

## University or non-university network? Finding partners during technology commercialisation from university

In recent years, there has been a rapid rise in efforts of creating spin-offs from universities. This fits into a new or renewed trend in which the role of university is highlighted as a catalyst for economic growth by bolstering innovation in the region. While there is an increasing attention on the creation of university spin-offs, there is little known about the detail mechanism of spin-offs creation, especially the process during the technology commercialisation. University spin-offs often receive a wide range of supports from their interconnection with university staffs, academics and researchers. The relationship between spin-offs and their university contact have often based on trust and friendship. This relationship offers a stable support and provides access to university knowledge and facilities. In addition, university spin-offs also start to extend their network with people from industry. These new contacts offer access to diverse resources, new information and opportunity.

In expanding networks during commercialisation stage, spin-offs have often faced two choices, connecting with new non-university contact or focus on university contact. Non university contacts diversify information and resources owned by spin-offs while non-university contact provides trust and stable support. Based on the differences of benefits offered by both types of contacts, we developed hypotheses arguing that spin-offs facing technology-related obstacles will turn to university contacts while facing business-related obstacles will derive them to connect with new non-university contacts. Business-related obstacles are emerged as a result of limited resource and knowledge possessed by spin-offs. This limitation can only be solved by diversification through inviting new network contacts. In contrast, existing network such as university colleagues can be beneficial for spin-offs in solving their technology-related obstacles. However, we also argue that spin-offs need to balance their network composition. This hypothesis was tested using several innovation and business performance indicators. In other words, the relationship between network and performance will represent as a curvilinear curve. Using data collected from 100 spin-offs in the Netherlands and Norway, we tested the hypotheses. The findings show that the hypothesis on the impact of non-university contacts as new network partners due to business-related obstacles is accepted while the presence university contacts is accepted to some extent due to the relatively low significant level. Regarding the third hypothesis, the findings show that spin-offs with balanced network have experienced a better performance than spin-offs which put more concentration on one particular of the network. Overall, we can conclude that entrepreneurs expand their network in response to obstacles.