Artificial Photosynthesis - Developing Technology Futures

PD Dr. habil. Marc-Denis Weitze
acatech - Deutsche Akademie der Technikwissenschaften
TUM School of Education
Technische Universität München

In Germany and other countries, new technologies have been dogged by public protests and controversy, owing to concerns about the perceived dangers and impact on the world as we know it. What some people see as technological progress is rejected by others as unwelcome change or meddling with nature; where some see opportunities, others are more concerned about the threats.

But how can the use and the development of new technologies be shaped as part of a comprehensive process of developing consensus on scientific requirements, interests, values and preferences, taking into account all interested groups in society? Looking for acceptance ex post is not sufficient. Marketing campaigns did not prove useful for gaining acceptance (cf. gene technology, nuclear power).

In order to ensure the successful roll-out of technology-based innovations, it seems appropriate to engage in an early dialogue with civil society and other interested parts of the public. So far, a lot of approaches have been developed: Upstream engagement, Dialogue with Citizens, "Science with and for Society", ...

Here I report on an approach of creating and assessing technology futures. Whereas in former times, people tried to predict the future (singular), today we think in terms of a series of alternative futures (plural!), i.e. concepts and ideas of the future development of technology and society. Technology Futures can be created by scientists (e.g., model-based scenarios, Delphi-methods), by artists (e.g., science fiction novels) or by parts of the public (expressing wishes, expectations, and concerns). These technology futures can combine different forms of knowledge; they include assumptions and value judgments. Creation and assessment of technology futures (are they likely to occur? desirable?) can perform a series of functions in society: They can influence strategy of research institutions, orientate political decisions (e.g., about funding) and fuel public debate.

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