

# THE IMPORTANCE OF UNIVERSITY-INDUSTRY COLLABORATION

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*В современном мире важное значение отводится задаче интеграции науки, образования и инновационной деятельности. Считается, что это является одним из ведущих факторов развития экономики и общества. Потребность в высококвалифицированных и инициативных работниках обостряется в новых условиях и ведет к естественной интеграции вуза и основных работодателей, потребителей их услуг. Именно интеграция позволяет работодателю эффективно участвовать в формировании и оснащении программы обучения, закладывать в условия специализации свои технологические основы, активно знакомиться с будущими выпускниками, привлекая тех для прохождения практики и участия в проектах по своей проблематике. Данная статья объясняет необходимость взаимодействия вуза и производственных предприятий.*

Nowadays universities are seen to be one of the key actors in national innovation systems. Firms reach out to universities as a source of knowledge and support for their innovative activities. They use colleges and universities as partners in collaborative research projects and as sites for recruiting trained and skilled problem solvers. The movement of many firms towards more open and distributed models of innovation creates substantial opportunities for universities to increase the breadth and depth of their role in the innovation system of higher education. Moreover, universities themselves have undergone considerable changes in terms of their systems of managing their intellectual property and industrial engagement.

As for governments they have also given greater attention to the nature of interaction between universities and industry, seeking to use the potential economic value of universities' knowledge and skills for economic development. And it can be an opportune moment to explore the nature of collaboration between universities and industry.

The nature and type of university-industry interaction also differs by industry and the size of the firm. Previous research has shown the university-industry interaction is greatest, as might be expected, in science-based industries, such as pharmaceuticals. In other sectors, such as construction, the rate of collaboration is much lower and often highly concentrated in the hands of the few leading firms. Moreover, the size of the organisation has been found to play a key role in influencing the decision to work with universities. Research has shown that large firms are several times more likely to draw knowledge and information from universities. This is partly because many small firms are highly resource-constrained and therefore lack the managerial time and effort required to develop collaborative arrangements with higher education. There are, of course, many small science-based firms that may have formally spun out of universities or university research with

strong links to universities. But the number of these firms in the wider economic system is small and, for most small firms, working with universities is a bridge too far. Besides, for many small firms, university researchers are working on problems that may be far removed from their concerns and therefore it is unclear that there is a good distance between their needs and university researchers.

The industrial sector and its relationship to universities is complex and varied. Each of the institutions has a unique history and a pattern of engagement with practice, shaping sharp differences in attitudes to engagement with industry across universities. Such differences are not restricted to the divide between research intensive and teaching universities, but even among research intensive universities the extent and type of engagement with industry differ sharply.

The benefits that businesses get from interacting with universities are varied. Some businesses see the benefits of working with universities for their short term, specific needs, such as introducing new products and processes, whereas others have very long term orientation and do not cooperate with universities for help with an immediate application.

It is also possible to see the benefits of working with universities as involving a mixture of long and short-term benefits, such is the multifaceted nature of collaboration between universities and industry. In this sense, working with universities can allow organisations to both explore and exploit new technological areas.

We should mention that the most important benefit of working with universities is creating long-term links with the university sector. This is followed by the identification and recruitment of employees. In general, the main benefits are largely long-term in nature and focused on developing underpinning knowledge, methods or instrumentation or getting access to highly skilled problem solvers. This suggests that the main benefits of universities remain related to the talent they provide to the economic system, often embodied in people or methods. In general, the level and character of these benefits appears to be declining over time and firms are becoming increasingly focused on using universities as a site for recruitment. On the whole, the willingness to engage university partners in short-term projects is declining at the same time as the longer, less specific benefits of university research are also becoming less important.

But there are certainly the barriers to interacting with universities that involve a range of different norms of incentives and institutional barriers.

Discovering new knowledge and establishing priority for these discoveries among peers through publications largely motivates university researchers. Science remains an open system, governed largely by norms set by the scientists themselves. In contrast, industrial research is likely to be specific in orientation and firms are focused on creating private and valuable knowledge that can be used to create products and processes. In this context, industrial firms operate in a very different system where capturing intellectual property, both informal and formal, plays a key role in shaping their external engagement, in general, and work with universities, in particular.

And substantial barriers to cooperation between universities and industry are still remaining nowadays. The barriers that were most important were the long-term orientation of universities as well as the lack of suitable government programmes in specific research areas.

The barriers that were seen to be least important were a low profile of the Technology Transfer Office, finding a suitable partner, strong orientation to basic research and lack of mutual understanding.

Overall, there has been a significant rise in the barriers faced by firms working with universities. In all cases, the importance of different barriers has increased over time. This is true for both barriers related to the orientation of universities and also those related to the government support and rules and regulations. However, the greatest change in terms of barriers is the increased importance attached to the Technology Transfer Office and their perceived lack of 'realistic expectations'. Here the number of firms citing this barrier as being very important or crucial increased from 27% to 51%, which is a striking shift in a short space of time. At the same time, there has also been almost a 37% increase in the number of firms indicating that long-term orientation of universities had acted as a barrier to collaboration.

It is clear from the study that firms go to universities for talent and technology and therefore it is important to create mechanisms that support both the use of universities as a source of talent, but also of technology. Mechanisms that support the use of university research as a means for recruiting talent staff are likely to be more useful than mechanisms which focus on recruitment or research alone. We also still lack significant evidence about the movement of skilled problem solvers from universities to industry. Greater attempts to track the flows of university-trained talent through the economic system may provide new insights in the nature and scale of contributions of universities to economic wealth.

## References

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