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A Knowledge Management Approach for The University-Industry Collaboration in Open Innovation

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Abstract

In the knowledge-based society, universities have re-considered the traditional academic roles, and placed them in a broader context as part of its new role in promoting innovation. Based on existing models there has been developed a framework to analyze how universities support their implication and contribution to local economic development. The proposed approach refers to the university-industry collaboration (UIC) based on the knowledge transfer processes in order to increase their contributions, and influence the socio-economic development at the local level. The framework was represented as an ontology consist of five dimensions and 57 relevant items for potential UIC that were described in order to facilitate the decision-making process when establishing a particular type of contract or project. The main ideas debates in the article are related to the new role of the university in the knowledge-based society; knowledge and innovation transfer processes; the UIC ontology design and development.

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1. Introduction - the new role of the university in the knowledge based society

In the knowledge-based society, universities play an enhanced role in innovation as entrepreneur. They have re-considered their traditional academic roles of social reproduction and extension of certified knowledge, but placed them in a broader context as part of its new role in promoting innovation. Based on the tri-lateral networks and

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hybrid organizations model there has been developed a framework to analyze how universities developed their implication and contribution to local (regional) economic development (Etzkowitz and Leydesdorff, 2000a; Etzkowitz et al., 2000b; Tornatzky, et al., 2002) confirmed by (Meyer et al., 2014) (Figure 1). The Innovation U framework encompasses the boundary-spanning structures that reflect the universities relations with industry, local state, and government through programs development activities of state and local economic development organizations, industrial advisory boards, and councils with business community. These mechanisms are expected to contribute to economic development by producing locally captured (technological) outcomes. These outcomes can be structured in three university roles: education (smart people), research (new knowledge), and the knowledge transfer to society (entrepreneurship, knowledge, technology, expertise).

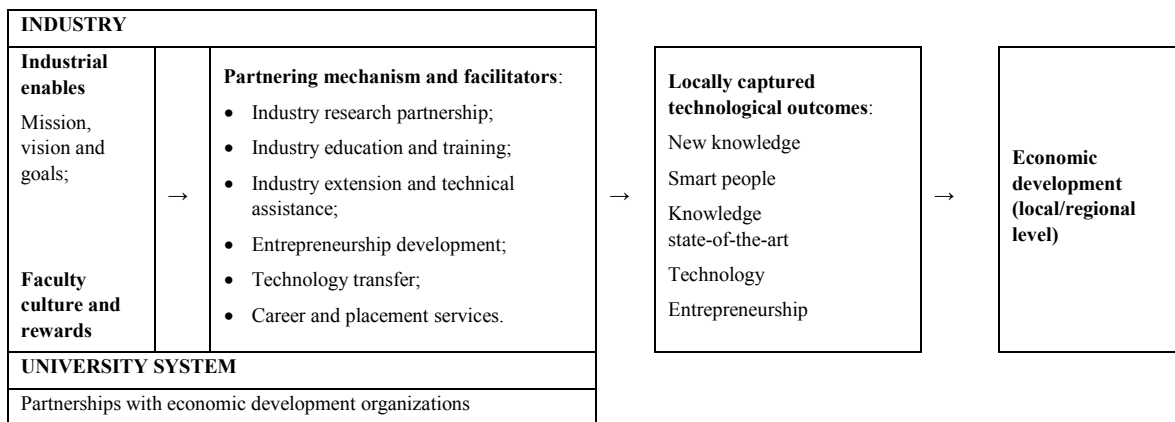


Fig. 1. Innovation U – Conceptual Framework.

The entrepreneurial outcome can be considered as a result of the university-industry-government relationship. According to (Ropke, 1998), the university itself can become entrepreneurial, the university members can become entrepreneurs, and the university interaction with the region can follow entrepreneurial patterns (Van Looy et al., 2011; Gibb et al., 2013).

In the last years, the literature has described the universities as knowledge transfer organizations (KTO) (Geuna and Muscio, 2009; Bodas-Freitas, 2013). The main subjects of knowledge transfer between universities and industrial organizations are related to research collaborations, intellectual property rights (most referring to patents) and start-ups, spin-offs companies establishment (Watanabe, 2009).

Many universities have stated to focus on establishing strong links with knowledge users by facilitating technology transfer through commercialization of academic knowledge (Etzkowitz et al., 2000b; Gulbrandsen and Sliperséter, 2007; Siegel et al., 2003; Siegel et al., 2008; Perkmann et al., 2013). According to the references, commercialization is considered a prime example for generating academic impact and benefits (financial and prestige) because it is an immediate, measurable market acceptance for academic research results (Markman et al., 2008). In order to support commercialization, many universities have established specialized structures, such as technology transfer offices, science parks and incubators (Clarysse et al., 2005; Siegel et al., 2003), and they have created internal rules and procedures to facilitate this activity (Thursby et al., 2001).

The governance of knowledge transfer process between universities and industry has been subject of different researches (Geuna and Muscio, 2009; Muscio et al., 2012; Perkmann et al., 2013; Schoen et al., 2014). The main idea debated is related to the need of a new knowledge transfer model, more efficient in the conditions of the new knowledge-based economy (universities has become knowledge transfer organizations and they are responsible for these processes and for monitoring, centralization). Nowadays, the knowledge transfer activities management is mainly allocated to technology transfer and is focused especially on assessing and protecting intellectual property and making it available to industry (Perkmann et al., 2013).

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