

"Transfer of scientific information to social groups: key factor  
in the implementation of technology assessment studies"

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## Transfer of Scientific Information to Social Groups : Key Factor in the Implementation of Technology Assessment Studies

In the last decades communication researchers showed increasing interest in science communication. The growing significance of the research field can only be understood as a result of the 'scientification of society' and the 'socialization of science'<sup>1</sup>. On the one hand it is undeniable that our lives are influenced and even channeled by recent developing scientific technical innovations. On the other hand political, social en cultural policy makers constantly need more scientific research in order to evaluate, control and plan the functioning of society. A new type of 'socially relevant knowledge' has appeared : service-oriented research; i.e. research carried out in order to provide societal groups or individuals with sources of information and knowledge that they can use within a wider political context, but which they are most often unable to generate themselves.<sup>2</sup>

Most important, is that the political agenda that has changed rather drastically too. This new political culture has among others been inspired by the following changes :

- The degradation of the environment which resulted in new political participation forms.
- The ethical dimension of new inventions and development.
- Unemployment and the prospect of permanent scarcity of work in the future which has led to the growing demand for the formulation of accompanying measures and alternative social visions.
- Science and technology as changing social relations and life in our societies.

As a matter of fact these changes are defining the scientific agenda today.

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<sup>1</sup>KATUS, J. & WIEDENHOF N. Wetenschapsvoorlichting : achtergronden, theoriën en praktijken. Amsterdam, Intermediair, 1980.

<sup>2</sup> NOWOTNY, H. & LAMBIRI -DIMAKI. The Difficult Dialogue between Producers and Users of Social Science Research. Wien, 1984.

The Technology Assessment research program emerged as a result of the belief that the technological decision process had to be channeled in function of the societal implications of the technology. TA studies are interdisciplinary applied policy studies in order to (1) inform public and private policymakers, social actors and interested citizens about the likely consequences of a new technological development, and (2) to identify, evaluate and compare alternative policies and implementation strategies in order to deal with questions and issues likely to arise when a technology is developed. Actually this implies that - if TA-research is willing to succeed - the needs of all actors must be taken in account in order to improve awareness by all those who are involved. This will give them the opportunity to assess their interests and to provide persuasive arguments in the technological decision process. Therefore the diffusion and dissemination of scientific research results (TA-studies) to potential user groups must be regarded as a key condition in the implementation of TA findings. TA should democratise the possibility of technological choice : both users, such as social and political institutions, and the broader public should have access to research results and be capable of making use of them.

This issue is at stake in a research conducted by the **Centre for the Study of New Media and Information Technologies** (Free University of Brussels) and the **European Centre for Work and Society** under the authority of the **Belgian Science Policy Administration** who is running a Technology Assessment program.

As the research has been started very recently, this paper has the only ambition to provide no more than a description of the research concept and design.

The research has been set up assuming the gap between knowledge producers and knowledge users. On the one hand there are enough facilities to produce scientific knowledge; on the other hand it seems to be very difficult to transmit the available knowledge to or to make it useful for relevant social actors. The main question then is : what problems do socially motivated users (target groups) face when searching relevant info (i.e. info to be used to make TA) on new technologies ?

The research concentrates on two societal relevant groups that are in search for such TA-expertise : i.e. the trade unions and the environmental groups. For the trade unions the TA-research implies an industrial weapon in defending and assessing the labour conditions, health provisions, labour organisation, employment fluctuations,... The interest for this kind of information is to be viewed as the net result of a major political and cultural change : while in past years technological innovation was viewed, essentially, as an evil to be removed because of its negative effects on employment, today it is increasingly being considered as useful and as a main condition for the competitiveness of the companies.

For the environmental groups its very important to call upon scientific expertise in order to set up strategic actionplans, anticipate technological innovations, be informed on regional, national and international environment policy initiatives and regulations.

The assumption is that the use of scientific information will not as much be impeded by financial or material problems, but by organizational and communicational problems these social actors face. For this obvious reason we have chosen to study the knowledge transfer by two well-defined societal groups : the trade union and the environmental group. The trade union is far more institutionalized and structured (organizational) as the environmental group which acts more as a classical new social movement and, in contrast, seems to have found the way to scientific knowledge more rapidly and efficiently.

Our thesis is that the transfer of scientific information is subject to the political and organizational culture of the organisations and the communication means and techniques which organisations use to provide the transfer.

Both communication researchers and sociologists make part of the research team. In the first phase the organizational sociological approach will provide a description of the facilities that are created in the formal organisation of the social actors in function of the knowledge transfer; i.e. what is the organisation structure ? which education methods are used to train the union members ?,... The communication input will concentrate on the relevant communication relations and facilities; i.e. what is the communication infrastructure of the

organisation ?, what are the communication channels used to transfer knowledge ?,... Both research approaches will concentrate on the dynamic character of both communication and functional experiences.

The research will be conducted in a persistent relationship between the researchers and the social actors to influence positively the process of change and innovation; i.e. make use of the participatory research method to reduce the utilization barriers. Every research stage will be discussed, evaluated and guided by both the researchers and social groups. In addition to the traditional interviewing techniques this method will be used in the research studies.

This research approach differs from the traditional studies on science communication : not the general lay public but motivated seekers of scientific information are subject of research. In explaining the science communication process we will concentrate on the communication culture and structure of the target-groups in search for scientific information. Consequently, we won't apply the mechanistic (and non realistic) sender-message- receiver or two-step-flow model -used in most studies on science communication- stressing the role of the sender and /or professional communicators in the science communication process. Grunig en Dornan describe these as diffusion theories.<sup>3</sup> They generate following research topics : the reporting of scientific news in the press, accuracy and readability of science coverage, profile of the science writer, news production features : interactions between the scientists and the professional communicators. Today we are faced with a large number of descriptive studies showing the importance and assessing the impact of the mass media in the science communication process. These (channel-oriented) studies, however, neglect the dynamic role of the public in the communication process. The public with its free will (as subjectivity) in assessing its behaviour. Sometimes it will use communication (instrumental communication) to optimize its behaviour. If not for this purpose, communication appears as consumption (consumptive communication). The

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<sup>3</sup> GRUNIG,J.E. Communication of Scientific Information to Nonscientists. In : DERVIN, B. & VOIGT, M.J. (Eds). Progress in Communication Sciences, volume II, Ablex Publishing Cooperation, New Jersey, 1980, pp. 167-215.

personal attitude to a problem determinates whether someone participates instrumental or consumptive to the communication process.

Our research reasons from the statement that the public is selecting actively in the communication process. The recognition of an active audience makes part of the interactive communication model used by Dervin and Lievrouw.<sup>4</sup> Science communication being approached from a constructivistic perspective, where knowledge is assumed to be a social construction of individuals who are constantly engaged in the process of interpreting and reinterpreting their surroundings, or making sense of their worlds.

From this point of view, science is just one of the knowledge cultures that coexist in society. Thus knowledge 'discovery' is being replaced by 'creation', stressing the knowledge-generating process.

New relevant research topics are : 'information search behaviour', information need' and 'information use'.

Consequently, we will have to ask following questions : when and for what purpose do the trade unions and environmental groups need scientific information ? what are the information values ascribed to scientific data (timeliness, degree of accuracy and actuality,...) ?

The research intends to evaluate the communication process between scientists and public groups and will formulate the appropriate conditions each communication of scientific information should meet.

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<sup>4</sup> DERVIN, B. Users Research Inventions : How Research Categories Perpetuate Inequities. In : Journal of Communication, 7, 1989, pp. 48-71.

LIEVROUW, L.A. Communication and the Social Representation of Scientific Knowledge. In : Critical Studies in Mass Communication, 7, 1990, pp. 1-10.