Understanding the immediate impacts of the Covid-19 crisis

Whilst university-business collaborations to tackle Covid-19 made the headlines, NCUB was picking up signals from universities and businesses that other forms of collaboration were falling. Some labs and other collaborative spaces were closed. The face-to-face conversations, in the sidelines of conferences or in collaborative meeting spaces, ceased. Universities and businesses had to concentrate on rapid digitalisation and revised business models.

Their focus was on Covid-19 response.

To understand the impact of the crisis on collaboration, we were asked by UK Research and Innovation to gather information at a fast pace on the progress of universities and businesses in working through their stability toward greater contribution to the nation's recovery.

We conducted a series of interviews and partnered with Tomas Coates Ulrichsen, Director, Policy Evidence Unit for University Commercialisation and Innovation, at the University of Cambridge, to produce two surveys of universities and businesses. The results of these surveys will be published in early 2021, but Tomas Coates Ulrichsen offers an important overview of the headline findings of our survey in his article below.

COVID-19 and the resilience of university-business collaborations

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Universities have long played an important role in driving innovation, emerging in recent decades as actively engaged and increasingly strategic partners in the process. Through their many and varied knowledge exchange interactions with firms, investors, government departments and public agencies, hospitals, charities, and others, they work to translate novel ideas and technologies into practical applications that will drive not just next generation products and services, but also improvements to existing products, more efficient production processes, and new business models for creating and capturing value.

The COVID-19 pandemic has wreaked havoc on the ability of the UK's system of innovation to invest in R&D and innovation. Many firms have cancelled, delayed or reduced their R&D and innovation activities[1]. On the back of declining innovation activities in the UK in recent years[2], this threatens the resilience of our economy and its ability to adapt through the crisis, recover, and find ways of reinventing itself to unlock new opportunities for wealth creation[3].

How, though, has the pandemic affected the ability of universities to maintain their innovation-focused

1 Roper, S., Vorley, T., 2020. Assessing the impact of Covid-19 on Innovate UK award holders: Survey and case-study evidence, wave 1 - June/July 2020. Enterprise Research Centre and Innovation Caucus, Birmingham and Coventry, UK.

2 BEIS, 2020. UK Innovation Survey 2019: Headline findings covering the survey period 2016 - 2018. Department of Business Energy and Industrial Strategy, London, UK.

3 Roper, S., Van Reenen, J., 2020. What will coronavirus mean for innovation by firms? Economics Observatory: Questions and answers about coronavirus and the UK economy, available at www.coronavirusandtheeconomy.com/question/what-will-coronavirus-mean-innovation-firms (accessed 8.16.20).

partnerships and activities through the crisis? What are universities doing to overcome the many new obstacles to effective engagement created by the pandemic? And what can we do to enable universities to play an active and strategic role in driving an innovation-led recovery?

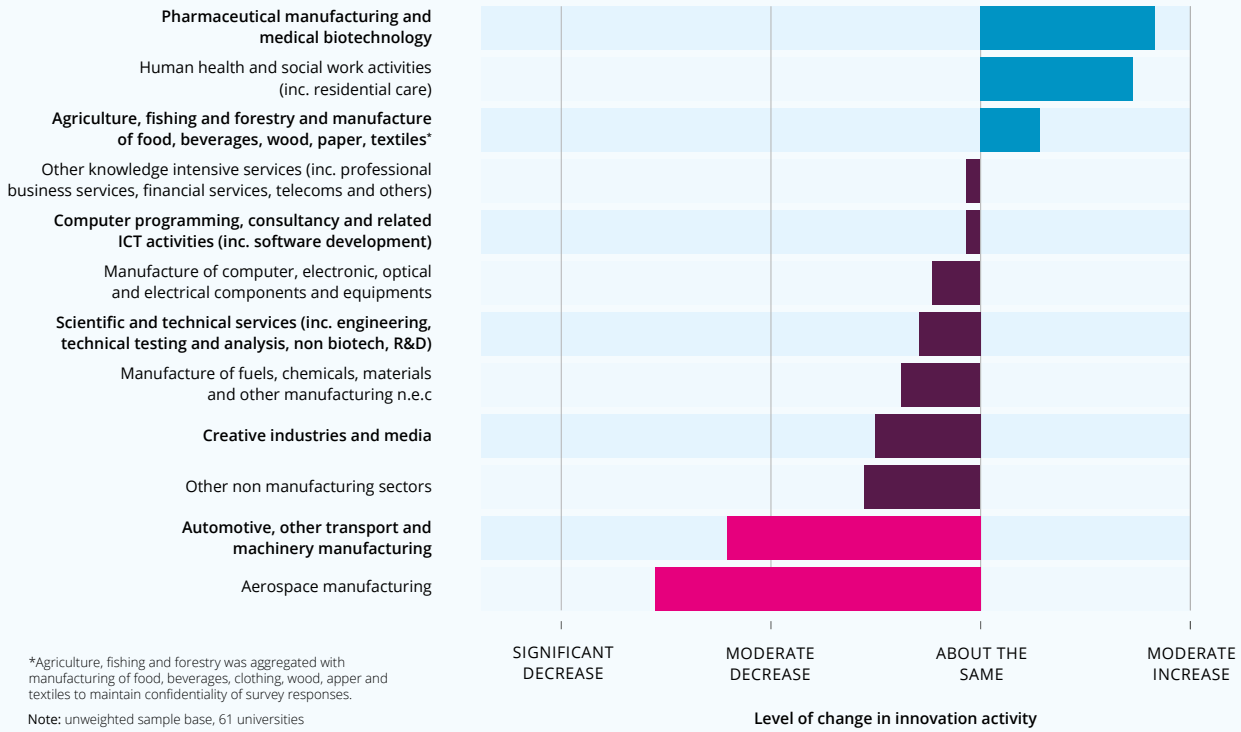
This article presents evidence gathered on these issues through an August-September 2020 survey of senior UK university leaders with responsibilities for innovation-focused activities and partnerships. The survey generated responses from sixty universities and was developed by the University Commercialisation and Innovation (UCI) Policy Evidence Unit at the University of Cambridge and NCUB.

The pandemic has severely disrupted university-business collaborations

The UCI/NCUB survey shows that the effects of the pandemic have been uneven across UK universities, with over four in ten experiencing at least moderate declines across their portfolio of innovation-related activities. A further third saw little change, while around two in ten actually experienced a moderate increase.

However, this aggregate picture masks considerable variation in engagements with different sectors of the economy. Universities experienced quite dramatic declines in their activities with sectors such as aerospace and automotive manufacturing, the creative industries, and with non-biomedical R&D, scientific and technical services. By contrast, activities with the pharmaceutical industry and with human health and social work services have been much less affected.

Figure 1 **Change in the level of innovation activity between university respondents and partners in their top three sectors for innovation-focused engagements**



*Agriculture, fishing and forestry was aggregated with manufacturing of food, beverages, clothing, wood, apper and textiles to maintain confidentiality of survey responses.

Note: unweighted sample base, 61 universities

The survey also reveals that partnerships and activities with universities' strategic partners have been less affected than with other partners. Work with SMEs has been particularly badly affected, with over half citing at least moderate decreases in activity, and more than a fifth citing declines of more than 20%.

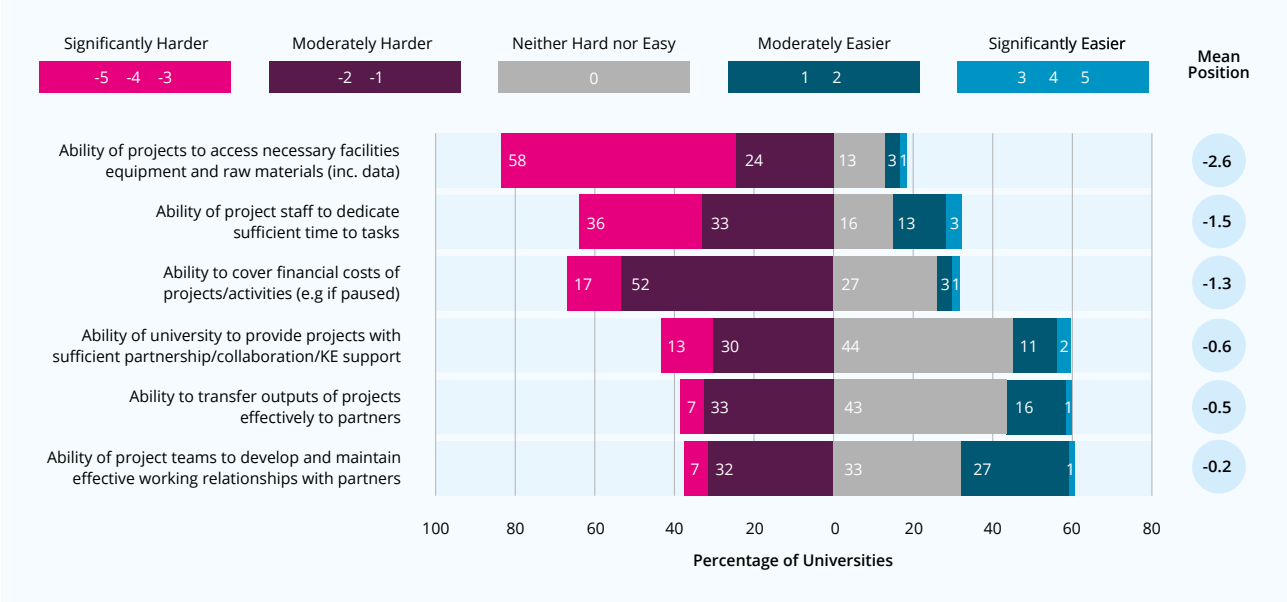
The reduction in activity was not necessarily due to projects being cancelled (yet). Rather, project deadlines were being extended, planned projects delayed, and the scale and scope of projects reduced or refocused on shorter term partner priorities. Some partners were also looking to renegotiate financial and other contractual terms. Overall the picture is one of trying to preserve projects – and hence relationships – as much as possible. The inevitable question is for how long this can continue?

A parallel NCUB/UCI survey of R&D active firms showed that firms were reducing their R&D and innovation activities with universities for a number of reasons. This included financial resources no longer available or sufficient to fund collaborations; personnel no longer being available within the partner to engage with the university; and the inability to access to facilities and equipment making it difficult for work to continue. Perhaps more worrying longer term were the 27% of large R&D active firms looking to rationalise the number of universities they worked with. This rises to 55% of those responding from the life sciences sector.

Universities have responded to the challenges of the pandemic and developed new ways of engaging to support and drive innovation

The locking down of the economy and society to address the COVID-19 health crisis meant universities had to find new ways of working to sustain as much innovation-focused activity with partners as possible. The most significant challenges universities faced in delivering these activities centred on the ability of projects to access the necessary facilities, equipment and raw materials; the ability of project staff to dedicate sufficient time to tasks; and the ability to cover the financial costs of projects with much activity paused or reduced in scale.

Figure 2 **Change in the ability of universities during Lockdown to ensure necessary resources and support are available to deliver innovation-focused projects and activities for external partners**



Confronted with these major challenges, universities worked to find new ways of working and engaging with partners. And while the pace of work established in the rush to develop solutions to Covid-19 health challenges cannot be sustained longer-term, universities responding to the survey believed that a number of innovative new practices could be made permanent to improve the effectiveness and value of their innovation engagements beyond the pandemic.

For example, the movement to online has led to some universities to report an increase in the efficiency and effectiveness of engagements such as delivering, and participating in, workshops and some types of training.

Others reported a strengthening of relationships as we switch to more visual, even if virtual, interactions with partners. The shift online also opened up new opportunities for some. Universities, and in particular those outside London, argued that they were able to engage more easily with partners further afield than pre-COVID, when the presumption was that effective engagements required face-to-face interactions.

As universities mobilised rapidly alongside partners to find practical solutions to COVID-related challenges, some developed new approaches to more effectively translate ideas into innovative applications. Furthermore, driven by the urgency of COVID, some universities and their partners found ways of dramatically increasing speed and flexibility of negotiation and implementation. Wherever possible, these advances should be preserved.

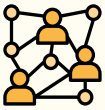
Where can we go from here?

The effects of the COVID-19 pandemic in the UK threaten the viability of many university-business partnerships, with intense financial and operational pressures from all sides. As we look forward, it is important that we take steps to maintain the ability of universities, business, investors, public agencies and other organisations in the innovation system to partner to drive innovation. In particular we need to:

Proactively support innovating organisations in the private, public and third sectors to maintain their R&D and innovation activities through the crisis, and in particular their collaborative activities with universities and others. This would help to sustain the pull for innovation by the private and public sector and through this the demand for knowledge and expertise from the university base.

Protect the ability of universities and others to invest in fundamental 'blue skies' research as well as the translational and commercialisation activities required to turn new ideas into real-world innovations. As the COVID-induced economic crisis takes hold universities may have to engage further along the innovation pathway than previously.

Funding for translational R&D, commercialisation and innovation should become increasingly challenge-driven, and recognise that skills, infrastructure, business models and supply chains may all need to be developed to realise value from the novel technology. This will require greater coordination and coherence between funding programmes across multiple government departments and agencies.



Ensure universities across the UK regions and nations have sufficient resources to play an active and strategic role in local economic recovery and reinvention. This could involve working with local partners to build innovation districts and driving local entrepreneurial activity; helping local firms solve technical problems; and leveraging their expertise and resources to support local industries find new markets and opportunities for growth.

Finally, the ability of universities to respond rapidly to the COVID-19 health crisis was enabled not just by academics redeploying their expertise to finding technical solutions to specific problems, but also by their ability to form innovation-focused partnerships to further develop and deploy them in the real world. Universities' knowledge exchange support systems, built up over the past few decades and critically enabled by the availability of long-term flexible funding, play a crucial role in enabling these partnerships to form at pace. It is imperative that we preserve this system of support as we make crucial decisions in the coming months and years about how to invest in our public research base to drive an innovation-led economic recovery and renewal.