


## Chapter 2

# Factors in Collaborations Between Technology Firms and Universities

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### ABSTRACT

*Collaboration between technology firms and universities is a concern that requires an in-depth study. In this chapter, a review was done to investigate factors affecting technology firms and universities. The review underscores several factors that should be considered in the said collaborations. These are institutional factors, relationship factors, output factors, and framework factors. Institutional factors were identified as resources, structure, and willingness to change. Relationship factors were identified as communication, commitment, trust, and culture; output factors were identified as objectives and knowledge and technology transfer; framework factors were listed as environment, contracts and intellectual property rights, and geographical distance. Future research should investigate the relationship between different factors and different phases of a collaboration. Further investigations should be done to look at the effect of collaborations between universities and technology small and medium-sized enterprises.*

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## **INTRODUCTION**

Collaboration between technology firms and universities has been an increasingly key issue for some time and researchers have devoted considerable effort to finding the determinants of their success (e.g. Hillebrand and Biemans 2003; Parkhe 1993). A different form of collaboration with presumably different success factors is the one between technology firms and universities. These actors have different goals and experience different constraints. This contrast potentially enhances the value of collaboration but it is also a source of complications. Results from the literature on this type of collaboration do not necessarily carry over to this setting. This chapter, will investigate the success factors of collaboration between technology firms and universities.

TFs and university collaborations (TFUCs) have a long by strong tradition in several countries worldwide (Ankrah and AL-Tabbaa 2015) and universities play an important role in achieving economic growth in today's knowledge-based societies (Pinheiro et al. 2015a). The ambition of policymakers and universities to develop *third missions* in addition to the two traditional core missions of research and teaching, and to commercialize academic knowledge, for instance through continuing education programs, patenting, technology transfer offices, science parks or incubators has increased the relevance of such collaborations (Marhl and Pausits 2011; Perkmann et al. 2013).

There are many reasons for Technology Firms and university collaborations, for example, companies profit from highly qualified human resources such as researchers or students (Myoken 2013); they gain access to innovation, technology and research (Barnes et al. 2002); and they can use advanced technology infrastructure (Ankrah and AL-Tabbaa 2015). According to some studies, up to 10 per cent of new innovations or processes are based on the contribution of academic research (Bekkers and Bodas Freitas 2008). Universities, in return, benefit from additional funding provided, from access to industry equipment or from licensing or patenting income (Barnes et al. 2002). In fact, collaboration with technology firms has become inseparable with university funding and the funds from international organizations and business enterprises for R&D in the higher education sector nowadays represent a viable source in many countries (OECD 2015).

In light of these effects and financial relevance, it is important to maintain a successful management of TFUCs to realize the advantages on both sides. While the number of research articles has increased in recent years, there is not yet a systematic overview of success factors that emerge from a detailed analysis of individual studies. Most studies do not directly address this question. Case studies, for example, generally only refer to individual lessons learned from collaborations. Recent reviews summarizing the literature have mostly focused on other issues:

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