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Towards Innovation Foresight: Two empirical case studies on future TV experiences for/by users

Katrien De Moor [a,b,1,*], Ozcan Saritas [c,d], Dimitri Schuurman [b], Laurence Claeys [b], Lieven De Marez [b]

[a] Department of Telematics, Norwegian University of Science and Technology, O.S. Bragstads Plass 2a, 7491 Trondheim, Norway
[b] iMinds-MICT, Department of Communication Sciences, Ghent University, Korte Meer 7-9-11, 9000 Ghent, Belgium
[c] PREST/MIoIR, Manchester Inst. of Innovation Research, University of Manchester, Oxford Road, Manchester M13 9PL, UK
[d] National Research University, Higher School of Economics, 20, Myasnitskaya Str., Moscow 101000, Russia

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ABSTRACT

This paper discusses the need for a shift towards more Foresight-based inclusive innovation processes and introduces the concept of "Innovation Foresight" (IF) in this respect. IF represents an approach for bringing the future into holistic innovation processes, in which users and other stakeholders are systematically involved to detect future opportunities and risks. This could allow for a better integration of inclusive, long-term visions in decision-making and strategic thinking in the context of innovation. To be effective and enable mutual learning, the IF process calls for future-oriented, continuous interaction with current/anticipated users and a better integration of methods and approaches from different fields, including Foresight, user/market research and human-centred product design. This paper discusses two empirical studies that closely involved users in the exploration, imagination and creation of future TV experiences. Study 1 aimed to identify users' specific (future) needs and possible Lead User ideas concerning digital TV (DTV) in Flanders through an online survey ($N = 11.802$ digital TV users). 13 unique ideas representing important unfulfilled needs were identified and evaluated. Study 2, which focused on 'Future TV experiences', consisted of a multi-method research approach in three phases, resulting in six persona profiles, that help to provide an understanding of users' daily practices and futures aspirations. It is argued that a better introduction of future anticipation in inclusive innovation processes could enhance the input of users in innovation and contribute to the detection of potential user/societal needs and possible unexpected forms of use.

1. Introduction

Over the last decade, scholars, policy makers and practitioners from various fields have witnessed and influenced the increased emphasis on principles such as connectedness, interaction and knowledge sharing in R&D and innovation management. The 'open innovation paradigm' [1], which has been widely covered (and even hyped) in the literature is a

* Corresponding author at: Department of Telematics, Norwegian University of Science and Technology, O.S. Bragstads Plass 2a, 7491 Trondheim, Norway. Tel.: +47 73594798.
E-mail addresses: KatrienR.DeMoor@Ugent.be (K. De Moor), Ozcan.Saritas@manchester.ac.uk (O. Saritas), Dimitri.Schuurman@Ugent.be (D. Schuurman), Laurence.Claeys@Ugent.be (L. Claeys), Lieven.DeMarez@Ugent.be (L. De Marez).

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good example in this respect. Although the principles underlying the open innovation concept have been subjected to critical analyses, which designated it as '*old wine in new bottles*' [2], it has undoubtedly (re-)propagated the belief that successful innovation requires openness, interaction and knowledge sharing. The nature of innovation in this new era is fundamentally different from the earlier technology push and market pull approaches due to increasing complexity and uncertainty of systems, more distributed nature of knowledge creation and innovation, and finally the recognition of the close relationship between Science, Technology and Society due to the limits to the 'plasticity' of the society, which have become clearer more recently [3].

In the literature, the relevance of inclusive approaches and interaction between various stakeholders is strongly emphasised. It is argued that participatory methods are effective at stimulating the transfer of knowledge, mutual learning and collective visioning [4]. New (systemic) policy instruments have been/are being developed to facilitate such interaction between relevant stakeholders [5] and their importance is ever increasing in the more general context of what Cagnin et al. [6] refer to as 'Grand Societal Challenges'. In particular, there is a growing recognition of the user as 'innovator' and key stakeholder, especially in the early phases of scientific and technological research, development and innovation [7]. Users are seen as important sources of knowledge and co-shapers of the innovation trajectory (cf. Social Shaping of Technology perspective), whose needs, values and expectations should be 'tapped' systematically [8,9]. In so-called 'user-driven innovation', users are involved in a more systematic and continuous way, from the early, anticipatory and generative stages on. In practice, however, involving users for discovering more tacit needs and for identifying future innovation opportunities often remains problematic due to several constraints and limitations, which are briefly discussed in the next section. One approach that may be effective at enabling the desired inclusive knowledge creation is to use the future as a catalyst for precipitating the collective intelligence of users and stakeholders [10]. However, in inclusive processes aimed at enhancing users' input into innovation, notions of the future and anticipation often tend to be poorly introduced or lacking completely.

This paper proposes a shift towards more Foresight-based inclusive innovation processes and discusses the concept of "Innovation Foresight" (IF) [11] in this respect. It is argued that IF could serve as an interactive, participatory and forward-looking process towards the 'social shaping of technology'. IF is a basis for stimulating a future-oriented innovation dialogue that enables different types of users and stakeholders to voice and further develop their ideas, expectations, concerns. Through a better introduction of the future based on Foresight theory and practice and through an integration of methods and approaches from other fields, including user/market research and human-centred product design [12], IF could help to overcome some of the limitations and constraints of traditional market innovation research and enhance users' input into innovation.

The remainder of the paper is organised as follows: in the next section, the Innovation Foresight concept is introduced and contextualised. Thereupon, the methodological set-up and results from two empirical studies in which current and future users were closely involved in the exploration, imagination and creation of (future) TV experiences are presented in Section 3. *Study 1* focused on the identification of unfulfilled needs and possible Lead User ideas related to interactive digital TV; *Study 2* investigated 'Future TV experiences'. A multi-method approach was used to stimulate users' imaginative potential. Finally, Section 4 discusses a number of experiences and conclusions from the empirical studies in the light of the proposed shift towards more Innovation Foresight-based inclusive innovation processes.

2. Towards Innovation Foresight (IF)?

From the seventies and eighties onwards, several proactive and more bottom-up technology assessment approaches emerged in different countries, including Denmark, The Netherlands, Norway, etc. A number of concepts and approaches were proposed, such as Constructive Technology Assessment (CTA), Participatory Design and Participatory Innovation [13,14]. CTA, for example, with its aim of broadening design and development processes and early interaction between the relevant technology and societal actors, can be considered an initial attempt at Innovation Foresight. CTA drew strongly on the inclusivity of broader social constituencies and interaction with current and anticipated future users in Research, Development and Innovation (RDI) activities. Similarly, Participatory Innovation sought to empower people and to create an environment for user innovation in a broad sense [13].

In spite of the terminological differences, a common, explicit focus is put on dialogue, co-production, societal learning, joint agenda-building, etc. The benefits of such user involvement and interaction are widely discussed in the literature. For instance, active and continuous user involvement have been said to lead to '*unique and valuable ideas for future development*' [15], to more '*socially and environmentally friendly technologies*', to an increased '*quality of innovations*' [16], and even to societal democratisation [8,16]. The term 'hybrid fora' has also been coined in this respect. Such fora facilitate interaction between stakeholders that usually do not interact [6] and enable them not only to make their expectations more explicit but also to share them with each other. The latter is of key importance, not only for mutual learning or joint agenda setting, but also for legitimation purposes and for increasing the possibilities of success, especially within the early stages [17]. Similarly, den Hertog and Smits [18] emphasised the positive effects of user involvement, such as '*more effective articulation of social needs, improved acceptance and social embedding of technology, broadly supported decision-making on innovation*'. At a more tangible level, it has been argued that active involvement of users helps to create a good fit between the needs, expectations, aspirations of users and the actual product or technology that is envisaged or might be developed.