



“Keep open”: the potential of gatekeepers for the aligning universities to the new Knowledge Triangle



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ARTICLE INFO

Article history:

Received 30 September 2015
Received in revised form 26 December 2015
Accepted 18 March 2016
Available online 2 April 2016

Keywords:

Gatekeepers
Expertise
Societal challenges
Internationalization
Third Mission
Modernization agenda
Knowledge Triangle

ABSTRACT

Universities are increasingly seen as institutions which anticipate and address the challenges induced by interactions within the Knowledge Triangle (KT). The interactions between actors in the KT force individual agents to adjust and refine their models of operation and provide targeted output which supports the activities of other agents. Among companies, we saw the emergence of the open innovation concept which stresses the will of companies to cooperate in innovation. At the same time, the scientific community is increasingly challenged by open access to research findings and by online learning courses. These two recent developments are among the most important that were significantly initiated by gatekeepers, themselves especially important actors within the KT because they possess the power to orchestrate and direct the linkages between KT actors.

Until recently, the role of gatekeepers within the KT has been little analysed. The paper suggests that understanding the role and characteristics of gatekeepers is essential for substantial and sustainable interactions between KT agents and the fulfilment of the Third Mission of universities. Therefore, the linkages go beyond purely knowledge and technology transfer linkages but rather show how gatekeepers influence competency-building for delivering information and technologies to other organizations and enhancing institutions' absorptive capacity which is argued to be crucial for implementing effective, targeted, and productive interactions of universities. It is argued that universities need to be aware of gatekeepers' competences and powers well in advance to make use of knowledge exchange with other parties to shape society. In addition, it is argued that universities' skill base – as shown in researchers' competences – is a vital element of universities' intellectual capital which should be included in universities' performance evaluation frameworks. Finally, the paper argues that it is important for policy making in science, technology and innovation to possess knowledge of gatekeepers' position in the KT to enhance collaboration between KT agents and provide research institutions, namely universities, with the competences needed to vitalize the universities' 'Third Mission'.

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1. Introduction

For a long time, universities have had to respond to new challenges of more distributed research and education combined with their Third Mission 'innovation' which is expressed in the Knowledge Triangle. As important agents in innovation systems for the production and dissemination of knowledge, and the education and training of the labour force, universities are constantly in the spotlight of national policy agendas. Universities are associated with the role of generators of knowledge who meet the needs of the knowledge society and serve as a source of national welfare in economic and social terms. This imposes high expectations on the performance and power of universities as institutions and their employees in particular. First, there is a widespread assumption that the majority of university employees are scientists with additional educational duties. Second, it is expected that universities deliver research and education which is immediately applicable in occupations

and applications outside the institutions or at least requires relatively few adjustments. Third, universities are seen by policy makers as status symbols for countries and/or regions which inherit the intention that policy makers expect immediate impact of a university institution on the image of a location or region as a knowledge generator leading to economic prosperity growing around the institution. Moreover, the latter assumptions naturally imply that universities are thought to deliver excellence in research and education and act quickly on scientific and economic changes.

Among these changes is the emergence of the open innovation concept among companies who are increasingly involving external partners in their own innovation activities. These activities vary and include collecting ideas, and the marketing and exploitation of innovation. In this respect, companies also consider ongoing training of employees increasingly important: today, online training and rapid access to relevant scientific publications in electronic and mostly open access for mare becoming ever more important instruments. Based on these developments, companies are shifting their attitudes towards universities and research institutes significantly and are respecting these

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organizations as sources of innovation. Hence, companies expect universities to extend their knowledge generating functions through more targeted and sophisticated means of communicating their competences and knowledge such as online training and open access communication of research.

In this context, the Knowledge Triangle (KT) is a useful concept to analyse the role and meaning of universities within national innovation systems (NIS) and their multiple interactions with other actors (such as between research, education, and innovation and the channels used). This analytical approach provides a suitable toolkit for research, policy making and institutional strategy development. However, while the approach refers to the linkages between the individual dimensions it hardly takes into account the fact that any linkage between actors is strongly determined by the individuals who perform the actual interaction and act as gatekeepers according to their own intentions and ambitions. Furthermore, increasing collaborations between actors in education, research, and innovation as well as in framework design have already led to new modes of learning, researching, and teaching — hence we can talk about an “opening up” of the KT. In addition, established modes of collaboration are changing from mostly bilateral towards multilateral relationships between the different KT corners. Moreover, the nature of collaboration is shifting towards integrated collaboration meaning that while collaboration was previously initiated and implemented with a precise and narrowly defined scope, current collaborations are broader in scope and have bigger ambitions and expectations of all parties engaged. A broader collaborations' scope naturally imposes new challenges on the parties involved which go beyond scientific or engineering competences.

The paper is focused on the figure of ‘Gatekeeper’, on those that would be viewed as one of the most proactive agents of the KT. Gatekeepers in this respect are taking different roles which are dealt with in the paper. These roles are looked at in our attempt to answer the following research questions:

- 1) Gatekeepers act as *information providers and selectors*. In this regard, gatekeepers influence the amount and quality of information to be disclosed to the receiver i.e. universities. How do gatekeepers decide what information to disclose, to whom, and by when?
- 2) Gatekeepers function as *enablers of strategic change* at research institutions. How do universities and research organizations respond to changing stakeholders' requirements with organizational and managerial strategies?
- 3) Scientific community members frequently become experts in certain topics which enables them to take on the role of gatekeeper, yet little is known about their personal characteristics. Therefore the paper analyses:
 - a. Which *social and personal characteristics* allow community members to become “gatekeepers” in their field of expertise?
 - b. What are the *key objectives* of gatekeeping?

The paper is structured as follows. First we discuss the meaning of gatekeeping in science, technology and innovation and develop the major fields of interest for empirical analysis. Next, we present our survey methodology. Subsequently, we introduce our survey findings. Finally, the last section discusses our findings and conclusions.

2. Gatekeeping in the Knowledge Triangle

2.1. The of meaning team's human capital for the Knowledge Triangle

The meaning of innovation has changed in industry during the initiation and widespread diffusion of the open innovation model. Although the basic principles of the innovation management process have remained largely the same over recent decades, the role and meaning of different sources of innovation and the increasing importance of

some exploitation paths have, however, altered (Huizingh, 2011; Dahlander and Gann, 2010). It has become obvious that the human resources and their skills are the most valuable asset for any kind of innovation, thus the people involved in innovation can be viewed as knowledge holders with different educational and professional backgrounds (Dettmann et al., 2014; Carayannis et al., 2015; Meissner, 2015). This emphasises the importance of teamwork for innovation because teams have access to a broader spectrum of knowledge than individuals. Thus, it is assumed that the availability of knowledge and skills increases in a team which in turn presumably raises the likelihood of successful innovation. However, the chance of innovation from teams depends on overcoming obstacles.

First, competition within teams over an individual's knowledge and skills advantage is important. Human resources strategies often place special emphasis on knowledge generated and applied by individuals which in the long-term does not support knowledge sharing. Simultaneously, strategies formulate incentive schemes to encourage knowledge sharing between team members but little attention is paid to the actual skills required for sharing and managing knowledge effectively. Second, team members' educational and professional background is important. Successful team work involves integrating complementary knowledge and competences to leverage the innovation potential from teams with diverse community backgrounds as in the case particularly of collaborative undertakings (Doz et al., 2004).

The utility of actor-oriented approach to analyse innovation systems was highlighted on repeated occasions. In particular, Markard and Truffer (2008) distinguish between contributions of organizational, group and individual actors to innovation system performance and dynamics. Yet the difficulty of integrating diverse kinds of knowledge remains a challenge because the complementarities between different knowledge communities are not guaranteed; on the contrary, a mismatch is likely (Fallick et al., 2004). Communities can vary in terms of the degree of formalization, openness, and mechanisms employed for operations and communities' strategic intentions, thus corporations tend to create and influence communities according to their interests and ambitions (West and Lakhani, 2008; Almirall, 2008). In a broader community sense, it can be argued that suppliers are becoming ever more important not only as sources of but also contributors to innovation and commercial success (Harison and Koski, 2009; Dahlander and Gann, 2010; Lee et al., 2010; Huizingh, 2011; Chiaroni et al., 2011; Van den Biesen, 2008). Consequently, although innovation results from combining knowledge and information towards use and application may initially seem easy to manage, it becomes more complex when integrating market and customer knowledge.

2.2. Gatekeeping as effective means to ‘embed’ universities to the KT networking

The KT framework calls for the integration of research, education, and innovation to foster synergies between various missions and objectives of universities. This development gives an indication about the potential of education for innovation beyond the existing correlation between human capital, productivity, and economic growth. Education at all levels is changing pure learning towards complementary learning, with skills for using and applying knowledge in multiple environments. However, Miller et al. (2008) show that education systems today are adapting slowly to the learning society. As they argued, the issue of changing the underlying conceptual model is not an issue which relates only to universities but also includes primary and secondary education, and hence, one should be cautious when experimenting in these fields. The challenge is to develop educational concepts for primary, secondary, and tertiary education, and for life-long learning initiatives which are seamless and focused on basic competences (Brown, 2015; Jonsson et al., 2015; Eikeland, 2013). In this respect, universities are confronted with redesigning their educational programmes to include training of skills emerging from the shifts in the KT model which are

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