



# Broadening, deepening, and governing innovation: Flemish technology assessment in historical and socio-political perspective



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## ARTICLE INFO

### Article history:

Received 10 September 2014

Received in revised form 21 June 2015

Accepted 21 June 2015

### Keywords:

Flanders

Knowledge-based economy

Innovation policy

Political governance

Technology assessment

## ABSTRACT

This article examines the socio-political dynamics in the evolution and development of Flemish technology assessment (TA). Broadly defined, TA encompasses activities and programs that expand and deepen the knowledge base of contemporary knowledge-based economies (KBEs), typically by including new actors (e.g. trade unions), ideas (e.g. science *in* society), and rationales (e.g. participatory techniques) in science, technology, and innovation (STI) processes. Starting from the regionalization of STI policy in Belgium and the convergence of Flemish STI around global KBE principles, the article exemplifies how since the 1980s successive Flemish TA waves (early-warning, bottom-up, and interactive TA) have co-evolved with successive generations of Flemish innovation policy. Building on these findings, it argues that Flemish TA has counteracted and accommodated dominant STI paradigms. By providing a historical and socio-political perspective on TA and innovation policy, the article draws critical attention to the institutional settings and societal contexts in which TA is embedded, and questions TA's strategic utility within contemporary KBEs. This perspective sheds light on the Flemish government's recent decision to close its parliamentary TA institute and the institutional expansion of TA elsewhere in Europe.

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## 1. Introduction

In Flanders, Belgium, government officials, business and industry leaders, academics, and journalists frequently unveil to one another their views on how to spur innovation for economic growth and ensure quality of life. Hence, in a 2006 government-sanctioned report entitled *Innovative Flanders: Innovation Policies for the 21st Century*, we read that Flanders must ensure “innovation-led growth,” as the welfare and wellbeing of the Flemish people depend on high-technological innovation in the wake of “globalization.” In their contribution to the report, the then Flemish Minister of Innovation and members of her ministry call for more collaboration and learning among government, industries, and universities, if Flanders is to remain a “leading innovation region” (CCIP, 2008, p. 13; pp. 17–18).

More formally, in 2009 Flemish social partners and captains of industry signed the *Pact 2020*, indicating a joint resolve to turn Flanders into one of the five top regions in Europe and one of the world's

most competitive economies by 2020<sup>1</sup>. To this end, the Pact outlines a number of domains in which progress is to be made and through which “researchers, companies, and the authorities must work very closely together” within a framework of “open innovation.” Accordingly, new, collaborative approaches are to be devised, including ones that sustain the “knowledge commons” on which innovation depends<sup>2</sup>.

To a considerable degree, the visions above advance a strategic-economic rationale to innovation, as they sustain the understanding that innovation is a must to the creation of well-paying jobs, securing social welfare, and strengthening capacities for international competition and global growth. This outlook is not new. Innovation has long been identified in the social sciences as a major source of economic and social development (e.g. Schumpeter, 1939; Kondratiev, 1978). It also resonates with views voiced elsewhere in the industrialized world. To give an example, the Organization for Economic Cooperation and Development (OECD, 2010) describes innovation as the chief engine of productivity that holds the prospect of supporting economic growth on the

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<sup>1</sup> The term “social partners” encompasses employers' organizations and trade unions, who regularly convene to negotiate and reconcile their interests.

<sup>2</sup> See <http://www.vlaandereninactie.be/over/over-via>.

cheap, particularly in a time of slow economic development, global warming, and rising prices for natural resources.

In short, innovation and innovation management feature prominently on the public agenda in Flanders, as they do elsewhere, and often within a prevalent market-oriented, knowledge-based economy (KBE) narrative. Following Wullweber (2008), this narrative simultaneously underlines the cooperative pooling of strategic resources and the competitive production of new knowledge as a means of garnering wealth and new employment in industrialized countries. However, the prevalent language of innovation-led growth is also extended in ways that suggest a more comprehensive reading of innovation beyond purely economic and commercial interests. Flemish innovation industries, policymakers, and academics increasingly acknowledge the importance of integrating ecological and social concerns into research and development (R&D) and business processes if technological innovation is to succeed. In fact, the aim of broadening innovation to include “its non-technological aspects” is now explicitly on the agenda of industry players and the Flemish government as a whole (Vervliet, 2006, p. 19). Correspondingly, contemporary science policy discourse is laden with notions such as horizontal governance, open innovation, and social innovation, which stress not only strategic cooperation between multiple actors, including stakeholders and publics, but also the co-evolution of technology and society (Felin and Zenger, 2013). As stated in the Flemish government’s 2006 action program *Flanders in Action* (VIA), Flanders has “great need for a competitive economy, not only to face and tackle the challenges confronting us today and tomorrow, but also to be able to accomplish our goal of creating an open, caring, concerned, and sustainable social environment. . . there can be neither room nor patience for poverty, social inequality, or exclusion.” Thus, social and ecological concerns have entered the policy lexicon, as has the question of how to incorporate such concerns into innovation strategies. Innovation then, is not only about ensuring international competitiveness through knowledge networking and management, but also about meeting the needs of citizens, and organizing interaction among a larger variety of technological and social actors than has thus far been the case. As these actors include Flemish and European “stakeholders” and citizens, who operate within the framework of an open and inclusive European economy, the VIA program aligns with a broader set of initiatives, such as the 2000 Lisbon Agenda and the more recently established EU Research and Innovation program, Horizon 2020<sup>3</sup>.

Taking these extensions of mainstream STI discourses as its entry point, this article examines how Flemish STI is affected by, and potentially transformed through, *technology assessments* (TAs). Broadly defined, TA encompasses activities and programs that extend and deepen the knowledge base of contemporary KBEs, typically by including new actors (e.g. trade unions), ideas (e.g. science in society), and rationales (e.g. participatory techniques) in STI processes. Research on TA suggests that the role of TA in national, transnational, and international innovation processes can be substantial (Joss and Bellucci, 2002; Delvenne, 2011; Rodmeyer et al., 2005; Ganzevles et al., 2014). Even if particular TA activities do not directly impact on innovation policy, TA can catalyze democratic debate on technology, raise public awareness about sociotechnical issues, or simply bring together actors and their issues in original ways (Ely et al., 2014; Hennen, 1999; Bütschi and Nentwich, 2002, p. 245). As we show in this article, from the 1980s onwards Flemish TA initiatives challenged technology-centric, market-led innovation policies for failing to consider the wider social, ecological, and ethical ramifications of technology. Shortly after the

first Flemish government was installed, policy actors instigated TA programs in an attempt to alleviate the social, economic, and legal consequences of new technologies like biotechnology. These programs emerged in response to pressure from the trade unions, among others, who demanded that R&D agents take into concern workers’ safety and wellbeing. In more recent years, interactive TA forms have developed involving civil society organizations and lay publics, with the aim of formulating social and environmental needs as a starting point for R&D. Hence, the enlargement of innovation terms and rationales in Flemish STI policies can partly be traced back to TA interventions in Flemish workspaces, governing bodies (e.g. Flemish parliament), and industrial R&D processes. These spaces in turn provided a fertile basis for the further development of TA and its institutional uptake, as Flemish TA evolved with, and ongoingly drew inspiration from, TA processes elsewhere, including constructive TA (Schot and Rip, 1997), parliamentary TA (Decker and Ladikas, 2004; Ganzevles and Van Est, 2012), and participatory TA (Joss and Bellucci, 2002). Flemish TA can hence be seen as an instructive “test case” for how various kinds of TA mingled with innovation policies and practices within the confines of a high-technology, innovation-driven KBE.

To put the above considerations in due empirical and historical perspective, we retrace the emergence and evolution of Flemish TA in connection to Flemish and European innovation policy (part 2). Our description draws on documentary analysis and on accounts provided to us by policy analysts and spokesmen, industry research leaders, and academics well-knowledgeable of Flemish and European innovation policy and TA. These interviewees were identified through their association with TA or selected based on an initial analysis of newspaper coverage, innovation reports, policy memos, and agency documents, as well as legislation and records of parliamentary hearings dating back to the eighties<sup>4</sup>. The historical overview presented in part 2 is followed by a section on the so-called Three Generations model of innovation from the innovation systems literature (part 3). Contemporary policy discourse (both Flemish and European) and TA language invoke this evolutionary model of technical change in pursuit of a more interactive and collaborative innovation process that involves actors from “all policy domains,” including governments, industries, universities and schools, as well as “societal stakeholders” and wider publics (Larosse, 2004, p. 6; Kuhlmann, 2001a). Thus, through the Generations model, TA and mainstream innovation discourse are potentially aligned. This alignment opens onto new, potentially powerful, STI articulations that may or may not evoke shared sense making among implicated actors. It therefore begs the question as to which role TA can, and should, play in present-day processes of “innovation governance” (Felt et al., 2007) (part 4).

We stress upfront that this study does not fully map the policy debate on innovation in Flanders or Europe. Rather, the emphasis is on TA actors and processes, and particularly on the broadening of innovation terms and actions *through Flemish TA*. The relatively small interview sample reflects this focus, as only a handful of people has profound expertise of Flemish TA. We hence caution against overstating the role TA in Flanders has played in

<sup>3</sup> See the Flemish government’s VIA website for countless references to these European initiatives.

<sup>4</sup> All interviews were held in Dutch and transcribed in that language based on repeated listening to the audio-recordings and interview notes we had taken. The interview approach was semi-structured, as we started from a number of key themes, such as the history of Flemish innovation, which are found in the abovementioned documentary sources. From a concern with securing credible interpretations and deepening the scope of the data, various respondents were interviewed up to four times. Of the ten interviewees who responded to an initial draft of this paper (which the first author circulated in April 2012), all affirmed the accuracy of our interpretations, although four added valuable comments, which led us to further nuance or accentuate particular points. A list of interviewees is provided in Appendix A. One respondent’s name is not disclosed as she insisted on remaining anonymous.

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