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Future-Oriented Technology Assessment

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Abstract

The purpose of this paper is to reflect on the concept of Future-Oriented Technology Assessment (FOTA) as a particular form of Technology Assessment (TA) which is focused less on risk assessment and more on the innovation governance with regards to the emerging technologies. In the article the author describes a conceptual system comprising Future-Oriented Technology Assessment (FTA), Future-Oriented Technology Analysis and Responsible Research and Innovation (RRI). The deliberations are based on the literature review, bibliometrics and the logical construction method. The paper is expected to provide grounding for further research on the objectives, methods, stakeholders, results and best practices of Future-Oriented Technology Assessment. In the context of the rising importance of the Responsible Research and Innovation idea, Future-Oriented Technology Assessment is discussed as a potentially effective tool to pursue policy goals within RRI agenda.

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1. Introduction

The expanding borders of human knowledge and technological advances result in vast opportunities for a safer, healthier, cleaner and more meaningful human life. The same processes bring about known and unknown threats to sustainability, peace, health, justice, human rights etc. [4, 14]. Hence, the analysis (assessment) of emerging technologies from the perspective of the potential results of their implementation are critical in contemporary economies, societies and businesses. It has been widely accepted and understood that technology and society evolve in an intertwined manner. Diverse practices and tools have been developed and applied to look into the future shape of technological achievements and to understand – and most preferably anticipate – their multi-faceted implications.

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One of such approaches is Technology Assessment which may be briefly defined as a *systematic attempt to foresee the consequences of introducing a particular technology in all spheres it is likely to interact with* [2] or as *the systematic study of the effects on society, that may occur when a technology is introduced, extended, or modified with emphasis on the impacts that are unintended, indirect, or delayed* [3].

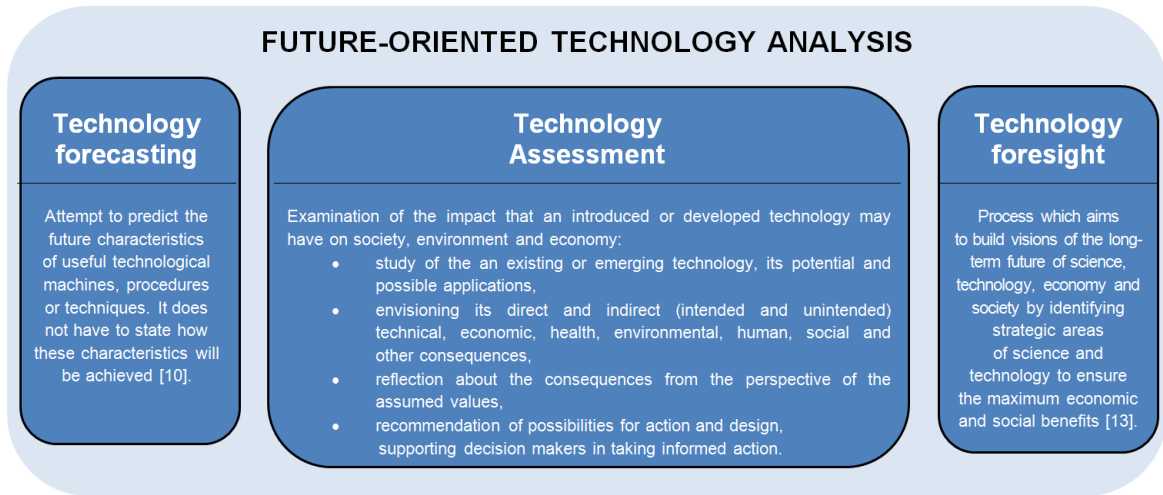


Fig 1. Technology Assessment as an element of Future-Oriented Technology Analysis (FTA)
Source: own elaboration in the basis of [6, 9, 14]

In Figure 1 Technology Assessment is integrated into the wider concept of Future-Oriented Technology Analysis (FTA) and is treated as FTA's analytical form along with technology forecasting and technology foresight.

2. Evolution of Technology Assessment

One may trace the origins of Technology Assessment in the 60s in the US. It was related to the endeavours of the Congress to establish an information gathering service independent from the Administration with the aim to enhance the democratic control over the scientific and technological progress. In the late 80s and 90s TA gained popularity in Europe where networks of institutions involved in TA were established.

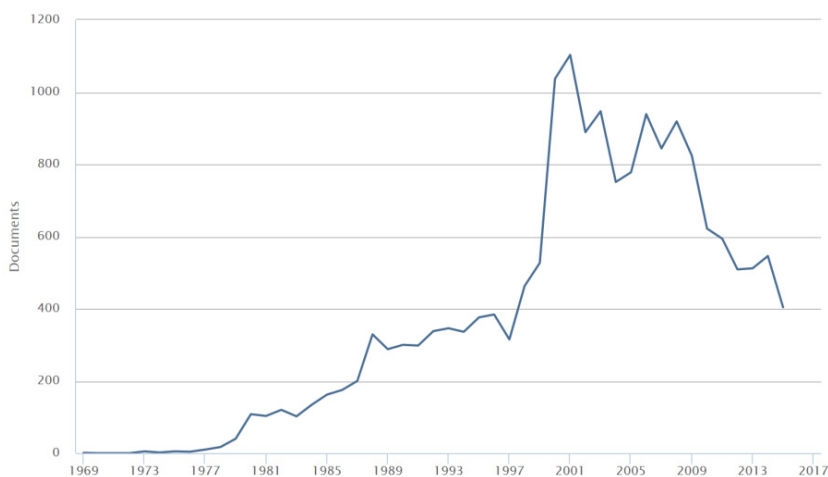


Fig. 2. Number of documents indexed in Scopus database with "Technology Assessment" as a keyword.

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