

The Intellectual Property Regime and its Implications for Knowledge Exchange

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Executive Summary

A report to HEFCE by PACEC
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Foreword

I said in my foreword to Cambridge/PACEC's first working paper¹ that intellectual property (IP) wasn't everything. And I believe that. Our universities and colleges, their staff and students, have enormous potential to serve society and support the economy in a huge variety of ways, many based on people and relationships not IP.

But IP matters, and it matters a great deal to some vital UK business success stories - our country's strengths in health industries or aerospace engineering. Some universities, subjects and academics do generate IP, and some of those ideas create the new businesses, business sectors or technologies that will be the source of our economic growth.

This report from PACEC/CBR demonstrates that our universities and colleges have taken their service to society seriously by putting in place the policies and practices to nurture IP and get it out into the world of use. But it also suggests that some institutions may be more effective and efficient in this highly specialist area, for quite understandable reasons like critical mass and established track record. So it may point to the conclusion that Paul Wellings also came to in his report on IP and Research Benefits², that HEIs should be more entrepreneurial in securing best IP expertise and collaborating. I hope that this report will help HE's experienced leaders and senior managers to consider how they might improve their efficiency and effectiveness in nurturing IP in the future.

David Sweeney

HEFCE Director, Research, Innovation and Skills

January 2010

¹ The Evolution of the Infrastructure of the Knowledge Exchange System. Jan 2010.

² Report to the DIUS Secretary of State for the HE Framework debate

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- X1.1 The potential for the negotiations over intellectual property (IP) between Higher Education Institutions (HEIs) and firms to create a barrier for knowledge exchange (KE) engagement and, as a result, reducing the flow of benefits from the HE sector to the economy and society, have received a lot of attention over the past decade. It has been the focus of a number of reviews including the Lambert Review (2003) and, more recently, the Saraga Review (2007) and Wellings Review (2008). This report builds on the findings of these reviews and other academic literature to further our understanding of the scale and nature of the problem, the IP regimes that have been put into place to exploit IP, and the extent to which IP remains a problem for the effective and efficient exploitation of IP. To address these issues, it mobilises a new evidence base derived from the PACEC/CBR survey of academics and external organisations, and the large scale CBR surveys of academics and firms, HEBCI, and a new survey of IP policies.
- X1.2 Over half of academics engaged with external organisations through at least one mechanism where negotiations over IP could potentially arise. This was much higher for the top 6 and high research intensity clusters and lower for HEIs in the medium and low research intensity clusters. Similarly, the research finds that over a quarter of firms that interact with HEIs could potentially be affected by IP-related issues.
- X1.3 Of these academics, 19% felt that difficulties in reaching agreements over the terms of the interaction (e.g. over IP) still acted as a barrier for their KE interactions. Compared with other possible constraints to KE engagement, this factor is ranked much more highly as a potential barrier in the top 6 research and high intensive HEIs compared with lower research HEIs, where it is typically ranked near the bottom (in terms of number of academics affected). In addition, these difficulties are primarily felt by academics in the science, technology, engineering and mathematics disciplines.
- X1.4 The finding of the Lambert Review over 5 years ago that negotiations over IP especially affect SMEs, is not reflected in the more recent the research reported here.
- X1.5 Framework policies have been established by virtually all HEIs who engage in some form of IP exploitation. These typically follow a common framework for organising and managing the IP exploitation process and articulate who and what is covered, the procedures for commercialisation and exploitation, the incentives and revenue sharing schemes, and the appeal processes. However, within the framework there is no single 'best practice' model of how HEIs organise and manage the exploitation of their IP. This reflects the diversity of mission, aims and objectives, research portfolio, capabilities of academics and commercialisation staff, and the learning that has taken place from previous experiences.
- X1.6 The productivity of academics in generating potentially exploitable ideas (as measured by the number of disclosures, patent applications or IP revenue per academic) increases as research intensity increases. The research suggests that a

10% rise in research income per academic (adjusted for research quality) yields a 10% rise in the volume of exploitable ideas per academic (i.e. constant returns to scale to research income per academic).

- X1.7 IP incentive schemes can have a positive effect on academic productivity in terms of producing commercialisable ideas. For a fixed royalty income, the research found that the greater the share of revenue derived from the IP allocated to the academic inventor, the greater the IP revenue per academic.
- X1.8 The efficiency of the IP exploitation process can be defined as the ratio of the revenues generated by the process to the costs incurred or the number of staff involved in the process. The research shows that there is a positive relationship between the research intensity of an HEI and the efficiency of the exploitation process, with higher research intensive HEIs likely to be more efficient. There are likely to be significant economies of scale in the exploitation of IP. This supports the findings of the Wellings Review (2008) and the Commission of European Communities (2008) that suggested that critical mass should be built in knowledge transfer by pooling resources at the local or regional levels, or around specialist disciplinary hubs.
- X1.9 The effectiveness of an HEI's exploitation process is reflected in the prevalence of constraints likely to influence negatively the process (e.g. bureaucracy and inflexibility of university administrators, poor marketing, technical and negotiation skills of university knowledge transfer offices and a lack of capability of university staff). Again, there is a positive relationship between research intensity and effectiveness with higher HEIs likely to be more effective.
- X1.10 In conclusion, although a common framework is now in place across the HE sector to manage and exploit IP, there is clearly a diversity in the efficiency and effectiveness with which these regimes are designed and implemented. The research has shown that negotiations over intellectual property still present a barrier for knowledge exchange engagement with external organisations although it appears to only be a significant barrier for particular types of HEIs, particular disciplines and certain modes of engagement. This suggests that policy needs to look closely at the precise nature of the problems in those high research intensive HEIs and disciplines where the problems are more likely to arise. As a constraint on academics its significance should also be put into perspective since even in those cases where it is relatively most important as a constraint more widespread constraints such as the lack of time facing academics in undertaking their duties for the HEI dominate. Similarly the case of firms constraints arising from IPR lag some way behind other factors such as internal capabilities and resources in firms that seek to engage in University industry knowledge exchange.

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