

## What Industry Wants from Academia

Report from the PraxisUnico workshop, 7 - 8 May 2013 at GlaxoSmithKline, Stevenage

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PraxisUnico's "What Industry Wants From Academia" was the largest UK networking event of its type, with more than 70 universities and research institutes represented and 30 major technology driven companies<sup>1</sup> from a broad range of sectors presenting. The workshop was supported by GlaxoSmithKline and the Technology Strategy Board.



Partnerships with academia are becoming a core strategy for R&D in many companies and the aim of this event was to bring the people who work at the interface between industry and academia together to make new connections, and to explore current trends in the sector. The two days were packed with industry speakers describing R&D within their companies and how academic research fits into this. They positioned their companies and talked about their product or service focus and their drivers for engaging with universities. The speed networking sessions were highly successful with all speakers actively engaging. As one industry person put it “this has been the most effective event I’ve attended for meeting new contacts”.

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<sup>1</sup> See Annex 1

The keynote talks included Professor Sir John O'Reilly, Director General, Knowledge and Innovation at BIS, setting out a vision for the future keyed to the importance of UK research and Iain Gray, CEO of the Technology Strategy Board who explained the importance of UK research to business innovation. The event provided a platform for Rosa Wilkinson, Director of Innovation at the IPO to launch the report on the evaluation of the impacts of the Lambert Toolkit<sup>2</sup> and for Dr David Docherty, CEO of the National Centre for Universities and Business (NCUB) to describe his priorities for the newly created Centre.

**“the "speed networking" element was FANTASTIC! I have never collected so many valuable contacts in such a short time before”**

## **Key themes – why work with UK universities?**

Top of the list of what attracts industry to work with UK universities and research institutes is the world-class research and access to emerging talent and to expertise. But industry is getting more selective in the way it chooses to engage with the research base. An emerging theme was for fewer, stronger partnerships. These are built on research excellence and a track record of collaboration. They take time to establish. Strategic partnerships drive efficiency and enable scale, whilst in comparison the transaction costs of a large number of projects are high and unsustainable. As Rolls Royce explained, “while the order book of the company is going to double over the next few years, the company won't be doubling in size, it is looking to more smart investments”.

**“We want wit, brilliance and surprise!”**

**Mark Carver, Fuji**

Publication appears to be less contentious than it used to be as companies themselves are seeking more opportunities to publish. Collaboration with industry boosts the impact of publications. The 2011 study undertaken by Thomson Reuters for NESTA<sup>3</sup> evidenced the impact of UK publications over competitor countries and found that it was higher for papers from industry than academia. But, more importantly, the impact of joint papers is higher again.

Many companies described moving towards more open innovation, using different models to suit business needs. A striking example of this is the P&G/University of Durham partnership in which a single framework agreement underpins a range of multi-disciplinary collaborations between the two partners. The partnership now includes other companies in some of the programmes too.

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<sup>2</sup> 'Collaborative Research between Business and Universities: The Lambert Toolkit 8 Years On'

<sup>3</sup> [http://www.nesta.org.uk/publications/reports/assets/features/all\\_together\\_now](http://www.nesta.org.uk/publications/reports/assets/features/all_together_now)

A number of pharmaceutical companies described different open innovation models for drug discovery e.g. Lilly Phenotypic Drug Discovery Initiative and Target Drug Discovery Initiative. Here assay panels are made available for external investigators, with a first right of access or collaboration for promising molecules for Lilly. GSK operates the Discovery Partnerships with Academia (DPAC) programme that is a shared risk/reward model for drug discovery with academia where if GSK doesn't wish to progress the therapeutic asset it will allow the university to commercialise with another partner.

**“Academic partnership is essential for our business”**

**Regis Nhili, EDF Energy**

For Rolls Royce, the University Technology Centre (UTC) model accounts for 80% of its academic research activity. Established in 1990, there are now 28 of these strategic partnerships with universities worldwide, which enable access to people, skills and technology. In the UK these are co-funded by EPSRC and the TSB.

There is a trend for strategic partnerships to be long term. Blackberry has a seven year relationship with the Royal College of Art to pursue design in all its guises including people aspects such as social inclusion. BP has established the Institute for Multiphase Flow at Cambridge University that also draws on global experimental facilities such as the Diamond synchrotron in the UK.

Collaborations need to be managed and universities need to invest in this. Happily, this essential skill set was acknowledged to be developing well in the UK.

**“Businesses that work with academia generally achieve double the business performance of those companies that don’t”**

**Chris Firth, Thales**

Access to people and skills are a compelling reason for industry to collaborate with universities. The ability to engage with and to recruit new talent is high on the list of motivators. Companies outwith the pharmaceutical sector referenced this the most and described involvement in Doctoral Training Centres and support for schemes such as EngDoc and CASE. Often these featured as a component of a bigger partnership. Training for company staff and supply chain also emerged as a benefit through strategic collaborations with universities. Engineering companies in particular see this as a way to develop and upscale an engineering workforce

There is significant investment in co-location of company staff into universities in order to build critical mass and to leverage new opportunities and funding. For example, the BBC has a four year partnership with 80 co-located staff at UCL spanning a range of research across communications technologies, internet research, content production, user experience (UXD) and access services. At Warwick University, JLR has located approximately half of its

research team (~200 staff) at the International Digital Laboratory at the Warwick Manufacturing Group (WMG). This is the largest presence of its kind in the UK. It is also works alongside the High Value Manufacturing Catapult

A major challenge that most companies said they face is the cost of working with the research base in the UK. UK universities are, in the experience of the speakers, the most expensive with whom to collaborate. And there is very little consideration given to the non-financial contribution from industry when costing collaborative research. Whilst UK universities can compete on research excellence this is changing. As the quality of research intensifies globally and companies move R&D bases around the world, the value for money assessment and corporate investment choices will change. Sir John O'Reilly responded to this by expressing his support for full economic costing of research - which in itself makes good business sense. But he went on to say that he was sensitive to the issue and that consideration needs to be given as to how much of these costs should be borne by industry and what other sources should contribute.

**“Many universities now realise that more value comes through demonstrating impact of their work ..... than through owning the IPR “**

**Graham Thomas, BBC**

Several companies commented on the culture shift in UK universities, noting the appetite in the UK research community to work with industry to tackle real world challenges and to see their research translated into application. Many others remarked on the increasing ease of working with UK universities and several acknowledged that new initiatives like Easy Access IP were helpful. However over-valuation of intellectual property (IP) by universities still seems to be prevalent in the eyes of industry. The research base was asked to consider more realistic valuation of IP through an appreciation of development costs and time to market. Even in fast moving consumer goods (FMCG) it can take 4-5 years to get to market. Simpler agreements were favoured. For example, both P&G and GSK have negotiated and executed agreements with universities within a day. Lambert agreements have been helpful and GSK has signed over 250.

The significance of the support from UK government for industry-academic partnership was evident in the majority of the talks. Leveraged funding from the Research Councils and from TSB was regularly cited as a core enabler. Such government funding allows significant challenges that may be transformational to be addressed. Speakers observed that more generally, governments across Europe and in Asia are now driving better links between funded research and industry.

Research relationships are becoming more global. Companies are increasingly looking to invest in global collaborations that bring complementary R&D together and maximise leverage of funding opportunities. Johnson Matthey currently has strategic collaborations with five Russell group universities in the field of catalysis but in the future will be placing greater emphasis on universities local to its two new centres in South Africa and Singapore. And, while the majority of academic collaborations for UCB are in mainland Europe and UK

the company is moving more to collaborate in the USA and Asia. Collaboration where it adds value is vital – within and between universities and internationally. This is becoming more important and the research base was encouraged to do it better. If Rolls Royce can collaborate with GE, one of their biggest competitors, it can be done.

Whilst these large companies have a greater capacity than SMEs to seek out new technologies and research opportunities, many explained that they struggled to identify the right research and expertise in universities and also to find the right contacts in TTOs and KTOs. Universities were encouraged to make research and expertise more visible and accessible.

**“I’m in technology brokerage and I attend a lot of this type of meeting and this has been the best I’ve ever attended”**

**John Allies, Director, Strategic Allies Ltd**

## **Challenges facing future industry-academic collaboration in the UK**

The top four issues that emerged were:

- The cost of doing research with UK universities
- Sometimes unrealistic expectations set by universities in the valuation of their IP
- Attracting and retaining talent
- The globalisation of research

**“Make the UK the best place in the world for business - university collaboration”**

**Wilson Review, 2012**

## **Annex 1: Participating companies**

AstraZeneca, BAE Systems, BBC, BlackBerry, BP, BT, Diamond, EDF, Eisai, Energy, Fuji, GSK Consumer, GSK Pharma, IBM, Jaguar Land Rover, Johnson and Johnson, Johnson Matthey, Lilly, MedImmune, MSD, Novartis, Pfizer, Procter & Gamble, Reckitt Benckiser, Rolls Royce, Royal Commission for the Exhibition of 1851, Sanofi, SSTL, Thales, Ubiquigent , UCB, Unilever

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