Preface.

Industry engagement ranges from basic research for market disruptions, product development for incremental improvements, recruitment, staff training, buying IP (through licencing) to support of spin-outs. The consultation / response doesn’t cover this full range. It is important to state that what may be true for one university may not be true for others.

**Question 1:** Is sufficient good practice available on how to identify and then develop strategic research partnerships, including setting partnership criteria, appropriately facilitative policies and processes and effective upward escalators?

There are some opportunities to learn from good practice, notably through PraxisUnico-AURIL in the UK, but it would be useful to have more widely available case studies. However, strategic partnerships constructed at a scale beyond a single project are inevitably bespoke relationships that will be very different from each other, depending on the nature and strategic intent both of the company and the university. At Oxford, long-standing relationships with Man Group (The Oxford-Man Institute of Quantitative Finance), Rolls Royce (we host two UTCs) and the Structural Genomics Consortium (SGC) (a broad, Chemistry-based collaboration with a large number of companies) illustrate how different successful, long term partnerships can be from each other. More recently developed partnerships with Emirates, UCB and the National Trust are each very different again, but the common factors are mutual, long term commitment and investment of time and resource, rather than any particular structural or contractual factors.

Successful partnerships often extend beyond just research into recruiting, training and venturing activities; this is an evolving area and we hope that the recently developed PraxisUnico-Auril meetings and courses on the subject are extended to allow deeper discussion and training.

Although Oxford has a strong track record in developing these partnerships, we can always learn from new models and would welcome the opportunity to learn from others. We would caution, however, against any prescriptive approach to guidance – rather we seek inspiration from other successful models so that each bespoke long term partnership is better than the last.

We are in the process of examining and developing formal systems for triaging and assessing partnership opportunities, and are content that our policies facilitate and encourage the development of such partnerships.

**Question 2:** Could good practice on how to identify and bring on new research partners, especially starting with low absorptive capacity, be useful? This might include effective models for learning cohorts and low-cost entry points, or working across disciplines and types of HEI to share complementary strengths and KE offers.

Yes, this could be useful, but it must be recognised that this is an activity that requires more energy from the university than working with experienced partners. Such initiating activities usually result in small scale, “trial” projects which have a relatively small impact on both parties compared to the effort involved. Of course, some of these projects become larger collaborations and we are convinced of the value of running them, but they often rely on the use of specific pots of funding such as HEIF or IAA to provide small amounts of funding for a large number of projects. Mechanisms in place at Oxford to facilitate this include (among many others):
• Regular, free problem solving surgeries in the Maths Institute for businesses to bring problems for mathematicians to tackle on the day
• KE Seed fund – a HEIF funded pot for small amounts of money to fund seminars and meetings to build relationships with new partners. This is particularly well-used by the humanities and social sciences
• An internship programme run by the Careers Service that places many students in smaller, Oxfordshire-based businesses.
• A heritage day – funded through ESRC IAA: bringing together local heritage-focused SMEs (museums, country houses, tourism office, steamboat company, community groups…) and academics from Humanities and Social Sciences to workshop ideas on how to work together. 7 projects were funded.

Of other national schemes which encourage collaboration:

• Innovate UK - companies do like the “complete” (80% FEC) funding of University research + support for their costs
• companies do like Case Awards / CDTs. However, they generally do NOT see them as student training, but as research, and a cheaper way of accessing that research at that (so their perception is very different to the University’s). They DO see these as a source of new IP (which rarely materialises – GSK has publically told the story of there only being one student out of a 1000 which they have support and which resulted in commercialisable IP). (see also answer to Q 9). So these are a low-cost entry mechanism (if nothing else, to build up a relationship with the academic researcher).
• KTPs. This scheme requires a financial contribution (33%-50%) to the total project cost and supports knowledge transfer between the University and the company (of any size). A useful tool to test commitment and develop a longer-term relationship from.

Building partnerships with business support bodies such as LEPs and the DIT can also make a contribution, but this requires those bodies to develop a knowledge of what universities can (and cannot) offer businesses. This is different from “traditional” business support models and requires effort to ensure that business-facing people have time to understand the universities on their doorstep.

Question 3: Is good practice available on how to develop, sustain, and close, centres or networks that facilitate research partnerships with users? Could funders, or other national or local stakeholders, do more to assist in effective policies for identifying the need for centres or networks, including helping HEIs identify their areas of national strength and appropriate partners through, for example, data sharing? It is likely that universities invest significant amounts of public KE funding in centre and network development – is good practice available on how to evaluate the success of such investments?

This is an area where the UK is still developing good practice. We see increasingly that centres and networks that are closely associated with university anchor institutions have a good chance of success, especially if they are closely linked into an extended network of other universities who can, in turn, bring their users into their network.

Oxford examples include:

• NQIT – a national network focused on quantum computing centred at Oxford but linked to an extensive network of universities and companies. This is notable for user
engagement activities being included as part of the centre budget, enabling focused, frequent interaction with users.

- **SGC** – the Structural Genomics consortium. An extensive international network of universities, agencies and businesses centred on Oxford and Toronto focused on delivering outputs for use by the pharma community.
- The forthcoming Rosalind Franklin Institute to be based at Harwell, but with strong links to Oxford and other UK universities. The model will again be bespoke, and slightly different from previous models as the community has learnt from previous iterations.
- **CCHTIP** – the Creative Cultural Heritage and Tourism Implementation Plan, an OxLEP strategy document that brings together Oxfordshire business and organisations, including the universities. This is a locally focused network that is working on bringing together collaborations, some of which will include the universities.

The recent Science and Innovation audit process was an excellent initiative that allowed Oxfordshire as a region to focus on some of its areas of strength. The process was necessarily narrowly focused, and there would be value in extending such exercises. It would help, however, if they were properly funded next time.

Regional events such as those hosted by LEPs and venturefests can play a role in developing partnerships between universities and local business communities, although their effects extend beyond just university business interactions.

Small scale network building activities are challenging to evaluate, as there is often an element of casting bread on the waters and success depends on serendipity, and finding sensible ways to measure outputs is challenging. Evaluating centres and institutes is more possible, and depends on criteria being properly set for success at early stages to develop clarity about what needs to be achieved. The clear deliverables associated with EPSRC quantum hubs are a good example of this.

**Question 4:** Would good practice into effective models for using wider modes of KE to contribute to research commercialisation upstream (in terms of identifying and developing potential research partners) and downstream (in terms of delivering value) be helpful?

Successful knowledge exchange by a university encompasses a broader set of activities than just research commercialisation. Often these are interconnected and reinforce each other – successful entrepreneurial skills development in the student body may be attractive to companies who may develop a strong relationship with the University and may discuss the possibility of research project or technology licensing, but equally things may work the other way around. Seeing KE in holistic terms as “all the ways a university makes a difference” is an important step towards KE being seen as “part of the academic mission” rather than some sort of add on.

To this end, it would be good to have more concrete examples of how different aspects of externally facing activity reinforce each other, or provide opportunities for different parts of the university. Of course this require the institution to see itself in those terms too.

We are seeing an increasing desire to embed company staff in universities (to aid fast impact, transfer knowledge effectively and ensure that collaborations have a focus on company requirements. This comes with a variety of challenges such as confidentiality issues and balancing public vs private benefit as required by universities’ charitable status. It would be
helpful to explore the mechanisms which universities are adopting to enable such activity and through this develop good practice guidelines.

**Question 5:** Could more be done to share effective practice between HEIs on staff and student training and development in research commercialisation and partnering, including use of novel staff posts?

The existing work done by PraxisUnico and AURIL in staff education and development continues to be important and potentially they should be encouraged to expand these activities post-merger. If some of the training for KE professionals could be extended to reach academics, this might be a low cost way of doing it, although we suspect it would need some pump-priming investment.

Student education is a key area of development across the sector as entrepreneurship becomes a more prominent career choice by students (if indeed, “career” is still the correct word for the work patterns that will likely be adopted by our students). It is important that we learn from good practice around the world as UK universities seek to grow the innovative ecosystems in which they nestle. More could always be done to share good practice, but it is important to recognise that good practice in student entrepreneurship education is currently not understood as well as it might be, and research-based evidence in this area would be welcome.

**Question 6:** Could more be done to share good practice across HEIs on effective methods to reduce costs and time in research and KE contracts and other administration?

See our answers to questions 8ff on this topic. A great deal is being done to explore ways to reduce transaction costs through the Brunswick agreements, Lambert agreements and standard templates within and between institutions. These are only effective, however, to the extent that other contracting parties are willing to engage with these compromise agreements, or that universities are willing and able to insist more robustly on conformity to reasonable standards.

HEIs are involved in a wide range of activities designed to ensure effectiveness and efficiency in research administration. For us, meetings between Russell Group counterparts and training and networking events held by, e.g. UUK, PraxisUnico-Auril, and the Association of Research Managers and Administrators (ARMA) are particularly valuable.

Oxford is one of many UK universities taking part in the UniForum program, specifically designed for the service operations of research-active Universities, to gain insights into service location, costs and effectiveness and sector-wide benchmarks. Research and KE administration, and research facilities and supports are two key functional areas within the program.

**Question 7:** Have we identified the main barriers to and enablers of improved research commercialisation?

This is a very comprehensive summary, and HEFCE’s continued attention in this area is helpful in sharing good practice. However, the continued incessant emphasis on “reviewing” technology transfer by government is to the detriment of putting energy into some of these other areas and we would hope that future government investment of time and resource would recognise the importance of these other areas of KE.

**Question 8:** Are standardised templates a useful tool to speed up and ease research and other contracting?
Contracting for research is not a simple activity. There are many variables to be taken into account – the context – which makes at least aspects of such agreements bespoke. The single biggest hurdle to establishing an appropriate contract quickly is ensuring that all parties in a negotiation understand the perspectives of the other parties and are sophisticated enough to act on that understanding. Within universities this requires, amongst other things, not just an appreciation of the commercial requirements of companies (which will differ according to the technology sector), but an understanding of where the real risks lie; the subtlety of the legal language; and an experienced, stable (the required sophistication is built up over years) and sufficiently resourced contracting team which has been delegated sufficient authority. Many of the research intensive universities hopefully meet these criteria, but others may well have less experience or less resource.

The same criteria apply to industry. However, within many companies contract negotiation is the preserve of the legal teams who normally deal with other companies. There is often a lack of understanding of the requirements of, and legal obligations on universities, an inflexibility of approach and a “nimbyism” to template agreements – even templates which have been agreed by one part of a company with a university are often rejected by another part of the same company.

The picture is not black and white. There are companies which understand and respond to the position of universities. And undoubtedly companies have had poor experiences with universities. When they do they can be very vocal in tarring the sector with the same brush and the university sector has not been effective in responding, so we welcome this initiative from HEFCE.

At Oxford we make extensive use of the EU DESCA and NIHR range of clinical trial agreements. Between universities we champion the use of the “Brunswick” agreements for low risk collaborations. And we try to use the Lamberts (although these templates are heavily focussed on patentable IP and so not a good fit for Humanities & Social Sciences projects). The latter, however, are often resisted by industry whose legal teams prefer to use their own templates. Where they are sometimes useful is with SMEs which don’t have in-house legal teams and find reassurance in the Lambert’s government endorsement.

We have an extensive range of Oxford-developed template agreements, as well as agreements or clauses we have adapted for use in similar situations in the past, which we seek to use, wherever possible, to speed up and reduce the costs (to all parties) of research contracting.

**Question 9: Should Government or public funders specify in more detail the terms of research contracting?**

This may be helpful. The Research Councils and the NIHR in particular are very keen to see contracts put in place in good time with commercial collaborators (sometimes in advance of an award – which can be very time wasting), but provide no guidance. It might be helpful if they could require the use of a Lambert unless there was good, justifiable reason not to do so. There are precedents: the old LINK agreement was championed by the then DTI and widely used under the LINK scheme; the HRA encourages use of the template clinical trial sponsorship and site agreements published by the DoH and are widely taken up.

A huge amount of time is wasted negotiation CASE-type studentships. These are government-funded training awards where the student is obliged to produce and submit a thesis, with a small top-up from an industrial collaborator (mainly to the student rather than the university), with the student often based in a productive research laboratory. Yet the approach from industry is usually that it wishes to own all IP which may arise (which often would pull in IP generated from the broader laboratory) and control publications (including the thesis). We negotiated a studentship agreement
with GSK some years ago now (it is in need of updating) which the university sector and the CBI adopted, but is rejected by most companies (other than GSK). A standardised approach here would be very helpful.

Many would argue that would be entirely reasonable for public funders to state, up front (in call documentation) a core set of ‘contracting’ principles which all parties will need to follow, e.g. in relation to public benefit. Some industry partners who join with universities to apply for, say, Research Council funding, somehow then seem to ignore public interest and benefit principles and want to insist on one-sided and purely commercial terms (even contesting on many occasions, for example, the academic researcher’s right to publish).

**Question 10:** How can universities provide assurance that they are making the right choices on the balance of impact and income in forming research partnerships and contracting?

The balance between impact and income is very context based and occurs at two levels. Firstly, when pricing a collaboration with industry. One of the few genuine reasons for pricing a collaboration at less than 100% FEC (especially in these financially constrained times) is where there is major academic (public) benefit which outweighs potential private (commercial) benefit to the company. Secondly, when looking at the commercialisation of any outputs of the research. (*See also Q12*). This can be complex and requires sophistication and depends upon: the technology sector; whether it is early or later stage research; whether it is based on university or company background IP; etc. It is difficult to see how to provide broad “assurance” on this point - and it would also depend on who is seeking such assurance and for what reasons (industry, investors in university spinout companies, charitable funders, government).

**Question 11:** Within legal and regulatory frameworks, universities may legitimately make different pricing decisions on co-investment opportunities. What is the best approach to explaining this to partners?


**Question 12:** Are there approaches beyond Lambert that could be adopted to enable universities and businesses to come to quicker and easier agreements on the FEC-IP ownership equation?

FEC is calculated using the Treasury approved TRAC methodology. This is analogous to the methodology adopted by the US Federal Government and respected by industry in the US, as far as we are aware. Government could do more to promote that FEC is not profit making for universities. Furthermore, unlike when contracting with a CRO where a transfer of IP either through an assignment or licence is often “included” in the price, this is not the case with FEC.

**Question 13:** Is there any way to improve the information base from which to come to decisions on the value of early-stage IP? Could the Lambert approach be picked up more widely?

Yes, we would welcome a greater acceptance of the Lambert approach by industry. With respect to assessing the value of early stage IP, this is another complex area which is affected by a range of factors. We have seen cases where some universities have overvalued early stage IP. However, over the years technology transfer offices have become more sophisticated and, anecdotally at least, we believe this to have diminished in recent years. But universities are under pressure to ensure reasonable revenue returns from this source, not only to fund their technology transfer operations
and, hopefully, ultimately making a contribution to university running costs, but also from many charitable funders of research which seek to augment their revenue from such sources.

**Question 14:** Do UK universities have appropriate policies to ensure the maximum exploitation of IP through balancing research contracting and technology transfer routes?

We believe that the research intensive universities do.

**Question 15:** Is there good practice available to help HEIs to take an informed stance on the research contracting approach appropriate to a charitable institution?

ARMA and PraxisUnico both organise regular conferences and workshops to provide training to contracts specialists. These are very well regarded and are helpful, but, as stated earlier, while the basics are easily taught, the sophistication required to appreciate and appropriately respond to the huge variety of contexts is best learnt through experience and a stable and supportive contracting team. ARMA and PraxisUnico also provide opportunities for colleagues from HEIs and charity research funders to come together to understand each other’s perspectives, experiences and expectations. Universities could pool experiences together, but doing so not only has resource requirements but also care would need to be taken to not breach confidentiality provisions in extant contracts. The Russell Group Research Directors Group and the PraxisUnico enterprise directors sponsor discussion and idea sharing to inform policy and practice.

**Question 16:** Other than in contract research, are there any good reasons for universities not to own IP?

Yes. If there is substantial IP being brought to the collaboration by the industrial party, our approach is that we should not seek to own improvements to that IP nor to benefit through down stream revenue sharing unless our contribution to the development or exploitation potential has been significant. Examples where we might not seek any ownership of IP related to an industrial party’s background IP might be improvements to the design of a turbine blade or through the trialling of a late stage drug. But this is all context specific. For example, if we had the idea that an extant, licensed drug might work in a different indication, trialled it, and as a result the company gained a broader licence, it would be equitable for the university to share in the financial rewards, though not necessarily own the resulting IP. This is, once again, very context specific but, at least at Oxford, we take a flexible approach. Increasingly where government (especially this NIHR and the MRC) and charitable funders (in particular CRUK) have contributed funding towards a project they are constraining such flexibility though their Ts&Cs or through direct involvement in the negotiations, and sometimes impose unrealistic commercial requirements.

**Question 17:** Are there approaches to improving processes around securing background IP? Can issues be explained better to external partners?

Most universities are proficient at protecting their IP. However, a significant challenge for universities is where, through collaboration agreements, companies seek access (usually via a non-exclusive royalty bearing licence) to background IP which the university owns and which may be necessary to commercialise foreground IP developed through the collaboration. This is an understandable position from a company’s perspective, but the consequence is that the university is placed in a situation which is worse than any third party (academic or commercial) which holds IP which may be required to exploit any foreground IP. This is because it will be prevented from commercialising that background IP (if it has managed to identify it), at least on an exclusive basis for the period of any option and may end up unwittingly in breach of contract if it turns out that the background IP was committed to a third party in some way. We believe that this is not a position
which would be agreed to in most industry to industry contracts and industry needs to understand that it is equally not a position acceptable to universities.

**Question 18:** Could businesses be provided with better induction briefing to explain why some terms matter to universities?

Yes. The Lambert guidance has tried to do this but does not seem to be widely read. Promoting such understanding would be greatly beneficial. The CBI document “best of both worlds” [http://www.cbi.org.uk/insight-and-analysis/best-of-both-worlds/](http://www.cbi.org.uk/insight-and-analysis/best-of-both-worlds/) did an excellent job of explaining some of the issues to business. Coming from a business organisation this was very valuable, and it could do with stronger promotion and use as a document.

**Question 19:** Could the issues around warranties and indemnities for universities be explained better to industry partners?

Yes. Most universities do not have the resources to provide commercial style warranties around IP, and all are required to protect their assets to be applied for their charitable purposes – not to fund law suits. If this was widely understood it would greatly help contracting.

**Question 20:** The McMillan review recommended support to governors, leaders and managers to help them in considering partnerships with businesses – would this help? Alternatively, could the university regulatory regime be explained better to external partners?

Research intensive universities are now quite innovative in their relationships with industry. Strategy to facilitate University-industry collaboration here at Oxford is led by senior academics, and governance oversight around engagement and impact is through the Research Committee, a principal committee of Council. We are not convinced of the need for or value of the support for governors as recommended from the MacMillan Review. As stated previously, if industry understood the regulatory regime to which universities adhere, it would be helpful.

**Question 21:** Could more be done with businesses to encourage them to discuss between themselves why they take different approaches, and to seek to come to more common positions?

Oxford has just joined the US University Industry Demonstration Partnership (UIDP) which brings together universities and industry to discuss issues such as being raised in this questionnaire. Time will tell whether this might be a useful style of forum to replicate in the UK, but we are hopeful. Attempts to get industry to adopt the Lambert approach through the CBI have not borne fruit to date, but we need to keep trying.

**Question 22:** Universities appear to have taken significant steps to address issues around simplification in research contracting, but can more be done – either additional steps or sharing good practice across the HE sector? Do we need to provide better information to ensure that partners (for example, SMEs) have reasonable expectations of what working with an HEI will be like?

More can always be done. The Brunswick agreements need refreshing. We can host more useful information on our websites. Research intensive universities could partner those with less resources. We could engage more with industry groups. But all this takes time and resource and, to be frank, it feels like it is the university sector which is trying to improve contracting with little engagement from the industrial sector(s – since different sectors have different requirements) at present.

**Question 23:** Are there other types of agreement between universities and businesses that are particular problem areas?
Material Transfer Agreements are a real bugbear with the donor of the material often wanting reach through rights into the research outcomes which are usually already committed in one form or another to the funder of the research.

**Question 24:** Could we make more progress cherry-picking specific issues to address – or trying to do something more holistic? Is business willing to engage in such developments? Would international experience help (for example, the USA University Industry Demonstration Partnership (UIDP) ([https://www.uidp.org/about-us/](https://www.uidp.org/about-us/))? Would improving mobility between university research and KE professional staff and industry equivalents help (assisted, for example, by funder schemes)?

Oxford has joined UIDP and plans to work with PraxisUnico to develop a joint US UK conference in summer 2018 to develop US UK comparisons.