

Abstract 17

REDESIGNING THE UNIVERSITY EDUCATIONAL OFFER FOR THE MOTORVEHICLE INDUSTRY

Academic paper

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Abstract text:

Universities may enact the entrepreneurial paradigm also “through innovations in undergraduate education and continuing education” (Etzkowitz et al., 2000, p.314). When developing new teaching offer, universities need to evolve in its organizational structures, integrate new institutional purposes, develop new collaboration skills, and ultimately may take new entrepreneurial roles. The aim of the study is to explore how universities can strengthen their entrepreneurial role by introducing innovative educational programs through a structured collaboration with industry and policy-making spheres, an issue that has received limited attention so far (Schiller and Leisyte, 2020). By adopting the Triple Helix Model (THM) (Etzkowitz, 1993; Etzkowitz and Leydesdorff, 1995), we studied the role played by the University of Modena and Reggio Emilia (Unimore) in the formation process of a boundary space involving:

- the four Emilia-Romagna (E-R) universities (Unibo, Unife, Unimore, Unipr);
- the most renowned region-based motorvehicle manufacturers (Automobili Lamborghini, Dallara Automobili, Ducati, Ferrari, Haas F1 Team, HPE-Coxa, Magneti Marelli, Maserati, Pagani Automobili, and Toro Rosso);
- the E-R regional government.

Within the new multi-layered institutional space, new master courses in vehicle engineering were introduced, distributed across the four universities, with the aim to train a new generation of highly qualified professionals who could support the regional motorvehicle system in facing the changing innovation landscape.

We adopt a qualitative case study methodology (Yin, 2003), based on a theory-driven approach in order to detect emergent variables and relationship patterns. We specifically focused on Motorvehicle University Network of Emilia-Romagna (MUNER), an interuniversity and inter-organizations program, and on the role played by Unimore as our main unit of analysis. We collected data about actors and activities from multiple primary and secondary sources; all documentary data and field interviews have been content-analyzed and framed into an evolutionary perspective.

The MUNER program is the final step of a TH collaboration process, which took its start in 1995 when Unimore launched the first Automotive Master Course in Italy. In the early stages, Unimore exploited the opportunities promoted by regional political institutions in terms of funds and research infrastructure. Taking advantage from the collaboration context built around the mechanical engineering Technopole in Modena, funded by the E-R region, since 2000s Unimore enacted a structured set of third mission activities involving the motorvehicle companies. Under the Automotive Academy Program (2015), Unimore launched two undergraduate courses in vehicle engineering, along with a program of continuing education for automotive professionals in interaction with the industry. Along with research and teaching capabilities, Unimore over time also developed specific capabilities in identifying converging interests among institutions (Etzkowitz et al., 2000) involved in sustaining innovation in the motorvehicle industry and in catalysing the formation of a new boundary space (MUNER) for the collective redesign of the educational offer.

At the current stage of this evolutionary TH process, the advent of the MUNER program, in 2017, infused two main elements of innovation in the regional higher education engineering offer. Firstly, MUNER, being based on learning-by-doing and industry-immersive educational approaches, actively concurs to enhance the circulation of innovative knowledge at the regional level. By strengthening the university-industry direct linkages and complementing the market-based patterns of labour mobility, MUNER endows the motorvehicle industry with an increasing number of ready-to-employ graduates, thus mitigating the supply-demand mismatch in engineering workforce experienced in the mid-2010s. Secondly, MUNER contributed to reshape in a more synergistic way the regional educational system for motorvehicle engineers. No longer divided into often-overlapping single-university teaching programs, the overall formation system enjoyed significant economies of scale and scope at the regional level by reducing the design and administrative costs usually associated to the creation of new academic courses and by maximizing the proximity advantage related to the supply-demand matching at a more congruous territorial level. Within an evolutionary TH perspective, we observed how Unimore contributed to the extension of the variety and effectiveness of knowledge transfer towards the motorvehicle industry. By redesigning over time its educational offer in line with changing needs and by continuously nurturing the knowledge transfer linkages with companies, Unimore increased its ability to reduce the cognitive and institutional distances with all the other institutions interested in courses redesign. This contributed to make boundaries with industry and policy-makers more permeable and open to share people, facilities, and knowledge at a wider regional level. Findings suggest that acting as an entrepreneurial university implies more than training graduates who have the skills to satisfy the needs that contingently a given labour market requires (Schiller and Leisyte, 2020). It implies also playing a role in creating new intersection spaces where university, industry and government may interact to create value in a systematic way. The MUNER case suggests the importance of university teaching activity as a driver in the formation of new TH-based institutions and artefacts.

As for any on-going research project at its early development, many steps further are required. Firstly, more documental data are required. Secondly, a constant monitoring of the MUNER program's results is required. Thirdly, results should be interpreted cautiously because of low generalizability of case studies. Nevertheless, we believe that our findings could guide the creation of cross-institutional educational programs and inspire other universities in supporting the local industries and the regional innovation system (Etzkowitz et al., 2000).

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