Can technologies save the world? They can change it.

Technology has been almost always designed to support human activities in extreme, dangerous or repetitive conditions. So, technology has "helped" the humans but not properly aimed at getting them better. It is difficult to describe what does it mean "make a human better"…but we all know that some technologies can impact dramatically on social needs and behaviors.

In the list of technologies that at the moment are addressed as the next generation impacting on the socio-economic, and maybe political, system, we found some which are already available but not yet broadly diffused. This is the case of 3D printer, which can completely change the production system towards a decentralized one, reducing distribution of goods. Cybernetics, autonomous vehicles, smart materials and energy accumulators will definitely and largely impact in the near future, reducing as an example many human efforts but, at the same time, control by individuals.

In practice, any change has its pros and cons. Indeed, it is interesting to understand how a technology is developed and absorbed.

The evolution of a technology from a sort of embryonic state to the market passes through different phases. These phases are technically named TRL (technology readiness level): from the idea (TRL=1) to the demonstration in operational environment. The possibility that good ideas are not fully fledged and transferred towards used technologies is not remote: sometimes it is difficult to hunt an idea, to evaluate if it is promising, if the industry is capable or willing to developed and last, but not less important, if the market is ready to accept it.

This means that there are two main challenges to tackle from an idea to the market: how to facilitate the proliferation and selection of good ideas, how to make them grow, reaching the necessary critical mass in order to impact on the society.

In Europe, but not only, different methodologies and instruments are adopted to support the evolution of TRL towards the market. The missing and largely vague aspect is: hunting ideas and make them grow! That is: how scouting them efficiently? How to select the feasible and impacting ones? How to attract and reach the necessary resources for the development and diffusion?

The European Commission has identified different instruments and programmes to facilitate the process towards the deployment of impacting technologies. Funding bottom-up breakthrough ideas (ERC), their proof of concept towards market applications, supporting top SMEs and, particularly, funding projects aimed at developing future emerging technologies in their different phases (FET Open, FET Proactive, FET Flagship).

Two main big projects on future emerging technologies are nowadays running at the European level, focusing on graphene (a form of carbon) and the understanding of the human brain. These two can access to approximately one billion euro in seven years from EU Member States. The next challenge will probably address the quantum technologies, whose application will impact at least on security, communication etc. (see "Quantum Manifesto, a New Era of Technology").

If then the challenge of communication under the sea will be solved, huge opportunities for the exploration and exploitation of the seas and oceans will be faced, probably comparable to those offered by the conquest of Space.

Forward looking for possible applications of a technology is not an easy task, especially when they are developed in one sector and can be transferred in another. More difficult to predict the eventual social impact, when some technologies can drive collective behavior and needs, as the telephone or facebook did in the past. Sometimes, what was science fiction becomes reality.