SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FAR FUTURE (D4)
Contribution of Space Activities to Solving Global Societal Challenges (4)

Author: Ms. Paivi Jukola
Aalto University, Finland

A THINK TANK CREATION FOR FUTURE STUDIES AND RESEARCH ON GAME CHANGING TECHNOLOGIES

Abstract

This paper discusses alternative strategies for decision making, and for marketing research and development for game changing technologies and space projects with the time line for long term development for the next 100 years, or thousands of years, rather than the usual long-term period of 4 or 25 years. The opportunities and challenges of the Planet Earth are complex and dynamically changing from limited natural resources to over population, from hunger to overconsumption. On the other hand opportunities from the space sector, such as novel sources for energy, such as Space Solar Power have not yet been fully explored. Is De-growth the only answer? The key question is: what are the key questions – when the right questions are found it is possible to find solutions to those questions. The paper proposes a multi-disciplinary think tank based on a mix of research methods for experts and public at large, such as Delphi studies. Delphi is based on the principle that forecasts or decisions from a structured group of individuals are more accurate than those from unstructured groups. The Delphi method was developed at the beginning of the Cold War to forecast the impact of technology on warfare. The initial contributions from the experts are collected in the form of answers to questionnaires and their comments to these answers. The panel director controls the interactions among the participants by processing the information and filtering out irrelevant content. This avoids the negative effects of face-to-face panel discussions and solves the usual problems of group dynamics. First applications of the Delphi method were in the field of science and technology forecasting. The objective of the method was to combine expert opinions on likelihood and expected development time, of the particular technology, in a single indicator. One of the first such reports, prepared in 1964 by Gordon and Helmer, assessed the direction of long-term trends in science and technology development, covering such topics as scientific breakthroughs, population control, automation, space progress, war prevention and weapon systems. Other forecasts of technology were dealing with vehicle-highway systems, industrial robots, intelligent internet, broadband connections, and technology in education.