

The triple dance of knowledge combination: how knowledge bases, territorial scales and relational contexts interact in innovations

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The object for research

Knowledge dynamics related to firm innovation

i.e. creation, diffusion and use of knowledge for change processes rather than for operational /routine tasks

Empirical problem statements

The increasingly complex nature of innovations and knowledge creation, shaped by several factors such as:

- ❑ the extraordinary growth in the mobility of information, knowledge, individuals and capital;
- ❑ the increasing composition of products by means of technologies which are flexible, configurable and cross-sectorial;
- ❑ changes to society's values and practices which are currently responsible for changes to products and services mainly in terms of symbolic meanings;
- ❑ increasing participation of consumers in design/production processes.

From cumulative to combinatorial knowledge dynamics (Crevoisier and Jeannerat 2009; Strambach and Klement 2012)

Theoretical problem statements

Many different components of knowledge have been proposed as important to achieve innovation: Organizational, sectorial, cognitive, epistemological, temporal, institutional, cultural, spatial, etc.

Scholars in the field of organizational studies usually emphasize cognitive or social/practice-based dimensions (micro/community dynamics), while scholars in the field of economic geography usually emphasize spatial and relational/institutional dimensions (macro level, contexts).

Need of combining the perspectives of organizational studies and regional studies of innovation in order to better understand the complex knowledge dynamics of actual innovations of today

An approach which tries to bridge different strands of innovation literature into a unified framework, enabling to connect organizational learning concepts to spatial/institutional considerations on innovation, is the so-called “combinatorial knowledge dynamics” approach (CKD), emphasizing the role of three dimensions of knowledge: epistemological variety, territorial scale, and relational contexts.

Research objectives

The goal of this paper is to explore the usefulness of the CKD approach for studying of innovations and to investigate the way the three emphasized dimensions are combined, in a sort of intertwined triple dance.

The food sector is empirical setting

The food sector can be seen as paradigmatic regarding the overall changes in economies and societies mentioned above

The CKD approach and its three dimensions (I)

1. The epistemological dimension
2. The geographical dimension
3. The relational dimension

1. The epistemological dimension

CKD refers to the combination and interaction of three *Differentiated Knowledge Bases* (or ways of knowing) as defined by Asheim and colleagues (Asheim and Gertler 2005; Asheim et al. 2007a–c; Moodysson et al. 2008; Manniche 2012)

The DKB taxonomy transcends the traditional tacit/codified dichotomy

Analytical knowledge: ‘theoretically understanding’

Synthetic knowledge: ‘instrumentally solving problems’

Symbolic knowledge: ‘culturally creating meanings’

The CKD approach and its three dimensions (II)

2. The geographical dimension

CKD refers to generation and distribution of knowledge involving actors, sources and institutions at multiple territorial scales (e.g. local, regional, national and international)

The fundamental 'knowledge argument' of regional innovation studies:

Tacit knowledge is encouraged by spatial proximity of actors while codified knowledge more easily is transferred in space

The CKD approach and its three dimensions (III)

3. The relational dimension

CKD refers to the growing need for firms – besides coordinating their varied internal knowledge dynamics – of relating to and providing knowledge in different external contexts, characterised by varying juridical and institutional conditions, routines and practices etc.

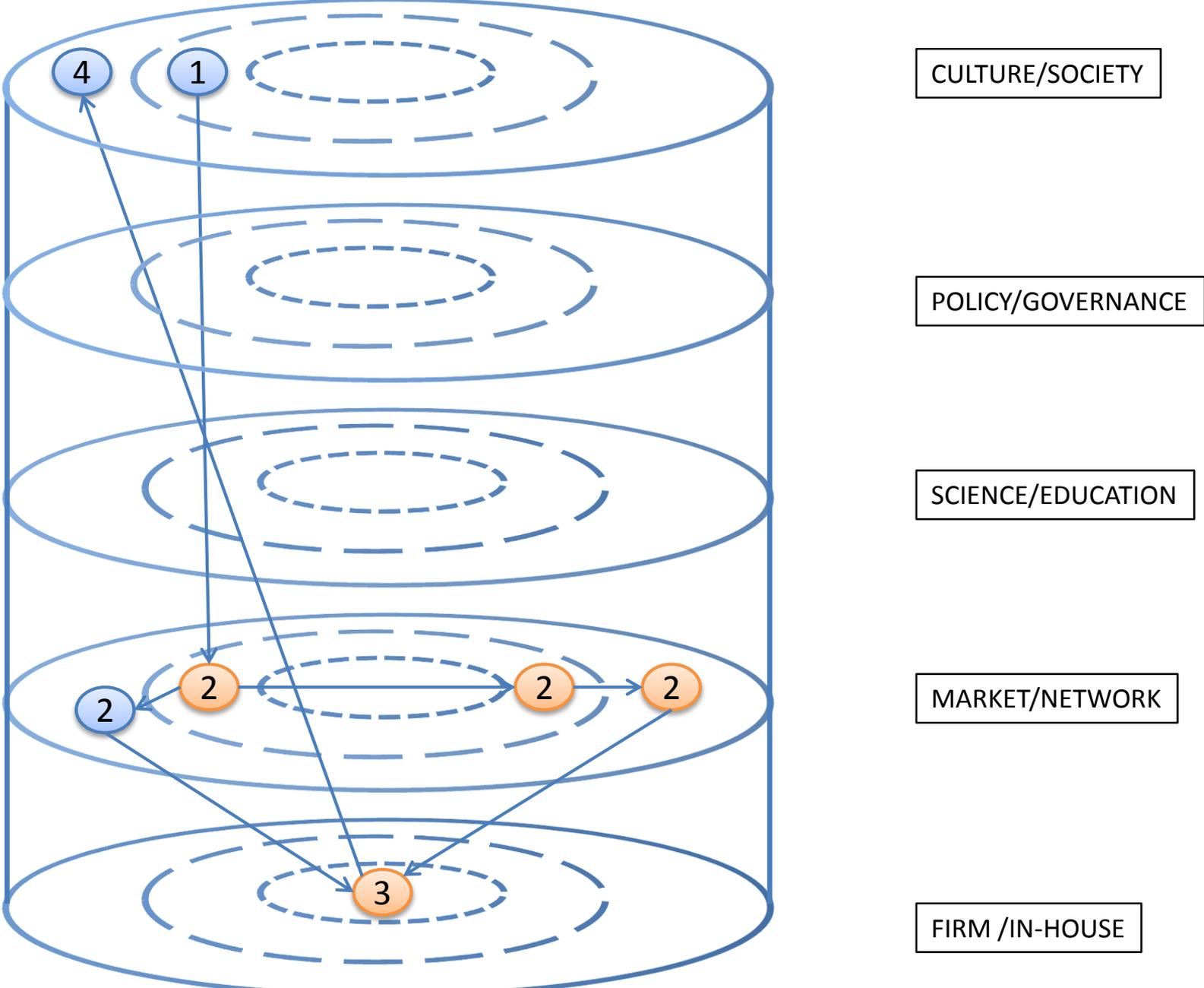
The specific relational contexts considered in the CKD approach are:

- The Firm (internal departments, teams, individuals etc.)
- Market/Networks (e.g. suppliers and competitors)
- Science/Education (e.g. collaboration with universities)
- Policy/Governance (e.g. new legislation and public support schemes)
- Society/Culture (everyday life of consumers and citizens, the public world)

Empirical cases

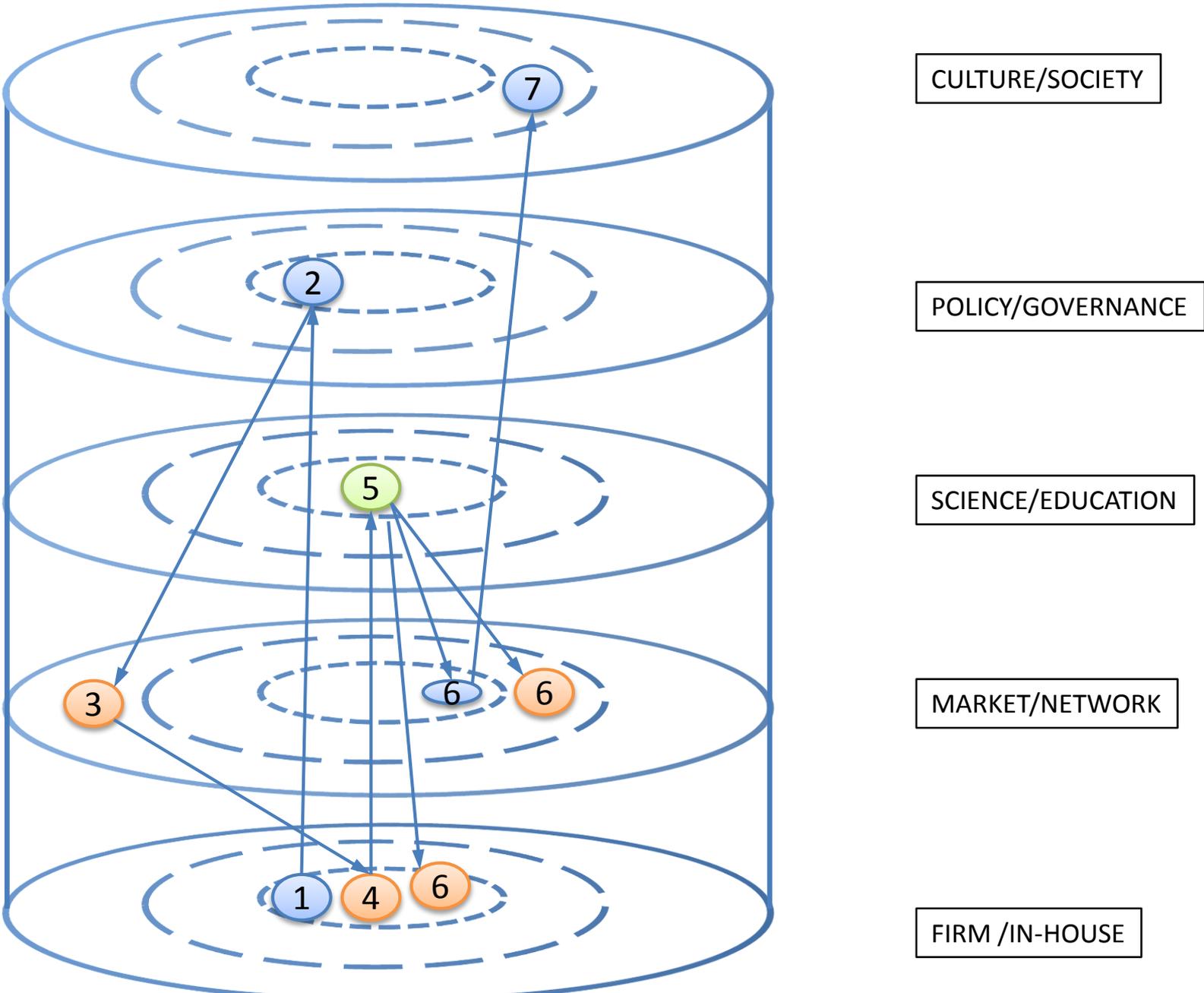
- ❑ Grom is a high quality ice cream producer which started up in 2003 as a small shop in the centre of Torino. Nowadays it counts more than 500 employees in about 60 shops in Italy and in the world (sales 2012 = 30 million euros). It is located in North West Italy, in the so called Food Valley where in 1986 the Slow Food movement was born. The Food Valley counts for 3 billion Euros of food export (1 billion only for wines, such as Barolo and Barbaresco), about one tenth of the whole Italian food export.
- ❑ Lehnsgaard is a small-scale producer of a number of high quality food products among which is a cold-pressed rapeseed kernel cooking oil, marketed in 2004. It has less than 10 employees. It is located on the small Danish island of Bornholm in the Baltic Sea with 42.000 inhabitants.

CKD of innovation of GROM Icecream



SYNTHETIC
 SYMBOLIC
 ANALYTICAL
 LOCAL
 NATIONAL
 INTERNATIONAL

CKD of innovation of Lehnsgaard Cooking Oil



Legend for node types and geographical scope:

- SYNTHETIC:** Orange circle
- SYMBOLIC:** Blue circle
- ANALYTICAL:** Green circle
- LOCAL:** Dashed blue circle
- NATIONAL:** Dashed blue circle (outer)
- INTERNATIONAL:** Solid blue circle (outer)