

Does learning from prior collaboration help firms to overcome the “two worlds” paradox in university-business collaboration?

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Businesses increasingly form collaborative links with external organisations for the purposes of innovation. These collaborations may provide access to knowledge, technology, capital, skills etc. that contribute to the innovation process and help reduce the risk of innovating. In this paper we examine the university-business collaboration pipeline. What contributes to the formation of such collaborations? How do they influence innovation outcomes? How do they influence the commercial benefits firms derive?

Key findings

Universities and businesses operate in different ‘worlds’ with strategic and organisational factors leading to tensions in the focus, timeframe and exploitation of collaborative research. As a result, universities tend not to be firms’ ‘preferred innovation partner’, with businesses more likely to collaborate with either customers or suppliers. We demonstrate that where collaboration with universities does occur this has a strong positive effect on firms’ ability to develop radical new-to-the-market innovation. Commercial outcomes at the end of the innovation pipeline differ markedly by firm size, however.

Four key findings emerge:

- At the start of the pipeline firms are more likely to form university collaborations where they can build on learning from previous collaborations with suppliers and customers.
- Where businesses form collaborative links with universities, then these tend to persist over time. Further, where businesses have undertaken new-to-the-market innovation previously they are also more likely to collaborate with universities.
- Further down the pipeline, university collaboration is associated with a 21-22 per cent increase in the probability of undertaking new-to-the-market innovation, an effect which is similar in size for firms in all sizebands.
- End of pipeline, commercialisation outcomes differ markedly by sizeband. For medium and larger businesses, sales of new to-the-market innovation increase by between 12.3-15.9 per cent as a result of university collaboration. For small businesses we find no significant sales effect suggesting that they derive few commercial benefits from their collaborative innovation.

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Our analysis is based on data from the UK Innovation Survey covering the period 2004 to 2012. We develop dynamic models of firms' learning from prior collaboration and the impacts of university-business collaboration on new-to-the-market innovation. New-to-the-market innovations are important as they create the potential for creative destruction and first-mover advantage for the innovating firm. Examining the effect of business collaboration with universities is important for at least two reasons.

First, innovation leadership in the UK is limited with only around 10 per cent of businesses introducing new-to-the-market products or services, with little improvement in this proportion over the past decade. Second, government discussions have changed recently from emphasising 'collaboration' between universities and businesses to stressing the need for 'integration' if significant returns on the annual £6bn public investment are to be realised. This integration requires a new model of co-operation between universities and businesses in the creation and exploitation of knowledge.

Policy responses

Our findings emphasise the value of university-business collaboration for new-to-the-market innovation and its commercial outcomes. They also emphasise the broader and more effective collaboration pipeline for medium and larger firms and blockages in the pipeline for smaller companies. Specifically, and despite learning effects, small firms remain significantly less likely to collaborate with universities than larger firms. Given the potential benefits, public intervention to help small firms overcome these entry barriers remains important.

Where they do collaborate with universities the benefits in terms of the increase in the probability of new-to-the-market innovation is similar for small and larger firms. This element of the collaboration pipeline appears to work well for all firm sizes. More problematic for small businesses is that collaborative innovation is failing to translate into increased sales. This could usefully be a focus of more detailed investigation, and potentially intervention to support the commercialisation of new-to-the-market innovations by small firms.

Full paper link:

<http://www.enterpriseresearch.ac.uk/our-work/publications/?type=whitepaper-research>