19th International Scientific Conference; Economics and Management 2014, ICEM 2014, 23-25 April 2014, Riga, Latvia

Conceptual model for responsible innovation management in business organizations

Monika Petraitė[a]*, Jolita Čeičytė[b]

a, b Kaunas University of Technology, K. Donelaičio g. 73, LT-44029 Kaunas, Lithuania

Abstract

The notion of responsible innovation has caught a big attention in post-crisis research of management, as it brings more and more economical facts that application of responsible innovation process in organizational activities brings stable and long-term successful results. However, the way in which responsible innovation process should be integrated into the organizational innovative context is less clear. The paper examines decomposition of responsible innovation process, focusing on high-tech organizations in medical sector, which is heavily dependent on responsible innovation and constitutes one of Lithuania's smart specialization fields.

© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/3.0/).
Peer-review under responsibility of the Kaunas University of Technology.

Keywords: Responsible innovation; sustainability; medical sector.

1. Introduction

The importance of responsible innovation in organization's innovative activity is well recognized and has inspired a wealth of research in finding the dimensions of responsible innovation and its process. There are several reasons why to explore the concept of responsible innovation and to create the process of it is crucial nowadays. First, the question of sustainability and long term challenges including climate change, social inequality, pollution, critical raw materials scarcities are raising and requiring to search for new ways to run activities (Bauman, 2007; Van den Hove, McGlade, Motet, et al., 2012; Von Schomberg, 2013). Second, the business is facing a significant number or ethical

---

* Corresponding author. Tel.: NA.
  E-mail address: monika.petraite@ktu.lt

problems in creating high-tech innovations, especially, in medical sector (Helstrom, 2003; European Comission, 2007; Owen, 2009; Owen, Macnaghten, Stilgoe, 2012; Pavie, Carthy, 2013; Owen, Bessant, Heintz, 2013, Von Schomberg, 2013). Third, the policies of economical leading have been changed as newcomers (e.g. Brazil, Russia, India, China, South Corea, etc.) also mastered the know-how and became innovative in different levels of sectors (Boons, Montalvo, Quist, et al., 2013).

Though it could be noted that the idea of responsible innovation has been transforming from 17th century already, but in nowadays' context, when the science is not only for the science, but for society (Lyotard, 1979; Stilgoe, Owen, Macnaghten, 2013), the question of responsibility has aroused in the new perspective. Contemporary idea of responsible innovation and its definition is examined by many researchers of management (Helstrom, 2003; Owen, 2009; Sutcliffe, 2011; Armstrong, Cornut, Delacote, et at, 2012; Owen, Macnaghten, Stilgoe, 2012; Pavie, 2012; Owen, Bessant, Heintz, 2013; Pandza, Ellwood, 2013; Stahl, 2013; Stahl, McBride, Wakunuma, Flick, 2013; Von Schomberg, 2013), though the process or conceptual model of responsible innovation is much less explored (Pavie, Carthy, 2013; Stilgoe, Owen, Macnaghten, 2013; Pandza, Ellwood, 2013) and remains unclear.

All progress and more specifically, a firm's competitiveness, rests on the ability to innovate in organizations and sustainability. Much research has gone into models of innovation management, however, the integration of responsibility as a contradictory issue into innovative activity and creative destruction still lacks understanding, and especially, management tools. In corporate innovation, R&D and product development tools such as stage-gate help firms to manage innovation projects. Responsibility is either internally predicated (by culture and values) or externally induced (by setting institutional contexts). At the organization level, most research and managerial practice focuses on the context. However, the internal models and management practices for responsibility check within innovation management models are lacking, especially within the sensitive industries, like ICT, medical engineering, etc.

It is important to mention that one of the main initiators over the last two years in revealing and determine responsible innovation process is European Commission (Owen, Mcnaghten, Stilgoe, 2013). The issue is understood as a crucial importance as well at the ERA, with Horizon 2020 putting a separate line of research in new research agenda (SEAC-2-2014: Responsible Research and Innovation in Higher Education Curricula, and also integrated research agendas within all Horizon 2020 calls). European Commission seeks to become the guide and leader of responsible innovation integration into society (including business sector); so, many guidelines, strategic documents and workshops have been done under the aim to define responsible innovation and its process (European Commission, 2007, 2010, 2011; Sutcliffe, 2011).

According to current inevitable uncertainty of technological change, its impact to society and absence of rules for guiding process of organizations' innovative activities, the paper starts from responsible innovation idea and develops conceptual model for responsible innovation process. In the next section, the research design and methods are introduced, before reporting the insights gained from in-depth interviews. Finally, we discuss how the issue of responsible innovation process affects organizations' innovative activities and we determine main conclusions concerning the conceptual model for responsible innovation process.

2. Method

The responsible innovation management methodology is developed based on innovation management processes and metrics that are relying on the indicators of economic, social, environmental and strategy-linked outcomes. The purpose of research is to examine the current situation of making innovations in a responsible way in high-tech business organizations which are acting from medical sector. Seven case studies are used to examine the decomposition of responsible innovation process. The data collection is done by the authors through in-depth interviews with representatives of Lithuanian high-tech enterprises in medical sector.

3. Results

The findings revealed that the study participants recognized the dimensions and processes of responsible innovation as crucial for sustainable and long-term development. The meaning and use of responsibility in innovation process was mentioned of all participants as one of the most important condition to act and remain