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Connected Science for Society: A Key Enabler for Disruptive Innovations

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Advances in Nanotechnology and Advanced Materials have played a profound role for the last few decades development of the modern society and it has paved the way for the present Digitalization age. Further developments in combination with AI, VR, Big data and Quantum Computation, will in the next decade be a major driver for disruptive innovations in various verticals as well as an effective tool for fostering the meaningful utilization of knowledge for a meaningful and sustainable global development.

The digital economy is transforming the science and innovation landscape allowing participatory rapid diffusion of knowledge, competencies and capabilities paving the way for effective and meaningful deployment of knowledge. The explosion of IoT-products, massive data and sharing economy services are mega-trends of today's society and the immense interconnectivity change modern society in a pace never before being witnessed. These major societal developments challenge society. And these changes foster disruptive innovations. A key for such changes is the increased and participatory dialogue in society. This trend is clearly seen in the European funding policies becoming more aligned to mission driven perspectives.

Vacuum Science & Technologies have enabled the emergence of a number Key Enabling Technologies (KETs). These KETs will make solid contributions to the grand challenges of today, such as sufficient sustainable energy supply on demand, clean water to everyone, novel e-health solutions with impact on the growing ageing population multi-sickness panorama and life-styles diseases etc. Solutions to these challenges demands increased transversal interdisciplinary participation. Not only transversal within the Sciences but also transversal in all kind of societal dimensions including an increased empowered participation of people.

There is a need for an increased effort to effectively close the gap between societal needs and science & technology offers. The basics for science is curiosity - in the past mostly related to understand how things are related or how things work and nowadays more and more related to missions.

Finally, in order to fully tap all possibilities offered within the Key Enabling Technologies there is a continued need to put emphasis on transversal funding support schemes. If not, there is a risk that the enabling character of inventions will either disappear or take very long time to diffuse into other verticals, effectively hampering the innovation capital to be fully exploited.

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