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TPM “MARIO VERONESI”, AN EXAMPLE OF SUCCESSFUL HIGH SPECIALIZED TECHNOLOGY PARK FOR GROWTH AND RESILIENCE OF A REGIONAL INNOVATION ECOSYSTEMS ON BIOMEDICAL FIELD

Practical case

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Abstract text:

Purpose

The present work is focused on the analysis of the TecnoPole Mirandola (TPM) “Mario Veronesi” and its specific ecosystem, the Mirandola biomedical cluster. TPM is a research and innovation centre, born in 2015 after an external shocking (trigger) event, i.e. an earthquake in 2012, and promoted by the Regione Emilia-Romagna (RER), together with a group of locally based biomedical companies and with a strong scientific connection with the University of Modena and Reggio Emilia. TPM is actually promoting the creation of a Scientific and Technology Park (STP), which will favour further collaboration between institutions and industrial sector (fig.1). The paper aims at deepening how two distinct trigger events have influenced the birth of the TPM and the way its boundary spanning activity has been able to evolve over time to cope with a second trigger event, the COVID emergency in 2020. The paper deals with the role played by TPM in supporting successfully biomed companies’ innovation during the crises and ensuring the overall cluster resilience

Originality

and

value

The interest for the analysis of the TPM resides in the fact that both its birth, within the Mirandola biomed ecosystem, and its evolution were greatly affected by two different external shocking trigger events. The first one was the 2012 Mirandola earthquake, which caused 27 victims and which is considered as one of the clearest examples of “economic earthquake”, since the disaster hit all the biomed companies located in the territory. The second one has been the recent COVID-19 emergency. In the paper, we analysed how TPM had an important role in supporting innovation after the 2012 earthquake and even in changing some of the logics behind the Mirandola biomed companies’ innovation strategies. In Figure 2 all the main actors and activities involved in the innovation ecosystem are highlighted, with the role of TPM as the key boundary spanning space.

Design

and

methodology

To identify the features of Mirandola ecosystem and the role played by TPM since 2015, we analysed the cluster evolution, its development and the main emerging characteristics in terms of mainly adopted innovation models (fig.3). To position the supporting role of TPM, we identified 4 phases, the cluster foundation (from '60 to '80), the consolidation (from '80 to '90), the coordination and internationalization (from '90 to 2012) and the post-earthquake (after the first trigger event, from 2012, up to the first months of 2020).

Results

and

findings

In the case of Mirandola cluster, we observed that the earthquake was the initial trigger event that accelerated the TPM creation. In its initial phase, TPM was aimed at restoring relationships and establishing new collaborations between all the entities located in the cluster (companies,

universities, regional agencies). TPM was designed as a collaborative space where companies operating in the cluster, both large firms and SMEs, could be supported in their effort: a) to face the short-time consequences of the natural disaster; b) to capitalize funding opportunities from national and regional policies; c) to explore new ways of collaboration, especially at the R&D level, with a direct and strong support of university laboratories established within the TPM. Then, a second trigger event, has revealed the importance of TPM boundary spanning role and its capacity to cope with crisis event by supporting the overall cluster resilience. During the COVID crisis, TPM exploited its previous experience and its specific capabilities to cope with external shocking events. First of all, TPM acted again as a boundary spanner to support the rapid establishment of collaborative activities among many companies of the biomedical cluster, by favouring the integration and coordination between the dramatically changing institutional environment and the industrial cluster. Through its activity, TPM was able to reduce the level of perceived uncertainty connected to the COVID emergency and to promote the overall cluster resilience. Furthermore, TPM was able to accelerate the process of diversification from non-biomed sectors, extending the production capacity of the cluster and building new R&D based collaborations with new companies and research centres, inside and outside the Mirandola area. Based on recent findings, we propose that a 5th phase has started during this COVID emergency, since we are observing some other changes in the TPM activity, both at the cluster/regional and at international level.

Impact

After the first trigger event (earthquake) the results reported are:

- Collaboration with more than 300 entities (SMEs, MNCs, research centres);
- Fundraising support (over 13 million euros were obtained, for 31 million of investments);
- Generation of ideas and R&D support has led to the birth or has attracted 10 new companies;
- Several projects and feasibility studies in collaboration with companies and the local healthcare system were realized;

During COVID emergency, results are:

- More than 400 materials to be used for chirurgical masks was tested;
- Several companies were supported to validate their processes and systems;
- Companies within several value chains in the cluster increase their production capacities to respond to healthcare needs in terms of medical devices;
- Biomedical district and TPM gained much more visibility across Italy (several publication and contacts are going to be established between companies and R&D centres).

Transferability

The case is aimed at better understanding an innovation ecosystem response to a crisis event. Within a specific innovation ecosystem, the Mirandola district, that can be considered as a system of relationships that are formed between actors or entities whose functional goal is to enable technology development and innovation (Jackson, 2011), we have identified the boundary spanning role of a research centre, the TPM. Its main characteristics and activities, at the basis of the overall cluster capacity to cope with a crisis event, could be transferred to other ecosystem.

Owner:

Science and Technology Park of Mirandola - TPM "Mario Veronesi" is managed by Fondazione Democenter-Sipe in collaboration with University of Modena and Reggio Emilia. Democenter-Sipe Foundation (www.democentersipe.it) collects institution, trade associations, banking foundations and more than 50 local companies. It has 3 separate branches located in different areas of Modena province. In particular, TPM is located in the Mirandola biomedical district (Modena, Italy) which is one of the main important medtech district at international level; it comprises more than 90 enterprises (spanning from multinational to SMEs) specialized on dialysis, extracorporeal circulation, nutrition, etc. TPM (www.tpm.bio), inaugurated in January 2015, is meant to be a place where both business and technological expertise can co-work and grow together; TPM helps leverage research and development in collaboration with a network of regional High Technology Centres (<https://www.retealtatecnologia.it>). TPM is certified quality system ISO 9001 e ISO 13485.

Geographical origin:

The paper is focused on the geographical area identified as “Mirandola biomedical district”. Mirandola biomedical district is a compound of companies specifically focused on the development, production and commercialization of medical devices. The beginning of its industrial history is in the late 60s, then the district hugely developed in the 80s and 90s. Positive economical trend and competence concentration attracted several multinational and global companies to invest in the area mainly through acquisition (but also “de novo”). The 2012 earthquake and the COVID emergency given a boost to the aggregation of the district and to innovation processes occurring in the area.

References (Harvard style):

Bogers, M., Sims, J., & West, J. (2019). What is an ecosystem? Incorporating 25 years of ecosystem research.

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Kerry, C., & Danson, M. (2016). Open innovation, Triple Helix and regional innovation systems: Exploring CATAPULT Centres in the UK. *Industry and Higher Education*, 30(1), 67-78.

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Figures of: TPM “Mario Veronesi”, an example of successful high specialized technology park for growth and resilience of a regional innovation ecosystems on biomedical field



Figure 1: TPM and its evolution

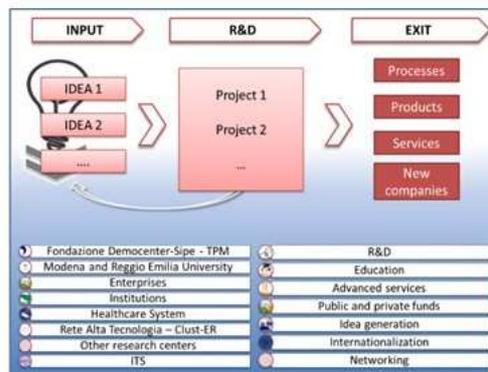


Figure 2: Mirandola innovation ecosystem

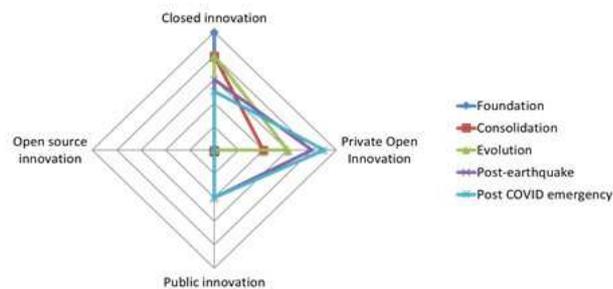


Figure 3: innovation process evolution (Huizing et al. 2011) during Mirandola cluster transformation