

Chapter 12

Organizational Configuration and Relationship With the Environment: Case Study of the Science and Technology Park of the University of Porto

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ABSTRACT

This chapter aims to address science and technology parks as organizational structures that promote links between universities and start-up companies. The authors conducted a case study to the Science and Technology Park of the University of Oporto (UPTEC), based on an interpretative and comprehensive epistemological point of view and a mix-methods approach. The analytical focus was on studying the genesis and development of this STP, its internal organization—functional areas and service range—and its different roles. This case study highlighted the benefits of the development of internal subsystems in a STP, which focused mainly in the incubation role. It also stresses UPTEC as a strong illustration of the triple-helix principles. At the same time, this case presented an imbalance in importance of those subsystems and a lack of result tracking as the biggest challenges faced by this STP.

INTRODUCTION

The end of the twentieth century marks an important transition of the economic and organizational world to the so-called paradigm of globalization, characterized by the frenetic pace of technological development. Such context has forced organizations to become more flexible both from the point of view of their internal management, and of their relationships with the external environment. This was accomplished

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namely through a more horizontal relationship with customers and suppliers, the valorization of networks, a preference for project operations, and an emphasis on information and knowledge systems (Castells, 2007; Höpfl, 2006; Kóvac, & Castillo, 1998).

Science and technology parks (STPs) materialize in this scenario of extreme competitiveness and instability, in which the new companies, in particular, experience great difficulties in surviving during their first years. Usually, STPs seek to address such constraints. They emphasize business relations with research and development centers, particularly those linked to universities, in addition to protecting start-up companies.

The beginning of the twenty-first century is marked by the rapid proliferation of this type of organization, a fact that may have been encouraged by the recent economic crisis. So far, theoretical inputs on the subject have not followed a similar pace. Very little is known about the organizational structures, roles and results achieved by STPs. Portugal is no exception. This article intends to answer some of these questions¹. It focuses on the case of the Science and Technology Park of the University of Porto (UPTEC). The UPTEC is located in Porto, the second largest Portuguese city, where the University of Porto (UP), one of the country's most prominent universities, can also be found.

Thus, the main purpose of this paper is to discuss current debates regarding objectives and practices of STPs, while exploring empirical avenues of analyzing this research object. A first section will further detail the theoretical frameworks that encompass the discussion of STPs in sociology or management. The following section will present the case-study methodology that supports this research, followed by a discussion of how the collected data intertwines with previous research. A final section addresses pending questions and possibilities for future researches.

SCIENCE AND TECHNOLOGY PARKS: STRUCTURES AND ROLES

As structures oriented towards the growth of companies, STPs emphasize the latter's inclusion in contexts favorable to their development and innovation, particularly by offering them the opportunity to contact with research and development centers. Usually, they offer a close relationship with a university, leading to a fruitful interaction between universities, research and development (R & D) institutions, companies and the market. This results in a broader concern, not only about the companies they are devoted to, but also about local or regional economic development, since due to their usual location in a given geographical area (Phan, Siegel, & Wright, 2005; Testa, & Luciano, 2012) they may act as remarkable pull factors for that region.

Proximity to renowned infrastructures, besides allowing the development of products or services in addition to the transfer of technology and knowledge to society, aims to improve and assist the transition between the university world and the market. This also justifies the STPs' incubation role. Wilber and Dixon (2003), for example, highlight three factors that encourage the failure of new businesses: (1) at the *economic* level, the inability to generate satisfactory profit, or staying in a local economy with little vitality; (2) at the *financial* level, the insufficient amount of available capital, or the large amount of financial charges; and (3) at the level of *competencies*, the lack of experience in, or knowledge of the business area and matters concerning its proper management. It is in this context that the role of STPs as business incubators becomes particularly relevant since a start-up will need extra assistance and support, for some time, in order to develop properly and avoid premature death.

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