



Contents lists available at ScienceDirect

## Technological Forecasting &amp; Social Change



# Knowledge creation dynamics in foresight: A knowledge typology and exploratory method to analyse foresight workshops

Mikko Dufva<sup>a,\*</sup>, Toni Ahlqvist<sup>b</sup>

<sup>a</sup> VTT Technical Research Centre of Finland, Tekniikankatu 1, Tampere, P.O. Box 1300, 33101 Tampere, Finland

<sup>b</sup> VTT Technical Research Centre of Finland, Itäinen Pitkätatu 4, Turku P.O. Box 106, 20521 Turku, Finland

## ARTICLE INFO

*Article history:*

Received 5 April 2014

Received in revised form 30 August 2014

Accepted 11 October 2014

Available online xxxx

*Keywords:*

Foresight

Workshop

Knowledge typology

Futures knowledge

Knowledge creation

Foresight process

## ABSTRACT

A typical foresight process involves stakeholders exploring the futures and interpreting the results to present actions. In other words, participants create knowledge about the future. Interaction between the participants is a key ingredient of foresight, yet this dynamic interaction has rarely been studied from the perspective of knowledge creation. In this paper, we aim to fill this gap by looking at how, and through what kinds of dynamics, knowledge is created in a foresight workshop; how it is manifested; and what are the special characteristics of futures knowledge. We develop a typology of knowledge in foresight workshops, and construct an exploratory methodological approach for analysing the knowledge creation dynamics in transcribed workshop discussions. Based on the results from the analysis of two workshop discussions, we argue that futures knowledge is founded on the knowledge base formed by the participants and new knowledge is created both through cumulative discussion flow and revelatory statements which reframe the discussion or challenge implicit assumptions. We argue that the typology of knowledge as well as the exploratory method aid in understanding futures expertise and support the planning of foresight processes.

© 2014 Elsevier Inc. All rights reserved.

## 1. Introduction

Participation is a key characteristic of foresight (Van der Helm, 2007; Miles et al., 2008; Cagnin and Keenan, 2008; Glenn and Gordon, 2003). A typical foresight process involves stakeholders exploring the futures and interpreting the results to present actions. Stakeholders usually engage in the foresight process and actively construct outputs of the process, commonly in the form of scenarios, roadmaps, visions or recommendations for future actions. In other words, the participants create the knowledge about the future (cf. Hines and Gold, 2014). The interaction between the participants is a key ingredient of foresight, yet this dynamic interaction has rarely been studied from the point of view of knowledge creation. In this paper we

aim to fill this gap by analysing how knowledge about the future is created in the foresight process, and specifically in a foresight workshop.

What, then, is knowledge about the futures, or futures knowledge, and how is it constructed through such a process? These questions have previously been approached from at least two viewpoints: from a theoretical viewpoint (e.g. De Jouvenel, 1967; Bell, 2003; Kuusi, 1999; Malaska and Masini, 2009; Gabriel, 2013; Sardar, 2010) and from an output-oriented viewpoint (e.g. Eerola and Miles, 2011). The theoretical viewpoint analyses the specific nature of futures knowledge, its ontological and epistemological foundations, and the limits to this knowledge. The output-oriented viewpoint considers what kinds of knowledge can be created in a foresight process, such as forecasts, descriptions of future possibilities, or perceptions of the future, and aims at understanding the consequences of actions (Eerola and Miles, 2011). However, less research has focused on understanding

\* Corresponding author. Tel.: +358 40 765 8412.

E-mail addresses: mikko.dufva@vtt.fi (M. Dufva), toni.ahlqvist@vtt.fi (T. Ahlqvist).

futures knowledge as constructed in the actual foresight process (Slaughter, 2001).

In this article, we propose a third approach that focuses on knowledge creation dynamics in the foresight process, from the lens of knowledge in action. Specifically, we look at how knowledge is created, and through what kinds of dynamics, in a foresight workshop; how this knowledge is manifested; and what are the special characteristics of futures knowledge. We aim at developing a typology of knowledge that could prove useful in analysing the knowledge creation dynamics in foresight processes, and especially in participatory futures or foresight workshops. Workshops are widely used in foresight for both the creation and synthesis of knowledge, and for fostering the imagination on possible alternative futures (see e.g. Jungk and Müllert, 1996; Boulding, 1991; Phaal et al., 2007; Kerr et al., 2013; Carlsen et al., 2014). We illustrate how the aspects of creation, imagination and synthesis are revealed in the knowledge dynamics of a foresight workshop. In order to realise this, we have developed a knowledge typology and, based on this typology, we have also constructed an exploratory methodological approach for analysing the knowledge creation dynamics in workshop discussions.

Our typology is grounded on three theoretical lineages: the first of these is the classical SECI model (socialisation, externalisation, combination, internalisation) by Nonaka and Takeuchi (1995) and Nonaka et al. (2000), and its further developments in the field of foresight (Uotila et al., 2005). The second is the so-called transformative or critical lineage in foresight that aims at problematizing and challenging the commonly held assumptions in foresight, such as the aim towards group consensus (Inayatullah, 2008; Staton, 2008; Slaughter, 2002). The third lineage is based on the practice-oriented turn, emerging in social sciences, that focuses on social practices as primary sources of insight and interpretation in different social contexts (e.g. Bourdieu, 1977; Cetina et al., 2005; Ibert, 2007; Moodysson, 2008; Kornberger and Clegg, 2011). Our aim was to construct a typology that would be applicable in describing the knowledge creation dynamics as they unravel in the course of social interaction in a specific context, that is, in the context of participatory foresight processes.

In our view, a foresight workshop can be defined as a temporary socio-spatial crystallisation of expertise, with a particular sort of socio-spatial group dynamics, in which different instruments and tools are deployed in order to endorse knowledge creation. Workshops are usually part of a wider process flow in a foresight exercise, and in this wider flow the workshops are to be viewed as a ‘hermetic’ and intensive temporary phases for knowledge creation. Thus, a workshop is a spatially and temporally intensive locus of knowledge gathering and creation. In-between these intensive knowledge creation phases the process usually contains more reflective phases, during which background knowledge is accumulated and necessary back-office analytics are realised. However, here our analytical focus is primarily on the participatory phase of the foresight workshop.

The article is structured as follows: after this introduction, in Section 2 we describe the typology, knowledge conversions and their theoretical background. In Section 3 we outline our method for analysing the workshop discussions and the results from the analysis. In Section 4 we discuss the results and Section 5 concludes the article.

## 2. Typology of futures knowledge and foresight workshops

Plato is usually credited with defining knowledge as “justified true belief” (Fine and Carpenter, 2003). The nature of futures knowledge can be reflected against this definition. To begin with, statements about futures are neither true nor false (Gabriel, 2013; Wright, 2009). This is firstly because a future has not yet been realised and thus is not pre-determined. Secondly, this is because futures knowledge is created by learning beings, which, according to Kuusi (1999), have the following features: a learning being “can change its behaviour as the result of its experiences”, “has interests, which direct its behaviour” and “has an active memory, where its experiences are stored”. This means that realisation of futures is contingent on our actions.

A common motivation for activating futures knowledge through the foresight process is to broaden the horizon on what is deemed to be relevant or possible in the present by challenging widely shared positions and existing worldviews (Inayatullah, 2008; Staton, 2008; Slaughter, 2002; Blackman and Henderson, 2004; Aaltonen and Holmström, 2010). Therefore, one aim of the foresight process is to test the limits of the futures horizon, that is, the scope of what is thought to be plausible and possible, or what is deemed to be the relevant domain of inquiry about the futures. In a foresight process participants may explore alternatives that none of the participants actually believe will happen as such, but could be plausible under certain conditions and with justifiable assumptions (cf. Gabriel, 2013). Futures knowledge could thus be defined as “justified contingent plausibilities”: it deals with alternative images of the futures, and the rationalities behind these images under certain plausibility assumptions, and scopes how present actions could affect these images.

Knowledge as a form of understanding can be connected either to a thing or to a process (Zack, 1999). It can be an outcome of the foresight process, for instance a scenario, or it can be the interpretation of that scenario from the perspective of action planning. This division has similarities with a perspective of strategy planning called strategy-as-practice, which makes a distinction between strategy as something that an organisation has and strategy as something people do (Whittington, 1996). The practice-oriented view is dominant also in the concept of strategy crafting, that is, strategy as something that organisations and people actively construct (see e.g. Mintzberg, 1987; Whittington and Cailluet, 2008). In the so-called knowledge-based view of the firm, the knowledge is usually defined as a strategic asset or resource of a firm (Bollinger and Smith, 2001; Grant, 1996; Eisenhardt and Santos, 2002), or even as a “meta-resource”, meaning that it coordinates the mobilisation of other resources (van den Berg, 2013). Following this view, futures knowledge would be focused on the outcomes of foresight process, that is, how scenarios, roadmaps, visions and related action recommendations help in the prioritisation of present activities in order for the firm to reach a desired future state. In other words, the emphasis is on knowledge as crystallised into a thing such as a strategy document, statement, visualisation and so on. Nonaka et al. (2000), however, suggest a more action-based view of knowledge and define it as “a dynamic human process of justifying personal belief toward the truth”. How then are “contingent plausibilities” justified in a foresight workshop? In

Download English Version:

<https://daneshyari.com/en/article/7256670>

Download Persian Version:

<https://daneshyari.com/article/7256670>

[Daneshyari.com](https://daneshyari.com)