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STRATEGIC
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INTELLECTUAL PROPERTY
POLICY

The Economic Value of Intellectual Property:

Research Agenda and Plan of Action

Contents

Introduction.....	2
Summary of Forum Outcomes	4
Main Research Questions	8
Priorities for SABIP and the Intellectual Property Office.....	12
Moving Forward.....	16

Introduction

The Forum on the Economic Value of Intellectual Property (IP), held in London in June 2009, hosted by Rt Hon David Lammy MP, Minister of State for Higher Education and Intellectual Property, brought together world experts in the field of intellectual property and economics to discuss the depth and diversity of the challenges facing the systems of IP rights and their contribution to innovation and creativity. The forum highlighted both the importance and complexity of the research agenda needed to provide sufficient evidence to underpin the work of policy-makers¹. One of the fundamental themes to emerge from the forum is the importance of studying how IP systems actually work. Legal rules are important, but it is vital to understand how they affect social and economic behaviour.

The combined resources of the Strategic Advisory Board for Intellectual Property Policy (SABIP) and the Intellectual Property Office are small relative to the identified research programme, and the issues to be tackled are global. We must therefore work with partners at home and abroad. We have been encouraged and excited by the extent of interest, apparent at the Forum itself and in subsequent discussions, in participation in this shared agenda.

Since the Forum, SABIP and the Intellectual Property Office have been discussing the possibility of partnerships with leading funding bodies, research groups, policy-makers, the legal community and industry representatives, to share insight, develop standards for approaching the research and consider how to generate data where it has been absent or inadequate. We have also begun to develop conceptual frameworks which have, to-date, been lacking in this field.

¹A detailed report of proceedings is available at www.sabip.org.uk.

Our aim is to specify, by the end of 2009, an outline work programme which brings together:

- Leading UK academics, Research Councils, other leading providers of funding and NESTA;
- UK and EU policy interests possibly with sponsorship from the European Commission;
- The OECD, which is currently developing the IP strand of its Innovation Strategy due for publication in 2010;
- Policy economists in the leading IP based economies, especially in the US, Canada, Australia, Germany, Japan and France;
- IP users, including small and large firms and individual inventors, creators and consumers.

This report summarises the findings from the Forum and provides a basis for driving forward the work programme through building partnerships and strengthening networks.



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Summary of Forum Outcomes

Economic growth is dependent on technological change and wider creativity, which are key drivers of innovation. Ideally the IP system would be an enabler, ensuring a fair and adequate reward to innovators and diffusion of new knowledge without creating distortions in other parts of the economy. However, the relationships between policy interventions in IP and trends in innovation and growth are far from straightforward. There is a need for careful and systematic analysis to understand the requirements of the IP system for IP creators and users and the impacts of both current arrangements and emerging mechanisms for incentivising research and diffusing knowledge at both the micro and macro levels.

Figure 1 sets out a schematic framework that may be helpful in organising such a complex patchwork of research issues.

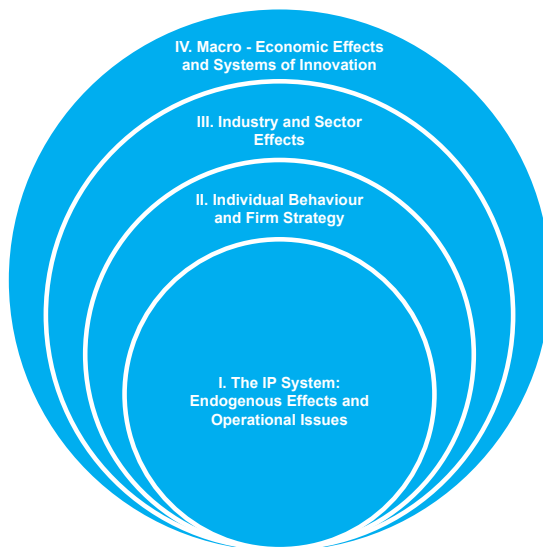


Figure 1 – Economic Value of IP Schematic

This approach indicates four themes for further study:

Theme I. The IP System: Endogenous Effects and Operational Issues


Theme II. Individual Behaviour and Firm Strategy

Theme III. Industry and Sector Effects

Theme IV. Macro-Economic Effects and Systems of Innovation

This framework enables us to see the many levels at which IP and the IPR system is working in our society and economy. The law is implemented and enforced by a range of institutions and, as knowledge investment is becoming the dominant form of capital formation in many OECD nations, IP and associated rights are more widely used by individuals and firms. In turn, the appropriation of knowledge through the IPR system affects economic behaviour. It has implications for the availability and diffusion of new knowledge and the wider context of innovation and creativity.

Although it is known that IPRs play an important role in the economy and that some sectors are more reliant on IPRs than others (for instance pharmaceuticals compared with fashion design), we still lack quantification of the relative importance of IPRs in the wider process of knowledge creation. Indeed, it is often assumed that IPRs stimulate innovation and lead to economic growth but the Forum in June highlighted that knowledge about the effects of the IP system on innovation and economic growth is, at best, ambiguous. This assertion should be tested and ought to provide the starting point for analysis.



Analysis needs to move beyond patents, where most attention has focused. The evidence base is relatively weak in relation to copyright, design rights, trade marks and trade secrets. To what extent are benefits being realised from these and by whom? What are the challenges and costs associated with these? Theory alone cannot answer these questions and there is a need for rigorous empirical studies to disentangle and disaggregate complex causal relationships in a range of sectors and nations.

Using this as a starting point, the programme of work proposed by experts at the Forum and being developed by SABIP, the Intellectual Property Office and their partners will therefore first seek to address questions surrounding the value of IPRs in the knowledge economy and as a proportion of overall GDP. Effort will be made to improve our understanding of what the implications of IPRs are for innovation, creativity and productivity.

Work to quantify the value and role of IPRs within the wider framework of innovation investment (defined by the NESTA Innovation Index as knowledge spending by firms which has a long term return) should build insight into the link between what we know about IPR activity and the value of different types of knowledge investment in the economy.

Moving from a macro-economic focus, through research at the level of individual consumers and firms, we propose also to explore the impacts of the various IPR systems (patents, copyright, trade marks, design rights) on different sectors and to look at the role of IPRs as a broker between actors of various sizes.

It is often assumed that improving small-, medium- and micro-firm engagement with the IPR system can, in turn, stimulate economic activity. Again, we know relatively little about the validity of this assumption. SMEs and micro-firms could therefore also be usefully surveyed to understand, for example, when and how they use IPRs, trade secrecy or other means of protection, whether opportunities for engaging them more in the IP system are being missed (given that only a small proportion do so at present), and what the implications of these missed opportunities might be. Equally, it may be that, in some cases, opportunities to use IPRs are being over-exploited. Understanding how well this system works for each party and the resulting economic costs and benefits could influence the design of IP policies.

The IPR system is known to have a range of unintended endogenous effects although the scale and the impacts of these are not well-understood. For example, in the case of patents, disincentives to innovators may emerge through patent thickets or stringent rules concerning inadvertent infringement. Studies on the extent and implications of these issues are needed, as well as a better understanding of responses to them, such as patent pools or open source methods.

Finally, there will be a need to examine the operational functioning of the legal and administrative frameworks for all forms of IP, including the governance and pricing arrangements in the bodies administering and implementing the system (especially the courts, the Intellectual Property Office and its equivalent bodies at international level).

Main Research Questions

The following main questions for further research were proposed at the Forum and have since been validated by our partners²:

Macro-Economic Effects and Systems of Innovation

The overall role of IP in the economy, as outlined above, will be the starting point for analysis.

1. Does stronger or weaker IP protection result in more or less innovation? Does this translate into stronger or better economies? In turn, does this result in improved public welfare?

Industry and Sector Effects

2. What kinds of taxonomy are useful for differentiating the IP needs of different industries?
3. Can IP regimes be usefully tailored for individual sectors? For example, what would a sui generis system for software look like and how would it work?
4. When and to what extent do IP rights facilitate large firm / small firm links? To what effect?
5. What is the role of the IP system when society needs rapid development and diffusion of technologies, for example in relation to climate change?
6. How is digital media changing copyright value-chains and how can societies continue to finance the creation of 'cultural' goods in the digital era?

²Note that the original list of questions can be found in the report of proceedings, available at www.sabip.org.uk. Based on consultation with stakeholders, this list has been amended to remove duplication and questions considered to be unfeasible or to be undertaken by others.

7. What is the position of IPRs under competition law? Which branch of law takes precedence? How has competition law dealt with the economic effects of patents, trade marks and copyright? How do practices such as patent pooling, cross-licensing or joint ventures sit within competition law?

Individual Behaviour and Firm Strategy

8. What is the public's attitude to IP in situations most relevant to them – for example in relation to file-sharing?
9. How prevalent are non-producing entities in Europe? What are they doing and when is it valuable or undesirable?
10. Why do so few UK SMEs and micro-entities appear to use IPRs? Are opportunities being missed? How might we organise a more level playing field for large and small firms in the face of high litigation costs?
11. When and how do individuals and firms benefit from copyright, trade marks and design rights? What is the value of these to the economy? What is the financial value of the incentive of IPRs? How does this vary according to the differences between professional and amateur copyright creation?
12. In what circumstances is trade secret protection more efficient than patent protection?

Endogenous Effects and Operational Issues

13. What are the differences (including recent case law) between major patent systems (US, EU) and what are the implications of these?

14. Do we need to standardise and simplify IPR regimes across categories and regions? For example, would there be a benefit in simplifying overlapping systems for design rights in Europe?
15. To what extent is the profusion of IPRs a problem? When the profusion of IPRs has become a problem, what mechanisms (e.g. 'open source', patent pools) have evolved to address patent 'thickets', or related issues? How well have these functioned?
16. To what extent do patent applicants and draftspersons engage in strategic gamesmanship? What is the effect of this? Is this a problem?
17. Should policies be developed to allow for inadvertent infringement? Are changes required to provide clearer rights or exemptions, such as for fair use (in copyright) or prior use (in patenting)?
18. What factors would enable policy-makers to determine the best pricing structure for patent filings and renewals?
19. What are the systemic effects of uncertainty in both prosecution and enforcement, particularly for patents? For example, how would reforms affecting litigation costs in the UK affect demand for patents?
20. What value could be gained from data sets on patent licensing and copyright registrations? What would be the impact of reporting patent licensing deals or mandating collecting societies to share data? How do we ensure these are gathered with consistency and without being detrimental to inventor / author / owner interests?
21. What benefits could be gained from further regional and international harmonisation? For example, what are the benefits of a unified European patent court? Do we need a Global Patent? What features would it have and how could it be made operational?

In taking this agenda forward, we believe that the overall impact of each form of IPR needs to be explored in the context of the trade-off between how far the IPR system gives incentives to creativity and innovation and the extent to which it restricts the ability of firms and individuals to benefit from new ideas.

Substantive answers to the questions identified above would go a significant way towards increasing the evidence base for policy-makers in the area of IP rights. Such a research agenda would shed light on a range of underlying issues, exploring the complex interaction between IPRs, innovation and creativity, economic growth and stability, and public welfare. Such research will also help explore alternative incentives for stimulating innovation and creativity (including modified versions of IP and non-proprietary models), and their economic credentials.

In taking this work forward, among many dynamic variables that impact conceptual models, we will consider, among other, the following key issues:

- Dynamic effects
 - New business models and changing exogenous conditions
 - Feedback loops in the innovation process between research and development, returns on investment and IPRs

- The need for new data and analytical frameworks to measure business activity in the context of economic and technological change

Priorities for SABIP and the Intellectual Property Office

The questions identified at the Forum constitute an ambitious research agenda. As business and the IP transactions surrounding it are global, any research on IPRs and their social and economic impacts must also have global reach. This means that UK work in the field, if it is to be effective, must influence, engage with, and where possible lead the development of ideas internationally. SABIP and the Intellectual Property Office are excited by the interest, support and demand already demonstrated by research and funding partners both inside and outside the UK.

As well as addressing operational issues, SABIP and the Intellectual Property Office, along with their partners, will give priority to deepening their understanding of the key foundational questions with a view to developing insight on the basic rationale for IPRs and better informing the policy debate. It is essential to maintain a focus on the underlying objectives of the system and the need to match its performance against these objectives. Research will take a wide variety of forms in order to reach an evidence base sophisticated enough to support sound policy decisions, and many individual projects will tackle a range of questions identified at the Forum. Additionally, as the pace of technological change and innovation seems to be increasing, research will be as forward-looking as possible in order to help model the effects of potential policy changes for the wider IP and economic system.

A number of the questions presented above can and should be tackled together in single studies. The following table presents research projects that are currently being considered among the priority areas for SABIP and the Intellectual Property Office along with a range of partners. These are not exhaustive and the programme will evolve iteratively, as knowledge and policy priorities evolve.

Policy Issue 1: Enabling environment for industrial innovation and creativity
Individual and firm behaviour

1i Longitudinal consumer panel survey on attitudes and behaviour regarding digital content and IPRs

To inform questions around: Consumers' willingness to pay for content; Attitudes to quality against price; The trade off between anonymity and price

1ii Single survey on business attitudes to IP/IPRs

To inform questions around: Trade secrecy; Large firm/ small firm links; Use of IPRs by different sectors; The kinds of taxonomy useful for differentiating the IP needs of, and impacts for, different industries

Policy Issue 2: Identifying blockages
Endogenous and Operational Issues

2i Case studies to address challenges associated with patent thickets and implications of access mechanisms such as patent pools and open source

2ii Cost / benefit studies on policies to allow for inadvertent infringement

Policy Issue 3: Function of IPR system in relation to other legal frameworks, such as competition law
Industry and sector effects

3 Studies on the relationship between competition law and IP

To inform the boundaries of IPR lawmaking: Which branch of law takes precedence? How has competition law dealt with the economic effects of patents, trade marks and copyright? How do such practices as patent pooling, cross-licensing, joint ventures sit within competition law?

Policy Issue 4: Future requirements

4 Futures analysis

Analytical studies to inform policy around the optimum design of IPR systems in relation to changes in technology, human conduct, economic development and income distribution, to be updated on a regular basis

Policy Issue 5: Economic growth and the role of IPRs

Macro-Economic Effects and Systems of Innovation

5 Strength of the IPR systems in relation to the link between IPRs, innovation and economic growth

Range of studies to assess:

- i. The relationship between IPRs and economic growth and social welfare
- ii. The incentive effects of IPRs for individual creators and inventors
- iii. The financial value of the IPR incentive

Studies may include the following:

- a. Build on the Intangible Investment / Innovation Growth Accounting Framework (to be included in NESTA's Innovation Index)³ to **quantify the role of IPRs in UK knowledge investment**
- b. Study on the relationship between IPR law and innovation over time⁴
- c. Study of the links between patent use, and firm innovation and growth: linking survey data on IPR use, R&D investment and productivity⁵ to provide understanding of the value of patent protection for innovators as distinct from the value of R&D or innovation
- d. Survey on incentives to creators and the relative values of economic and moral incentives
- e. Study on alternative protection mechanisms to patents and the relationship between firm choices and behaviour and economic outcomes
- f. Study on the complementary economic effects between trade marks and patents, or trade marks and innovation
- g. Studies on the current and potential role of design rights in enhancing or hindering the value of design (formally protected or not)

Medium term (including medium-long term): Policy insights by spring 2012

Policy Issue 6: Enabling environment for industrial innovation and/or creativity Individual and firm behaviour

6i Value chain analysis to assess how copyright value-chains are affected by digital media

To inform questions around how can societies continue to finance their 'culture' in the digital era

6ii Studies to explore how firms manage open innovation and the role of IPR as an enabling tool

To inform questions around how alternative models interact with the IPR system

Policy Issue 7: Diffusion of socially beneficial technologies Industry and sector effects

7 Case studies or position piece to provide policy guidance on green technology and IPR issues

Policy Issue 8: Copyright's relevance in the digital age

8 Cost: benefit studies to assess what changes to the copyright framework or institutions that implement it would be appropriate or desirable

SABIP and the Intellectual Property Office will join forces with thought leaders involved in the European IP Policy (EPIP) and DRUID networks seeded by the European Commission and pursue a series of events (e.g. ESRC-sponsored policy seminars) to seed new projects which can be taken forward by various partners.

³ *Quantifying the role of IPRs in UK knowledge investment.* Over the last three years work by Imperial College and ONS, funded by Treasury, BIS and NESTA, has developed the Intangible Investment framework originally launched by US Federal Reserve Economists. This has delivered estimates of knowledge investment in the UK, and of its impact on UK productivity. Quantifying the value and role of IPRs, i.e. of legally owned knowledge investment, within this framework will help to link analysis of IPRs to new developments in macroeconomic analysis, and provide a 'missing link' between what we know about IPR activity and the value of different types of knowledge investment in the economy. The framework has international recognition. To develop estimates of different forms of knowledge investment in which IPRs play a role, the IPO proposes analysis based on linking:

- IPO data we can gather from registration of right by firms;
- Data on use of IPRs in innovation surveys (from BIS / ONS); and
- Other survey and administrative data.

⁴ Extending on Josh Lerner (2009) *Research Paper: The Intellectual Property Rights System and its role in Innovation and Economic Performance*, available at www.sabip.org.uk, and based in part on "Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress, and What to Do About It", Adam B. Jaffe & Josh Lerner (2004).

⁵ Building on work by Mark Rogers and Christian Helmers (2009), *Do patents improve the performance of small firms? patents improve the performance of small firms?*

Moving Forward

To take this agenda forward, we propose to:

- Partner with the UK Innovation Research Centre (UK~IRC) to deliver focused **policy events** and **Fellowships** to begin seeding research projects, beginning with (but not limited to) an event on open innovation in Spring 2010.
- Work with NESTA and its partners to build the IPR aspect of the Innovation Index/**Innovation Growth Accounting** framework.
- Participate in and consider support for a range of conferences/events including:
 - The **UK~IRC Open Innovation event** in spring 2010;
 - The **DRUID Conference** IP track in June 2010;
 - The **European Policy for Intellectual Property (EPIP) 2010** conference; and
 - The **National Bureau for Economic Research (NBER)** Innovation Policy and the Economy conference in October 2010.
- Clarify the objectives, mechanisms, and performance of each IP right in order to understand how well existing policies satisfy the economic requirements for the IPR system. The ESRC is interested in supporting a forum on 'the role and rationale of IP' or similar to enable development of this framework.
- Work with the ESRC, EPIP, DRUID and National Science Foundation to develop thematic **policy seminars** on given topics to enable exploration of a topic in some depth.

- Work with the ESRC and AHRC to develop **Fellowships** to develop scopes of work, including on value chain analysis on the creative industries.
- Continue to explore synergies with partners such as the Organisation for Economic Cooperation and Development (OECD); National Bureau for Economic Research (NBER); European Commission; National Endowment for Science, Technology and the Arts (NESTA); ZEW Mannheim; the UK Research Councils; the National Science Foundation (NSF) and the UK Innovation Research Centre (UK~IRC).
- Explore the relationships between rights, sectors, firm size and age, and develop an organisational model or conceptual framework with IP Australia and the Canadian Intellectual Property Office (CIPO) to enable synthesis of results and communication of them in a way that is accessible to policy-makers.

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