We had, in the three thematic sessions, dedicated to health, environment and transportation, very interesting concrete examples of concrete applications of sensor networks in a wide variety of situations. The actual experience with complex and very innovative applications and the knowledge amassed around the table from many regions of the world were throughout the meeting quite impressive. Clearly, we have come a long way in this area in recent years. Technologies are mature, but still evolving quickly, but they are fragmented in such a way that scaling up, interoperability and horizontal standards common to several important applications are unsolved issues.

The area is extremely complex, due to the variety of applications and their technologies economic and social implications, which require specific considerations for particular applications and a fully interdisciplinary and multistakeholder approach.

It has been suggested that a natural way forward would be to consider a few, four or five application areas, with technology commonalities, for which horizontal requirements could be accepted for advancing in the direction of enlarging the field of applications with common technological solutions and standards, instead of trying to develop standards for all possible applications of sensor networks, which seems to be an impossible task right now. This pragmatic approach has also the advantage of avoiding locking in to particular technological solutions and standards adopted for each particular applications that may be too narrow and may result obsolete a few years from now, and of providing the grounds for generative innovation. We are presently seeing the proposal of large scale projects in situations like the "Future Internet", and avoiding locking in to particular now-a-days technological solutions that may hinder innovation later on is advisable.

The need to involve users and consider user concerns in the project development phases seems also to appear in many of the applications that were presented in all the three thematic areas.

Privacy and security concerns need to be continuously addressed and it appears to be rather common in the examples presented that these concerns have not been built in throughout the design process as they could have been. This is especially clear with personal health information systems, but it is also the case for many of the other applications that were considered. It is of course true that a wise balance between *a priori* privacy and security requirements and providing ample room for innovative solutions is necessary, but the overall impression is that in several of the applications a better balance could be attained by incorporating privacy and security concerns earlier in the project design.

Sustainable business models are in different stages of viability for different applications.

Sustainable business models are developed and clear in industrial applications, both in production and logistic settings. This is also the situation regarding health applications related to the operation and logistics of hospitals.

However, in health, when we come to people centered applications like in personal health information systems, a sustainable business model appears to be lacking, as the economics of it are more related to decreasing the need of having patients in hospitals or of ambulatory care which are also the areas where higher potential savings can be foreseen, as stressed by the moderator of the Health and Elderly Care Session, Elettra Ronchi. Since the benefits for this are medium to long range and are truly effective only if they are aggregated at the scale of many people, building sustainable business models seems to require some sort of aggregation of demand, in particular by involving as early as possible in the process the main aggregated investors in health systems, namely major health insurance companies and governments with national health systems. The possible role of each one of these components changes according to country, but their combined presence is widely common.

In applications to environment protection, where the benefits are mostly seen as a public good, business models have to involve governments and environment concerned civil society organizations for building up investment frameworks (and PPP – Public-Private Partnerships certainly have a role to play due to industry interests in developing the necessary technologies). But there is also the need of involving these entities in regulatory measures, as certain requirements introducing costs to environmentally aggressive

activities in specific situations, due to their costs for the whole society concerning negative impacts in a public good, may allow decentralizing demand and building up a dynamic market for innovative environment protection technologies.

To a certain extent, this same remark applies to transportation applications, as well as to energy efficiency applications that were not explicitly considered in the chosen thematic sessions but are very much related to environment and transportation problems and are also a major challenge, though in these areas a component of individual convenience and economics also have a role.

Risk and liability issues were not much discussed, but they certainly need attention in several applications, in particular in health and the environment.

To conclude, I thank all the participants for their interesting, committed and frequently passionate interventions. I am sure the impressive amount of knowledge and hands-on experience around the table was very enlightening for all of us. I also thank the fantastic work of the OECD Secretariat involved in the organization of this conference, both before and during the meeting as successful occasions like these always require a lot of expertise and committed work. Thanks also to our host, ANACOM, the Portuguese telecommunications regulatory authority for all the efficient support to this conference.

I would also like to stress that, although the complexity of the issues in sensor networks applications seems overwhelming, we have reasons to believe that this area will evolve very quickly. So, the fact that the problems are difficult and require more knowledge cannot lead to postponing addressing the involved issues in the expectation that problems and solutions become more clear with time, but rather to put more effort in organizing it and clarifying policy avenues with a sense of urgency.

Lisbon, 9th June 2009

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