

**Symposium
Converging Technologies**

27/05/2014, Vienna

*Institute of Technology
Assessment (ITA), Austrian
Academy of Sciences
(ÖAW)*

*Austrian Ministry for
Transport, Innovation and
Technology (bm:vit)*

*Austrian Council for
Research and Technology
Development*

Abstract

In the mirror of Technology Assessment: Converging technologies as a means to an end

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Over the last fifteen years, the term "Converging Technologies" (CT) has become a buzzword in research and technology policy circles as well as in some media. At the core of the new concept are relations, synergies or fusions between broad fields of research and development (R&D), such as nanoscience and -technology, biotechnology and the life sciences, information and communication technologies, cognitive science and neurotechnologies. Robotics, Artificial Intelligence and other fields of research and development (R&D) are also taken into account in the discussions.

This development can be traced back to a 2001 research and technology policy event in the US which has often (and, in a way, mistakenly) been regarded as a major official US policy initiative. This so-called NBIC initiative (nano, bio, info, cogno) put emphasis on the aspect of "improving human performance" and, in particular, on the issue of "human enhancement", i.e. the technological augmentation of human capabilities and modification of human corporeality and intellect. Despite reservations about the strong military focus of the NBIC initiative, other aspects of the concept resonated strongly in other parts of the world, including Europe where the European Commission set up a High-Level Expert Group: "Foresighting the New Technology Wave".

After a short period of intensive debate, not least in philosophical, STS and TA circles, CT appeared to have lost broader political attention and almost vanished from research agendas for some years. It kind of re-appeared earlier in this decade, supposedly due to advances in neurotechnologies, HMI and robotics, an emerging trends towards self-measurement and self-optimization, and changing public perceptions.

In this contribution, we want to resume the TA debate on CT and start with a reflection on CT as a science political term with a high resonance in the media, especially its technology-driven, vision-oriented branch including the developments aiming at all kinds of human enhancement. In the second part we want to refer to CT as a technology in concrete contexts of application. Here, CT's are assessed – as technology in general – as means to an end referring to criteria for new and emerging technologies. As the human enhancement debate became most prominent in our perspective, we will finally explore and discuss CT with reference to the exemplary case of humanoid robots. We will do this in a twofold way: as a sample of "potential prostheses" curing or improving humans and as a technology that might replace humans.