The Promise and Perils of Medical Nanotechnology

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General Introduction

First, I want to thank the organizer: the University of Arizona, the State Department, my own Colleagues and all the participants.

You do not expect me to explain to this distinguished scientific audience what Nanotechnology is. My comments are oriented towards public policy making and do not pretend to be exhaustive; I will only refer to a few aspects which seem of direct relevance to the current event.

Firstly, a few comments on what the European Union and European Commission are doing in the area of Nanotechnology, then I will present a few thoughts on some aspects of the EU – US policy challenge in the area.

I. European Policies

The EU policies are presented mainly within the following key texts:

1) Communication of the Commission 2004: "Strategy";

2) Communication of the Commission 2005 "Action Plan" and;

3) The 6th Framework Programme on Science and Technology as well as the 7th Framework Programme which is now proposed.

One can find, in these three policy instruments, orientations on very important aspects of the EU policy in Nanotechnology. These include issues such as support to research, coordination of research, EU Members States coordination, interaction with non Government actors, innovation promotion, industrial development, poles of excellence, best practices, information exchanges etc.

I would make a few comments on some of these aspects which have particular relevance for the workshop.

First, The recognition of importance. The first step of any successful policy making is the correct recognition of the importance of the issue. There is a very wide recognition that Nanotechnology can bring about revolutionary changes in virtually all technological fields. Nanotechnology has the potential to become in the future as important as Information Society, Telecom Communications and Biotechnology are now. US sources estimate that the Nanotechnology will represent 1 trillion dollars of the total industry by 2015. The European Commission's Communication indicates that market is expected to grow by hundreds of billions of Euros this decade.

Second, NanoMedicine, which is our theme of today, is the application of Nanotechnology to health. There are extremely high expectations for spectacular scientific breakthroughs including treatments of very serious illnesses like cancer, AIDS, and diabetes. It should be stressed that NanoMedecine is not only a promise for the future; already, there are significant applications of NanoMedicine in Drug delivery systems, Diagnostics and Regenerative medicine.

Third: Research, funding and funds allocation are always a very powerful expression of political priority. At EU level, the European Commission research projects portfolio in Nanomedicine trespasses already €250. Also, several EU projects are already supporting numerous assignments concentrating on highly important issues of toxicity and risk assessments. The amount is about 10 percent, roughly €25 million, of the EU's total budget. The abovementioned resources do not include funds from the EU Member States and private sector.

Fourth: A discussion panel, stimulated by the European Commission and led by industry, has set up a wider government and non-government coordination. It has already produced the "European Technology Platform on NanoMedicine" which has elaborated a Vision document in which experts present the needs and possibilities of Nanotechnology until 2020. In summer 2006, it will deliver a "Strategic Research Agenda" with key advice for the 7th Framework Programme.

Fifth, in this EU Policy Framework, and also in the emerging public debate, we find expressions of worries and preoccupations. Just to name a few concerns: ethics, potential risks, negative side effects on public health, environment, safety, consumer protection, appropriateness of existing regulation and international dimensions of the above

Finally, there is also a specific worry for Europe concerning the need to avoid another version of the "European Paradox" where the Research and Development

strengths of Europe are not translated into industrial innovation and competitive advances for the European industry.

II. Challenges, Expectations and Concerns

All the above are huge challenges that need to be tackled from the standpoints of both science and good governance. All the above are key challenges for public policy making in the EU, in the US and in the transatlantic relationship.

A few things that we know and we share:

• There is no agreement on either side of the Atlantic whether existing regulation is sufficient. Some are convinced that new regulations need to be crafted urgently and others argue passionately that it is not necessary. However, I have seen nobody arguing that no regulation will be needed in the future and we can assume safely that this will be the case as the knowledge increases. In other words, the challenge of appropriate regulation is already with us and will be with us with an increasing intensity.

• We also know from the agriculture biotechnology and nuclear power that public support, or at least tolerance, is absolutely needed in order to materialize the industry's potential.

• Furthermore, we are aware of the differences that exist in public opinions in the EU and in the US

• Another thing that we know is that over-regulation can hamper progress and under-regulation can bring disaster such as the loss of public confidence.

• We also know that divergent international regulation creates trade barriers and market segmentation which is not in the interest of anybody.

• How do we handle these challenges in the EU – US relation? We are only starting. In fact what we do, is a small part of what we need and what we can do in the long-term.

III. Transatlantic cooperation

This is a typical EU – US relation, it has the key elements of many challenges that we have to handle in the transatlantic relationship which can be summarized as follows:

1) A strong element of competition, at the level of industry and at the level of research.

2) Strong agreements at the level of fundamental concepts and values: directly agreeing that we need free and open markets, fair competition, strong ethics, maximum consumer protection and environmental protection.

3) However, there are significant differences within these shared values. There are different sensitivities, different emphasis on different aspects of our common values and there are cultural differences. For example, there is clearly, historically, a higher risk of aversion and precautionary attitudes in Europe.

4) Nevertheless, at the same time there is a huge, solid ground of overwhelming common interest.

Thus the policy challenge is to allow competition to prosper, give it the best possible framework, manage and control differences by anticipating them if possible before they become uncontrollable and cause damage. The core responsibility of policy makers on both sides is to make sure that we are able to build on the positive side of our relationship and successfully serve and promote our fundamental common interests.

In the area of Nanotechnology, the elements of common interest between the EU and US are obvious. We have an obvious interest to develop cooperation in research, innovation, industrial development and probably above all in regulations. At that level it is important not to forget how important the EU – US actions and decisions will be for the Global Regulatory Framework.

IV. Basis to build upon

We have a good basis to build upon and construct a constructive interaction. The commitment of the EU, as it is well summarized in the Communications of 2004 – 2005, is a clear commitment to respect international norms including WTO principles and to promote more international cooperation. We made the proposal of an international declaration on a Code of Conduct for the responsible development and use of Nanotechnology. We believe that this is an area where cooperation and rules making should advance actively and globally. Of course EU – US interaction remains key, when considering the size of the two partners, but we should take into consideration the interest of other players.

The EU – US Summit Declaration in June 2005 recognizes and promotes the models of research and development and recognizes directly the area of Nanotechnology.

The overall good and positive dynamic that exist in the transatlantic relations attest of the strong willingness to build an increasing cooperation in all possible areas.

The specific good interaction and cooperation with the Department of State in the area of Science and Technology has been illustrated by the series of conferences, including the current one.

Conclusion

We have a lot to do in the area of Nanotechnology. We have made a good start and there is certainly a lot of good will from both sides as we can see within the current forum. We have a lot of common interest and we have a lot at stake. The formula of EU – US coordination at an early stage used in this workshop is in my opinion excellent for the specific circumstances in this specific area but it is also an example of what we should be doing more in the Transatlantic Relationship. We need to intensify our interaction, develop our ability to talk and even think together before action is taken and before positions are fixed.

I want to finish as I started: to commend those who have worked and made this event possible on the EU and on the US side. I wish all of you well and success to this workshop.