

Chapter 4

The Triple Helix Model: Evidence in the Internationalization of the Health Industry

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ABSTRACT

The chapter focuses on the role of the Triple Helix model that binds companies/business associations with the universities/research centers and the government at different levels, which has been widely used for policy purposes. This work examines the internationalization process of firms within the context of global value chains, and the study case is the Health Cluster of Portugal. The authors show that the recourse to the model is relevant to understand this industry, most notably in the regional context. However, on the basis of the case study, not all aspects of the relationships within the model attain the same level of satisfaction. It is concluded that the model enables the associated firms to more easily absorb the impact of the 4th Industrial Revolution but important challenges remain in the advance of this process.

INTRODUCTION

The internationalization of firms is a process that involves, whether directly or indirectly, companies, business associations, the financial system, universities and research centers as well as governments and their autonomous institutions. However, there are operational differences between all these participants that reveal varied objectives and distinct ways of accomplishment. Additionally, the complexity of a globalized world in rapid transformation highlights the increasing risk of national and regional strategies and resource obsolescence, forcing the multiple stakeholders to deepen relations and to share experiences and knowledge with each other.

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The Triple Helix Model

On the other hand, presently, the internationalization of companies and economies entails increased requirements due to the predominance of global value chains (GVC). Learning, working and competing must be seen not only as an integrated ecosystem composed by a diversity of actors but also as dynamic that proves simultaneously collaborative and competitive. The diversity and the density of these involved actors become even more relevant when seeking to understand the dynamics of technological clusters, at the level of innovation as well as its efforts towards internationalization. This finding aligns with the theory developed by Etkowitz and Leydesdorff (2000), which states how observations of international experiences report that the development of technology clusters requires close interaction between universities, governments, companies and financial operators, according to a virtuous model of collaboration known as the Triple Helix.

Moreover, the technological cluster (or industrial district in the Italian terminology) encapsulates the “geographic areas, usually at the sub-regional level, characterized by the presence of universities that have developed excellent research in some scientific fields, large companies that concentrate activities based on knowledge of the territory and/or a network of small and medium-sized enterprises able to apply and develop technological innovation” (Mele et al., 2008).

The robustness of any technology cluster is rooted in a Triple Helix philosophy, and will necessarily also rely on “the availability of qualified human resources, a strong entrepreneurial spirit and high birth rate of spin-offs resulting from public research, as well as the availability of qualified professionals in venture funding to support high-tech initiatives, completing the picture of actors that contribute to characterizing the vitality of an industrial district [technological cluster]” (Piccaluga, 2004; Bonaccorsi & Nesci, 2006).

It is the case, for example, of Panama. Being an important logistical hub because of its central geographical location between North and South America as well as a central passage between Atlantic and Pacific Oceans, with infrastructure including:

- Transportation,
- Electric power generation,
- Clean water, and
- Internet connectivity within Panama City,

the government decided to positioning the country as a key regional player in terms of a knowledge-based bioscience sector. In this context, a synergetic coordination with several global stakeholders has been developed (Dettenhofer & Hampl, 2009). According to these authors, this decision required that private companies and research institutions have generated products and services to sell, increased the student population trained in these fields, and employed graduates as well. The government also has coordinated a National Strategic Plan for the Development of Science, Technology and Innovation 2006-2010 aiming to provide a specific orientation for the growth of a knowledge-based sector of science-related industries. With this background, it has been possible to generate diagnostic services, medicine and medical devices, beyond to upgrade agricultural technologies, all contributing to the improvement in quality of life of the population. In line with Brown and Duguid’s perspective (2002), referred to by Dettenhofer and Hampl (2009), the success of companies will depend on the ability of organizations to capitalize on local and regional actors and built a mindset focused on the local and foreign markets.

Also the e-government system emerges as a pivotal case in the management and delivery of public services as a way to improve its effectiveness and efficiency. Khan and Park (2013) focused their work

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