

February 2005

Content

This Newsletter is dedicated Technological Foresights; what are Technological Foresights, which Technological Foresight projects have been made in Denmark, and information about the coming Technological Foresight in ICT

What are Technological Foresights?

Technological Foresight (TF) is a systematic effort to look into the future through dialogue and analysis of potential opportunities within science, technology, society and economy.

The goal of a Technological Foresight is to gain knowledge about where to allocate resources into a specified area to achieve the greatest effect. It is an input to politicians and businesses when making decisions concerning investments in an unpredictable future as well as a tool for strengthening dialogue between business and research communities.

There is not one correct method for producing foresights – the methods are diverse and they should be combined and tailored to each specific foresight depending on goal, stakeholders, budget, etc. Some of the more commonly used methods in Technological Foresights are: mapping, surveying and trend analysis, expert valuations through interviews, questionnaires and delphi studies, as well as scenarios, road mapping and multi-criteria analysis.

A Technological Foresight is not about predicting the future but exposing possible technological futures, which can be analysed, debated and shaped by active, systematic and forward-looking.

For further information about Technological Foresights and methods in TF take a look at: Risø National Laboratory, System Analysis Department – the research program for technology scenarios: <http://www.risoe.dk/sys/tes/index.htm>

Technological Foresight Projects in Denmark

The Ministry of Science, Technology and Innovation has been given funds to carry out Technological Foresight projects. So far Technological Foresights in the areas of Bio- and Healthcare, Nano Technology, Pervasive Computing and Green Technologies are completed and in progress are TF in ICT, Robots, Hygiene and Ageing.

Information about national Technological Foresight projects in Denmark is collected at <http://www.teknologiskfremsyn.dk>.

DIAS has participated in more Technological Foresight projects, one of them, completed in November 2004, was: Green Technological Foresight in Agriculture. The report can be found here: http://www.risoe.dk/rispubl/SYS/syspdf/groent_landbrug2004.pdf. This TF project used an expert panel, and through 3 workshops developed possible roadmaps for the environmental challenges and for the different relevant technologies, and came up with a number of recommendations for each technology. An important conclusion was that the future technologies should be evaluated and chosen in regards to their impact on the environment, production and scenic value (the agricultural triple bottom-line).

Technological Foresight in ICT

The Ministry of Science, Technology and Innovation has invited to a consultancy assignment regarding a Technological Foresight about future developments and application possibilities of ICT in the agricultural and food industry. The goal is to create an insight and readiness in the business trade and innovations system about the future possibilities and challenges that can be identified in the cross-connection between ICT and the agricultural and food industry. The analytical perspective is 5-10 years, and the consultants should:

- Survey the area of ICT in the agricultural and food industry
- Facilitate the TF, which is being conducted by an appointed expert panel
- Communicate the results of the TF during and at the end of the process

The deadline was 24th of January 2005 and DIAS has given an offer on the assignment lead by Head of the Research Unit Informatics and Decision Support Iver Thysen in Department of Agroecology. The other members of the consortium are: *Research director Svend Christensen (DIAS, Department of Agricultural Engineering), Professor Anders P. Ravn (AAU, Department of Computer Science), Consultant Jens Peter Hansen (Danish Agricultural Advisory Service, Skejby), Professor Peter Sestoft (KVL, Department of Natural Science), Senior scientist Søren Marcus Pedersen (KVL, Danish Research Institute of Food Economics), Director Lisbeth Munksgaard (Centre for Advanced Food Studies) and Director Peter Ploughmann (New Insight)*. The offer given has, besides the already listed aims, its focus on an analysis of the demands for ICT from the sector as an integrated part of the project. The possibilities for international co-operation will also be investigated.

The project proposes the use of a scenario technique called Systematic Variable Variation as a tool. Scenarios in this aspect can be described as a way to relate to the future, that is the uncertainty that is related to an unknown future. The method was originally developed by the American military in the 1950's as a strategic analytical tool. The process is built around repeated rounds of brainstorming on which factors and dynamics that could affect the chosen problem. Of all the suggested factors and dynamics those that range highest in uncertainty and importance are chosen and further elaborated. From this a matrix of four scenarios are made – four scenarios that should be seen as a total sample space for the future development. With starting point in the

matrix the subsequent consequences and possibilities for the chosen problem situation can be discussed.

Events

Dina/DaNet/DSJI Annual Meeting 2005 – for program and registration:
<http://www.dina.dk/itj2005/>

Topics of coming newsletters

Odour measurement and reduction technologies
Robotics in agriculture

