which at least marginally increase the complexity of the system.

Manuel Desantes: Sure. I will do it. And I guess that I will do it not on behalf of the EPO, but on behalf of my colleagues here and I'll try to interpret, what my colleagues could believe after those two very intensive days working with you.

I'd like to start following your path by a finding, you like findings. Certainly the finding is that we live in a different society. I can assure you that we all, the EPO, understand that. We live in different societies. We live in a new society. And the knowledge based society has its specific characteristics. I would not repeat them. I started my intervention yesterday with them, but certainly you have mentioned a word, which in my view is the key word. Regardless of whether we like it or not, this society is more complex. So the word *complexity* is something we do understand at the EPO. We do understand that when you change from one society to another, and the new society is much more complex, but at the same time much richer, you can face the issue either as a threat or as an opportunity, as a challenge. And I would like to interpret the understanding of my colleagues at the EPO in the sense that we understand that as a challenge, as an opportunity. That's why we were so enthusiastic, when coming here and starting discussing with you the future. And the future, in any case, is more complex and this means certain consequences. You have addressed several of them. The first consequence is that the system changes. And we are ready to accept that. And that's why we arrived here saying: "We need you", as soon as you understand what we are doing. First is your work, you have to understand. And now let me put on the hat of a Professor of Law, this time. When I arrived here, I thought I knew about the EPO. Oh, my God! After two years, I have started thinking that I can understand how to start learning what is happening in the EPO. So, approaching from the university, you have to understand us in order to be able to formulate your proposals in a feasible way. But if we are changing to a more complex situation, this has consequences all over the system. Suddenly, the intellectual property system as a corner stone of the innovation, as a corner stone of the development interferes in all the different economic policies. And then we start with pre-filing policies. So the whole pre-filing attitude has to change. And will become much more complex. And we will see new professions, where the economists will be the lead professions, we call innovation supporters. People will come to enterprises and to patent offices and will need advice on where to invest, how to invest and why to invest. This is different from a patent attorney or an intellectual property attorney. There are new professions coming.

The second challenge affects us directly. It's the patenting procedure. We are the masters of the patenting procedure in Europe and we realize that the patenting procedure will become much more complex. And there we realize that if the focus is not on the product, but the focus now is mainly on the user and the user is not only the applicant, but the

third party is affected, but society, and then we are here to serve the users. We are not here to serve the system, we are not here to serve a product, we are not here to grant patents for the sake of granting, and we are not here to defend a certain degree of protection for the sake of doing that. We are here, because we serve the users. And in a much more complex society we have to be disposed to accept that, while until now our guidance is the technicality, I fully agree with you not only in this issue, but in the general approach, while now we focus on the technicality, then the system has to focus on the economic approach and the economic consequences. It's not because of the technical consequence, but because the technical consequence means economic consequences. Biotech narrow or Biotech following the chemical approach, which is the approach the EPO follows now, because we don't see from a technical point of view the difference, than we'll come with the economic approach and than perhaps the system has to change. If the user asks for much more differentiated products, users again generally speaking, than the system will have to provide differentiated products. And than we will have to start talking on matrix actually. And matrix means that we will have different sectors and I can assure you, that there will be not one EPO, but 14 EPOs depending on the 14 sectors certainly. But at the same time we will have the different interest and then, on the other side, we will have finally a vertical and a horizontal line, where we will have a clear matrix, which will allow the system to fulfil their objectives. And their objectives, I have repeated many times, is to create economic value and to force to innovation. And at the same time, we are disposed to learn from you on what way should we be prepared for the long run future, for these matrix situation, this differentiated situation. But at the same time, when we grant a patent, the effects will be different. Than we come to the question of access to drugs for instance. And then the issue is not an issue, where the EPO is directly affected, because we have already granted a patent. We come to the effects of the patent, and we then have to realize and to accept that living in a new society means that intellectual property cannot be regarded in an isolated way. Then we have competition laws. And then we have foreign investments. And then we have trade barriers. And you cannot treat intellectual property issues isolated from the problem of parallel imports for instance, regardless whether you economists believe that this has very little effect. It will be a very little effect, but we are talking about the whole economic policy, we are not talking only about the narrower scope of intellectual property. I will finish this, provocative again, but following your path, provocative approach, we are convinced that the principle "*one size fits all problem*" is a principle, which could be adequate for an industrial society, not any more for a knowledge based society. We are convinced, however, that before moving, and don't forget that we are conservative, because we are serving users and we are serving the public, and we are a public international organisation, and we cannot move just like that. We have to know well before moving: What do we want? What are the objectives? Why do we want to provide protection to a certain number of inventions? What do the users want? What are the different degrees of protection that we want to provide as a

consequence of that? And only when we will be able to understand that and our politicians will be able to understand that and our lawyers, who many times make the law and don't understand what is behind, they will understand, then we will move. So, please be aware, and I would like to finish with that. I'm not a conservative person at all, but we are a conservative public office, because we grant service and before moving, we want from you a clear understanding why we are working the way we do now, and how we should move into the future. And we do believe, we should move. But how should we move into the future, knowing where we go. This is, if you want, the most fundamental issue, and I guess that I interpret the views of my colleagues, when assessing that.

Dominique Foray: This was very clear. You will get the answer tomorrow. Just to move close with this "*one size fits all problem*" I wanted to ask Michael Lehmann, since lawyers are generally more cautious than economists in this idea of transforming the system, so please Michael.

Michael Lehmann: Yes, indeed. I would like to speak as a lawyer from the Max-Planck-Institute in Munich and I would like you to look at this map over there and the flags. It's very impressive. You see there states, which are not member states of the European Community, but they signed the European Patent Treaty right from the beginning like Switzerland or later on Sweden, which of course became a member state. And, I would say I have full understanding, having studied economy, for most economic propositions of differentiating a patent system according to the inventive step. But it's simply not the time for those differentiations. We've been working very hard. 50 years ago we had 50 different patent systems. And meanwhile we are moving a bit closer, because we have a harmonized European bundle of patents. There are still national territorial property rights, they are not identical and of course the dream of the patent lawyer right now is to move from the European Patent Office into a Community Patent, like we have a Community trade mark and of course a Community design protection already. And one should not forget that at least in some member states you have something below the high patent property right, you have something like a utility model protection, which is also on the way in Europe, to propose a utility for the lower invention, not a really examined property right, but it gives you some protection. If you look to the United States, there is nothing. You have no utility model, you have no real design protection, as we have in Alicante now, a European harmonized design. Of course you have a design patent in the United States, but it's still the same system of patent, which goes from biotechnology to design, which is not adequate. So there are already some differentiations. And of course, if you talk about business models and so on, you should ask the question: why do we need a patent for business models? If you have a successful business model, you make a lot of money on the market, you don't need any specific protection, you don't need R&D incentives in this area. Imagine self-service would have been patented in the fifties by somebody as a business model. It's ridiculous, and I must say the American decision of Mr. Rich, (Judge

Giles Rich), was his last decision before he passed away. It's a wrong decision. I know many American scholars, who reject this opinion, like Rochelle Dreyfuss from New York and others. For business models there may be some protection, some areas under unfair competition law, even copy right, but patent law is simply not the right instrument, and I bet the United States will in a way go backwards. They simply overstated this. DNA, Biotechnology, of course that's a very intriguing and interesting area, but I think we still have to find the right way to integrate those new technologies, like software into traditional patent schemes. So, I think I have many sympathies for your theoretical deliberation and I loved to listen to Jenny this morning. According to her models, you would change a patent system according to the level of economic development, and also you used 2% of sales and below that no patent would be valid. Those are quite intriguing and interesting aspects, but simply I would say, the lawyers won't buy it at the moment. What are you doing? You're going back into 19th century, you're going into the discussion of, let's say, how far a monopoly and you are in a way growing backwards. You should try to move forwards by integrating, by moving towards a worldwide, in a way, single fit model of patents and when we have achieved that, maybe then there will be some differentiations. One last word, if you have a property right, which has a certain scheme worldwide, you need not to use it equally in each country. If you have a pharmaceutical patent in India and you have an exclusive right, but you can discriminate to the price, you can charge according to different developments and different degrees of economic evolution, you can charge different prices and also the use of patent can be different. But you should not refrain from granting patents in these areas, and I think it was a tremendous success for the IP field in general to accomplish TRIPS. TRIPS is the first worldwide working agreement on intellectual industrial property rights. And we are very happy to have this. I'm absolutely negative about making one single step back from TRIPS. First of all, we must enforce TRIPS. We must transfer TRIPS into those national legal schemes. Then we can go into more differentiations. An economic evaluation, sitting here as a lawyer, I must tell you as an economist, leave it to the market. The market will tell you what a patent and what any property right is worth. The value. How can an examiner tell you the economic value of an invention? It's simply ridiculous. It's hard to find quite often the right inventive step, and we debate this in the courts up and down quite often, but any other item could in a way be detrimental to the patent system. And I would also go against the American system, I would plead to stick to the European patent idea of technical invention. Technical invention of course in a broad size, in the broad understanding, including software, but that's it. You should not patent everything that is invented under the sun, as the Americans do. Thank you.

Dominique Foray: Thanks very much. Time is running and I have still three issues on my agenda, but may be closing that, I would like to have any kind of very short comment either from the audience or from some members of the

panel. Jenny. Try now to be short, because then I would like to address other issues.

Jean O. Lanjouw: Yes, sure, but I have to follow up from Michael. I think probably everyone in this audience would agree with this statement that the patent system is more than just a set of laws. It's really more like a culture. It's a culture of respect for property rights. And, I think, an appreciation of the good that property rights can do. And my understanding in part of what firms were trying to do, when they push for TRIPS and I think also lawyers, who are not directly in firms, but also supported the implementation of TRIPS, was that they had in their minds a global environment, where all countries had in place reasonable patent systems that they were enforcing them correctly and the property rights were respected. And I think that the question that I would pose to people, who have that in their minds, is the end goal of TRIPS is really that in the developing world there essentially isn't yet a culture with respect to intellectual property. They are in a process of developing a culture with respect to intellectual property. And I think the important question is whether one wants to see these countries, turning to countries, which reject the patent system and view compulsory licensing as a normal way of running a patent system or whether you want them to grow up to be countries, where patents are respected and there is more or less an acceptance for the patent system within the populations. Because, I think, what is happening right now is a process that is not leading to a world that has strong patent systems, which are supported by their populations. So, I would maintain that if you want to see strong worldwide patents, that the approach of saying right now we insist on strong TRIPS everywhere is not an effective way of getting there. Sometimes it's better to go slightly softer and less directly to the end goal, if you actually want to end up by getting to the end goal. As a practical matter, I totally agree with your point that lawyers are not enthusiastic about this idea on a whole, and I think for two different reasons, I think for some of them it's a kind of an ideological issue. I mean, there is a more direct vision of strong property rights, being important and we need to insist on them and insist on them being enforced. I think within companies there is actually a more difficult problem, which is that they would stand to get canned if anything went wrong. And so of course, they are naturally a little reluctant to be accepting. But there are other people in firms, who have other kinds of jobs like policy people or the people, who deal with this problem on the front line, who are more enthusiastic.

Brian Kahin: I have a comment on the difference between Profs. Desantes and Lehmann on the strategic approach, whether it should be conservative or activist and a rethinking of the bottom lines of work. And that is, I appreciate the situation in Europe in the context that puts the European Patent Office, but I want to open that up to serve the larger international political context. Particularly the difference in approach to intellectual property that you see emerging between the US and Europe. And the opportunities for Europe to take a leadership role here, partly motivated by the change that is going on in Europe, but partly

motivated by the ideological institutional excesses that are going on in the US. Because, if you listen to the patent community in the US, you hear the claims that intellectual property is accountable for two thirds of the value of the entire economy. And that patents are so important that they shouldn't be judged by any terms, except the patent community's terms. Of course, you're running into a political problem there, because the more you argue that patents are important, the more you are essentially arguing that they should be subject to a broader oversight. And if their leadership to provide that broader oversight to come out of Europe, that would to me mean a very productive change in the whole international scene, where particularly on these cutting edge issues Europe is positioned between the US and the developing world.

Dominique Foray: Thanks very much. I would like to move to the second issue of this panel. And this is Adam, who will lead the discussion. He suggested to ask him the question, but I think it's a good question: in a sense we don't pay enough attention to what topics are we studying, do we always chose the right topics in terms of policy, usefulness and implications. Some topics, which are fascinating from a theoretical point of view, are of little value in terms of policy recommendation. And so, the idea is how useful can economists and lawyers be for a policy discussion and is there any issue in terms of choosing the right topics to be studied. So, Adam.

Adam J. Jaffe: What I wanted to suggest along those lines, and again maybe this pose in Dominique's sort of economists making work for themselves, but I wanted to suggest that it could be productive for economists and people from the agencies like EPO and others together, to think about a particular line of analysis, which is, I think underappreciated, which is how the various pieces of the system – inventors, firms, examiners, judges, lawyers and so forth – respond to the incentives that are created by changes that we might make in policy. Too often, I think, we think about the rules that we make and the direct consequences of those rules, but we don't think about what might be sort of a second order consequences in terms of the changes in behaviour that would be brought about, when we change people's incentives by changing the rules. And just briefly, I'd like to mention two examples of areas, where I think this could be helpful. We heard just earlier today about cheap software patents and the fact that because software patents are easy to get, we see firms applying for more and more software patents. That's a response to incentives. You lower the cost of a particular type of patenting, you generate more applications of that sort. In the United States there's now a lot of discussion of the fact that in the USPTO examiners' productivity is measured on the basis of the number of final dispositions that they produce. Well, it's not hard to figure out how that affects the behaviour of examiners. We had a discussion, Brian and I, yesterday, about a sort of increasing the inventive step necessary to overcome a non-obviousness requirement, the USPTO has talked a lot about that in terms of improving the quality of examination. They have to address that as a technical problem. There's been very little

discussion of the fact that you have a vicious cycle at work, where you make patents easy to get that generates more applications, which makes it much more expensive to do a good job on every application. If you could move to equilibrium, in which patents were harder to get, in fact there would be fewer applications. And if there were fewer applications, it would not be as expensive to do a good job on all the ones you got. So that's just the kind of issue that I think merits further thought. Related to that I'll just mention one other thing that's often talked about, which is the issue of how do we improve the ability of the patent examiners to find out about non-patent prior art. And this is in particular an issue in software, it's also to some extent an issue in biotechnology. And it's often addressed to as a technical problem. What kinds of databases, what kinds of facilities do the examiners have to have at their disposal? I submit it's a problem of the incentives. There are people out there, who know about the non-patent prior art, what we should be trying to figure out to do is to create incentives for them to provide it to the patent offices.----rest of speech inaudible----

Dominique Foray: Thanks very much. So, any kind of reactions to these possibilities of exploring this kind of fields? Dominique, for example, as another economist, working on this subject. Any kind of reactions in the audience about these ideas? Yes?

Participant: Yes, I work for the EPO, and it happened that I have been working on a strategic project and what has been said yesterday, at the opening, is actually something that we are striving to go to. And as being elaborated in these studies, there has been a strategic analysis, we have been looking at implications of changes in many directions, we have been looking at options, we are looking at all possible actors. Of course we had constraints in time. And I would like to see this same conference, our participation to this conference as a further step in broadening and deepening this analysis. So, indeed this has happened, but the process is not over yet. So, the question is: where should we look, which kind of themes, should we explore more? I think that anything that improves the understanding of the behaviour in the system, is good. And then, if from this we can also extract the implications of certain changes, so where are the parameters that we can manipulate and what would happen if we could move one of these levers, if we could change one of these parameters. All of the implications, well indeed, this is something to study. You mentioned the effect of cheap patents – yes, indeed, that is something that has been considered, but then again to make a decision in this field, you need to have a certain level of consensus. There are a number of contracting states and there are a number of constituencies and users and so on. So, it's not at all a simple process, it's not a matter of saying: well, there's something to be made more efficient, and therefore we make this, no it's not only a point of efficiency. It's just a point of saying: ok, this choice is not neutral. Who are the beneficiaries of this? Do we see the net positive effect? Do we have the support to do that and then the organisation possibly can move in that direction. Again, as I said, it's a

long process and the deepening and the broadening of our understanding is critical in this respect.

Dominique Guellec: Thank you. Prof. Desantes referred to the pre-filing stage, Adam proposed research topics of the filing stage, and I mean behaviour of USPTO and other actors. I would go a further stage downstream, proposing to make more research on the post-filing stage: licences, markets for technologies. We know very little about this. There was a very interesting book published recently. But it was confined to a couple of small and specific sectors, OECD is conducting work at the moment, but we have to confess that the database that we can put our hands on, which was very expensive, was actually very bad. So, there is some theoretical knowledge, but it's not really in depths now and the empirical knowledge, the data are simply missing. So, in that regard, maybe patent offices might help in collecting data on licenses, what type of licenses, what patents are licensed and so on.

Dietmar Harhoff: I would like to comment briefly on the theme that has been that "one size fits all" and modify that a little bit towards "it's all in one box, but it depends which box it is". There are legal boxes, legal scholars' boxes, which are full of details, do not contain numbers and do not contain the word "efficiency", but they contain many other useful things. There are economists' boxes, which contain the word "efficiency", typically not a preference for going into details, procedure of details, other details that Adam has referred to, are very important, because they determine the incentives of the players, of all the players in the system. And therefore, I think we need to combine these aspects and I think economists have to say something about that, about behaviour, given that we know the details that are impacting on this behaviour. So, I'm very sympathetic to the suggestion that has been made several times starting with Paul David yesterday, now from some of you, that we should look at the individual elements across all phases, what Dominique just said. Ok, not just the pre-filing, the filing, the litigation, but also the building of technology market licensing and so forth. Ultimately, this will require that we really come to grips with how people operate this system and how they act in this system, given that makro-policies give them certain incentives. And I think, if I look back at the economics literature over the last 15 years, there is clearly a tendency to what's doing that and I think that it can be extended in an exercise that has been sketched out here. Thank you.

Dominique Foray: Thank you. By the way, Prof. Gambardella, who is one of the authors of this book "Markets for Technology".

Prof. Gambardella: Well, since this was mentioned by Dominique Guellec, I clearly saw Dominique looking at me and waking me out: please, talk about this. I felt this. So, I have to say something about this. Well, I totally agree on the point about the lack of data on this issue. We have worked on this issue, on the "Markets for Technology" and published the book that you have mentioned. There are a couple of things I want to mention on this. First, there is really scattered evidence and very little data on a

phenomenon, which beneath all appears really to be very significant. I mean, what we know is that licenses in the US for instance have grown at about 12% p.a. during the 1990s. Another set of figures that we collected with great difficulties is that for instance these markets are much more underdeveloped in Europe as compared to the US. And in that respect I'm really taking out the point that Prof. Desantes was making up yesterday. It appears that by and large, the size of this market in Europe is one fourth, compared to the US. And one thing that we have been arguing, discussing significantly is exactly the point that we need more information about these markets. We don't understand why we collect several information about several other economic issues, but on an issue, which is of increasing importance, we know absolutely very little. And so, I'm really pushing for the idea of collecting data on these ideas, the issue is strictly related to patents. For one reason, one of the arguments that we had on the bases of the data, we could collect some interviews is exactly a point that Brian was showing yesterday, that when you have intellectual property rights, basically what you are doing, you are favouring the market for technology. Because some of the smaller firms, which actually cannot gain rents by going downstream, they can actually indeed gain rents by selling their patents. We are not arguing that this is the only effect of the patent system that may be drawn back to that. But what our research suggests is really that the intellectual property right is helping these firms relatively more than the large firms. Because the large firms have many other means to appropriate the rents from the technology. By contrast, when a small firm has a technology in a regime of weak property rights, they feel impelled that in order to gain the rents they have to go downstream. Because that's the only way they can actually gain the rents. By contrast if there are intellectual property rights around, they do not need to go downstream, they can actually sell the patents and making the rents by selling the technology, rather than embodying the technology into some of these downstream goods. This has been in some industries, I am not claiming that this is a universal statement or a universal result. In some industries, in some areas this has actually proven to be an important phenomenon for creating a sort of vertical specialization. We have many examples of small firms, which have actually tried to go downstream and this was very inefficient, because they were unable to cope with the capital cost or with the managing of the downstream activities. By contrast, with intellectual property rights they sold the technologies to companies, which have comparative advantages in making the large scale developments and so on, that the system had some interesting applications. But again, as Dominique was pointing, there's very little data on this and I would really like to see more data collected on the knowledge flows on the technology flows across firms, across countries and potentially through the users of patent data sets.

Manuel Desantes: Briefly, I would like to state that we are extremely excited and worried about the issue you have just mentioned. When we look at our left, pre-filing, and when we look at our right, post granting, we realize that we are not the masters of the game, first. But second, that we could do

something. And so, our question is first, to understand the system as a whole and then to be able to agree on who is doing what in the most effective way; and second, to see what our input could be. Certainly we not only register patent, but also licenses and you can see everything on the net. Our databases are pretty good. So the data are there, but we are not responsible and we don't have the competence and we don't have the possibilities of interpreting them or studying them, but they are there. So the question now addressed from you to us is, in what way could we provide this data. Perhaps in a more effective way, in order to be useful, because certainly Europe is been lagging behind dramatically on the license and transfer of technologies. The very reason is not that we don't have data. One of the very reasons in my view is that we don't have a system; we don't have a community system. Let's be for real. The European Patent System is not more finally than a bundle of different patents. We do need a community patent system in this continent. Not any community patent system, I don't know whether the one that's going to be proposed will be a success or not, certainly not, but we need very urgently one procedure, one application, one patent, one single effect. And then, this is true, we can talk about differentiation, about different products, one community system, one trade mark system, one design system, why not, then we can differentiate also on the effects, but we need one community system. Sometimes, and I finish with this, sometimes we are accused of bombing the community patent from the EPO. This is just not true. If there is someone, who is actually fond of a community patent system, it is the EPO. Sometimes I wonder whether we are much more fond of it than the European Commission. Not at any rate, but we do need such a Community Patent System. And then we will start catching the pace with the Americans.

Michael Lehmann: Let me follow up and say, we also need one harmonized, even worldwide harmonized procedure law, how to attack infringements. If you look into the European patent system, you don't only have a bundle of different patents, which are harmonized, but if you look into civil procedure law and those questions, cease and desist, injunctive relief and so on, there is still the biggest diversity. The diversity between the American patent law and the European patent law "first to file / first to invent", is nothing in comparison with those procedural law issues. And if you look into American patent law, the area which needs a reform, an immediate reform in the United States is the procedure law. Can you imagine that a jury of 12 laymen, at least in first instance, is deciding about the validity of a technical invention, biotechnology? And you must pay for that, in court, every hour, the lawyers and patent attorneys, they are billing hours and hours, and in the end, even if you win the case, you have no costs' recoverage, maybe you have defeated an infringer, but you must pay your own lawyer, which is for our European understanding a failure. But it changes, changes the whole system. Small businesses simply cannot afford in the United States certain patent litigation. So you have a nice patent, but in reality it's nothing worth.

Brian Kahin: Just a quick remark. We do have a contingency system in the US. So for the small company suing, you have that option as a small company, you don't have that kind of option as a defendant.

Michael Lehmann: Only in some states.

Brian Kahin: No, it's true; it's true pretty much everywhere.

Dominique Foray: Ok. Now we are entering the last 10 minutes, I'm afraid. I would like to move to Jenny for not a long time, I'm sorry, but we have here a very good practical case, which is kind of economic solution about a huge very important problem and as we understood this morning, this is not only a policy recommendation, but really a practical implementation of the idea. So, in a sense that meets the criteria you mentioned, you say Prof. Desantes, that we accept to move, but we want to know how, where etc. and this was a good example of that. So, Jenny could you say maybe two words now, what's the next step for you? Where are you in this implementation crusade?

Jean O. Lanjouw: Yes, I won't take many more than two words, but maybe a couple more than two. So, I just put that up on the panel as a kind of a case study, I think, so let me treat it in that way: whatever I say is really very specific to my own experiences. I had this idea about two years ago and it came out it was covered in the "Financial Times", in the "Washington Post", in the "Wall Street Journal" and so on and about two, almost two years ago and it was all around. So, let me just, I just want to make one comment that relates to something that Adam stressed earlier and has come up again on this topic about how research can influence policy. Because it's a part of this, what I would call a very deep learning experience that I've had over the last year. I've thought a lot about the problem of how economic thinking, in particular from me, but how academic thinking can actually feed into the policy process. And I think it is certainly one element of that is, what Adam was saying, is that the research community needs to take a greater responsibility to make efforts and try to translate that what it does into a language that normal people can understand. And that's actually I think an extremely difficult job. In part, because it's simply hard, but also because there are very many different kinds of normal people. And the way you need to describe an idea or research to a lawyer, given their backgrounds and their thinking is extremely different from the way you have to explain it to somebody in government, to somebody, who's public health specialist, to somebody, who's your mother's friend. All of these people have different mental constructs and they have different vocabularies. And so, it's a very difficult job to try to explain research to regular people. And I think, at least this is my own experience, but I think in a certain way to it effectively you almost have to have a very concrete reason for doing it. I'm not sure that we just can sit here and say: "Ok. We're going to write two papers. We're going to write the technical paper for the economic journal or you know the Law Review and we're going to write this other kind of easy one that goes out, you know, to general people." Because I don't think people read that stuff, I

don't think that effectively communicates them. This works, when you the researcher really thinks you have something to say. And you have a real group of people that you really want to say it to. And you're not only writing it at one time, but you write it at a bunch of times for all these audiences and then it's more than that. Then you have to talk. You have to go out and actually talk to all those people. And you give talks to all the different groups of people. And in the process of doing that you figure out that what you thought was communicating to them actually was failing dismally. And it's a whole different way you have to talk to them. And you'll also find out about what problems there might be in what you're saying to. So the whole thing about learning from the practitioners, I think, you do naturally want to have something you're trying to communicate to people. And anyway, so I think this is very difficult and it's very interesting. So, I would encourage you all to do it, because absolutely fascinating, but you have to be very stubborn. So you need to have some research that you are doing, you think you're solving a problem, you think there's some way of improving the world and then you have to go out and really try to get it across and that's, it's a slog. It's not obvious, where you get rewards for that, although I think you do in the end, at least I believe that to be true. I will say one other comment, then I will stop, which is along the way one of the things that I found most disappointing in fact has been the role of people in a sense like us. I've learned that all of the deep and dirty things you thought about politics are true, all of the evil things you've ever heard about firms are true. I think they are very understandable most of them, so I don't actually think of them as evil, but all of them – a sort of background mechanism, you think might be going on, are. But that didn't disappoint me exactly, because I thought it's kind of there and I always knew that it was there, but I hadn't actually experienced it. But was has being disturbing to me a little bit is that surprising degree of self-censorship that goes on amongst people like us, who weren't exactly directly involved in the debate, but you know in a sense it's somebody new and innovate of ideas that come along and it has to be groups like us to think about them and talk about them and play around with them. What I've run into more than I would have expected is people saying "is that feasible yet". You know that already in a sense this is happening and a kind of reluctance to really engage on things that are already happening, because they're being supported. You know I say that's disappointing of course, because that's frustrating, but I think there's also something a bit dangerous about that in terms of stimulating new ideas.

Dominique Foray: Thanks, Jenny. Any kind of quick short reactions, comments on these thoughts? Ok. So I will now move to the last issue, which is a summary of the panel. Please, Brian.

Brian Kahin: That's what we've been emailing about last week and actually what I ended up focusing on as the panel spoke was, actually goes right of what Jenny was talking about, so let me extend a bit on that, if I may, and then I can be specific in one direction. And that is, what we are really talking about here, what Jenny was talking about, is capacity

building. Particularly on the research side and what we've heard from the EPO is capacity building on the institutional side. Ultimately one would hope that these two would meet, that they are heading from opposite directions over the same territory. And these are some of the examples that have come up from time to time here; of course, importantly enhancing the statistical base, the intellectual infrastructure for doing research on the patent system; a systematic understanding, building on the existing literature in a way that allows for intertemporal comparisons or interindustry comparisons. I think particularly the need for doing qualitative research on the industries before you can do quantitative research, because we've discovered that this environment is terribly complicated, because of the variations on practice. So, you have to understand the structures and industry dynamics before you can properly do surveys. Cause – I think there's a lack of literature on the cause and what I was able to provide comes from the patent bar. There has been very little independent academic research on the cause, although you have the research on benefits. Importance of getting new concepts out there – yes, there were patent thickets in the 19th century, but they weren't identified as such. When you have a concept you can at least begin talking about the different variations on it and how it might be formally identified and how you might start to gather data about it. And finally, signalling an engagement, which is what Jenny was talking about at the end, I think that it is extremely important, that goes to my point about: economists should speak in these political processes; they should at least get yourself known. I mean, I didn't get any responses from economists on my comments, but I got quoted for a couple of pages in Larry's (?) book. That's good exposure: gets the ideas out there. Not where I expected to get attention, but it was a bonus. So, you know, vents like this and that's singular engagement, that comes from both directions and that's wonderful. A few more comments on the institutional capacity building in the US – there isn't any going on, it's ad hoc task forces. This is partly a limitation of our very mature bureaucracies. This staking out competency to do it properly has to have an intellectual dimension. So, there is an opportunity with the flaks in the political situation in Europe and indeed in the international situation for engagement with economists, that could be very productive and particularly the focusing on results, away from process, because there's plenty of focus on that, but on results. So, accountability and you need statistics that are official statistics that are collected at an ongoing basis as a function of the government or the international agency. That's all I have to say about capacity building. In terms of practical strategy and I do derive this from the general discussions as well as the panel discussion here, it seems to me that there are two persistent themes that come together. That is “one size fits all issue” and the “inventive step”. I think that an easy step towards trying to understand the situation would be to survey different industries. Maybe you start by just a few, a handful and ask specifically: is the level of inventive step set right for your sector? And I bet you'll get a lot of variation on that. My own theory in terms of policy recommendations, which we haven't expressed here, is a lot of problems would go away, if the standards were raised by at least an

order of magnitude. Then you resolve a lot of these information pollution problems and you might actually get people to read patent. Most importantly, from an institutional perspective, you can get the leaders in the industry to take a stewardship interest in the patent system and how was affecting their industry and not treat it like something to be turned over to patent lawyers, because they don't understand that.

Dominique Foray: Thanks very much, Brian. We are really quite to the end of this panel, but I will let you the chance to give one word, but it is not compulsory. So, Dominique? No, it's ok. Adam, two words: bye, bye.

Adam J. Jaffe: Thank you.

Dominique Foray: Ok, that's very nice. Jenny?

Jean O. Lanjouw: I can do, thank you, also.

Michael Lehmann: I'm very glad that the EPO hosted this conference. I think we need more interdisciplinary cooperation, between lawyers and economists and not only the Chicago School showed us how law and economics can come together. I think we need real cooperation of good trained economists, who know something about the patent system and of lawyers of course, who also understand some economics. Thank you very much.

Dominique Foray: Thanks very much. Prof. Desantes, you have the last word.

Manuel Desantes: Thank you, Dominique. I would like very warmly to thank you, all of you, thank you EPIP. Thank you mainly not only all of you here, but all those public servers. I have organized many meetings like this one, I know very well that it is not possible, if you don't have a very very good bunch of servers, let's say very good professionals on the other side. So I think that we also thank them very much. I guess that perhaps for the first time you have met a bunch of professionals, belonging to the EPO, who certainly are not members of a machine. We all have tried to transmit to you clearly, that we are public servants, trying to understand what our future should be. We are a bunch of professionals, mainly very good professionals, I have to say, who are trying to understand that we are not the system, but we are part of the system and that by being part of the system we have to understand the whole system right and left in order to be as useful as possible. That's why, and Brian said before something about the difference between the USPTO and the EPO, I guess you have arrived at the conclusion after these two days that there are certainly some differences. One of them is that we do understand that by going to the rest of the world, promoting development in the rest of the world, we promote development in Europe. Another one is that we do understand that by using professionalism and granting quality products we do serve the interest of Europe. That we do believe, as you've said before Michael, this is our treasure, having 27 member states. This is something the United

States certainly does not have. The possibility of setting up a fantastic network with 27 member states and 27 national offices, where each one knows what the rule is and where they create synergies among each other. Finally, we are convinced that we have learned a lot from you during these two days. There's nothing better than learning from those who teach, and those who teach are also able to learn from us, and we are also convinced that you want to learn from us. So, that's why I would like to finish, Dominique, with those ones, who have some suggestions, some very very practical suggestions this time. You know, we could work in a very practical way with EPIP in the future; for instance establishing databases on different research fields. We could also provide you with a list of the fields we are very interested in developing, trying to foster you different teams here and there focusing on these sectors. We can also cooperate with you in adding the name of the EPO and the interest of the EPO to those issues in order to get funds here and there – both public and private funds. We can also provide the possibility of not only establishing common groups examiners, I should say EPO staff more than examiners and members of EPIP, also having people coming from the different universities for some time within the EPO. I'm convinced that my colleague Ciaran McGinley will fully agree with me that we have that line we would like to follow very closely with you. I'm convinced that these two days are just the beginning of a much closer and fruitful cooperation. Thank you very much.

Dominique Foray: Thank you very much to everybody. Dietmar of course has to close the conference.

Dietmar Harhoff: Well, thank you very much and again my thanks to Dominique for moderating a very very instructive and intriguing panel discussion and thanks to all of the panel members of course as well. The hidden agenda behind doing this first EPIP workshop here has already been revealed quite nicely by Michael Lehmann. It is bringing people together. It is bringing economists, legal scholars, practitioners of the system together, so that they can discuss what fascinates us IP, intellectual property, which many of us link with very positively interpreted terms like ingenuity, creativity, greater welfare for people all over this globe. I think it's a very rewarding topic and I think that in the mixture of backgrounds, sciences, experiences that are represented here, we can make some real progress. So, I very much welcome your suggestions, which sound all very fine to me. And we should take them out. And we tape, by the way, everything.

Let me do one logistical comment, which has to do with the taping and also has to do with Brian's comments, one word that was not on this communication, but you meant it and we want to communicate the results of this workshop to a broader audience. So, I would like to ask all of you, who had sent in papers, presentations and so forth to send us as soon as possible the most recent version, if you have an updated version and so forth, so that we can put that on a CD-Rom, which will be made available to the European Commission, but also to a broader policy audience. Because we want the results of these discussions to

come out to a broader audience so they can take note that something is happening here. In Michael Lehmann's terms we want to make it available; to take care of the new copy right law. The second logistical comment: when you walk out of this room, please put your badges into one of the boxes that are down there. That is all of the logistics I will expose you to.

I would like to thank, finally, all of the presenters, the discussants for their contributions here and also the chair persons of the various sessions that we had. I would like to thank the audience, the people, who were not on the panel or in the presenters' seat or in the discussion seat, but who have contributed and especially the practitioners here from the EPO. I think you brought in a very special contribution and I very much appreciate that. I would also like to thank my team, people who have been in the background and I won't name them all, but I will do that next week, for supporting this particular event. And last, but not least, I would like to thank again the hosts – the EPO, Manuel Desantes and Ciaran McGinley for helping us to organise this and a special thank goes to Peter Hingley for supporting this in a wonderful way. Thank you, Peter. To all of you – safe travel back home and I hope that we will have many more of these meetings. Thank you.

Oh, excuse me. These are not the Olympics, but we will now pull the Olympics theme, which is that Dominique, who is the ring leader of EPIP, will transfer the keys or the flag or whatever it is to the next guy, who does the next organization.

Dominique Foray: Exactly. So the next conference of EPIP will be organised by Pierre Mohnen and MERIT in Maastricht. As I told yesterday, the pass to Santiago is a very difficult pass and so we have to go to the north of Europe. Jacques for example is starting to walk to Santiago now and we will get some news from him. Thanks very much, and I want to thank finally Dietmar for all this local organising. Thanks Dietmar!