The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly. In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

Phone numbers and email addresses for individual members of staff are unchanged

Email : enquiries@innovation.ox.ac.uk

Intellectual Property Valorisation as a driver for Economic Growth in Europe

Elena Andonova, May 2015

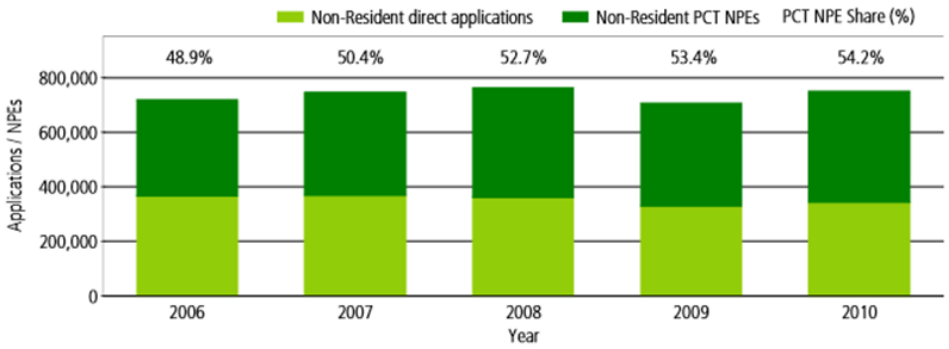
At the foundation of knowledge based economies sits the concept of protecting new ideas, new technologies and knowledge and exploring these to gain competitive advantage. Undoubtedly there is a Global trend of economies striving to become knowledge-based and this is particularly relevant to Europe, where knowledge and innovation-based competitiveness is now perceived as the unifying force for the Union, helping it to become recession-proof, sustainable and more competitive globally.

The *International Conference on Intellectual Property and beyond*, which was organized in the framework of the Latvian Presidency of the Council of the European Union brought together around 150 representatives in the field of intellectual property - patent attorneys, university professors, delegates from governmental organizations, embassies, law enforcement institutions, NGOs, and representatives of intellectual property offices.

One of the main purposes of the conference was to better define the link between intellectual property rights, protection, infringement, IPRs prosecution and innovation on one side and economic growth and competitiveness on the other, a topic that is of high importance for the future of Europe as a unity.

What became clear to me, from hearing stakeholders and experts at the conference is that Europe has gone a far way in providing the conditions for creation of intellectual property rights, and to a great extend in protection of such rights. Various mechanisms exist to support the protection of inventors' output and steps are taken to remove obstacles to protection such as existing fragmentation. Organisations like the European Patent Office, the Organisation for Harmonisation of Internal Markets and the individual member states' institutions work in collaborative manner to complete initiatives at a regional, national and international level to tackle these issues. The unitary European patent is one such example of an initiative that will not only reduce the costs of filing for pan European protection but would also make patent prosecution more efficient, for those inventors who would like to reach Europe as one single market. In my view, this is a very positive development as pan European protection would become more attractive and will lure inventors away from only filing for national phase patent, which rarely give inventors strong competitive advantage, and usually remain largely economically unexploited. This notion is comparable to filing for a PCT application versus filing patent applications in individual states worldwide. This would ultimately depend on the patent strategy of the inventor; however the trend is clearly for increased PCT application filings as seen on the graph below:

Figure1: Trends in filing routes: Direct vs PCT



Source: Source: WIPO Economics & Statistics Series: 2012

Unlike PCT however, the European unitary patent would not need separate validation in different member states. The unitary patent should also become less cumbersome to grant further unlocking economic potential.

However, what became evident during the conference was that there is still a long path to be walked in terms of intellectual property 'valorisation' in Europe. Clearly such valorisation presents the link between intellectual property rights and economic growth. This is particularly important topic for academic inventions, because research organisations' technology transfer activities are still in nascent stages of development worldwide. The transfer of new technology and knowledge from academic research to create economic impact has a lot of potential, yet is still widely un-exploited in Europe, a notion that was reiterated during the conference.

One of the obstacles to transferring technology remains the lack of clarity about IP ownership and in some cases it is unclear how the benefits of the commercialisation process would be shared between the inventor and the employer. The two predominant systems for ownership of university IP in Europe are:

- Professor's Privilege, giving the ownership rights of IPRs to the inventor, and this is currently exploited in Italy and Sweden
- Institutional Ownership, according to which the employer owns the IPRs, and most European countries exploit this model

Much of the research which takes place at research institutions however can be funded by various sources, not necessarily only by state funding, and this creates another level of complexity in identifying the IP ownership. Mechanism to ascertaining the IP ownership do not exists across Europe and many universities in various member states still lack clear definitions of IP ownership.

In my view, however, the question of ownership becomes secondary, when there is a clear policy on how the revenues from the commercialisation activity are shared in the research organisation. A well-defined, strategically applicable revenue sharing mechanism in place can motivate academics to consider monetising on their IPRs as an alternative route to publishing only. An intake message from the conference was that many academics in the Baltic states and Eastern Europe cannot personally benefit from commercialisation activities, because there are not specific rules in place to ensure such sharing of benefits.

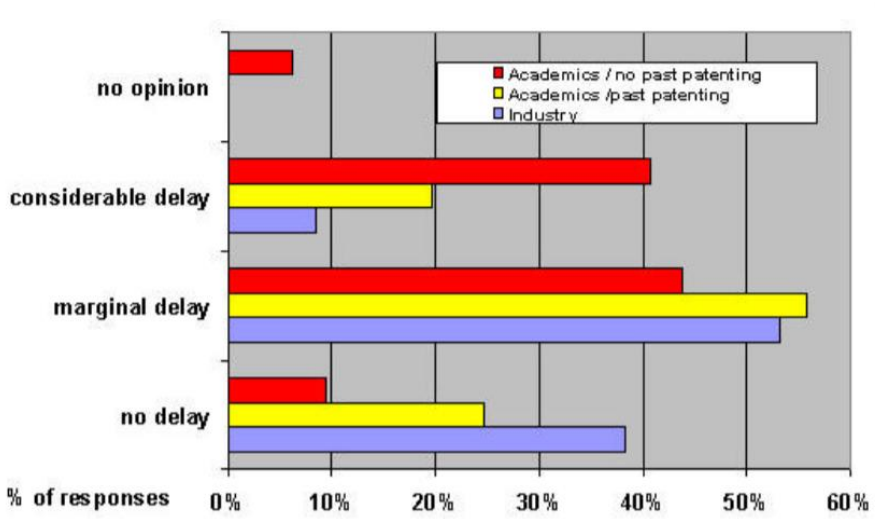
Another obstacle remains the culture of measuring academic performance by number of articles or the number of patents granted, and incentivises academics accordingly. However, such policy rarely

includes licensing activities and the creation of spin off companies, otherwise said the technology transfer activities that in reality are 'wealth creating'. For this inherited 'cultural' paradigm, there are three explanations in my view.

1. A culture of 'publish or perish' in the world of academia

There is strong existing pressure in academic institutions to publish as a source of both building academic track record and attracting more state research funding. That is why many academics do not consider commercialisation. In this situation, it is the technology transfer office that needs to create clarity about the possibility for an academic to both commercialise and publish with relatively small delay, which remains a hugely misunderstood concept as evidence shows (please refer to figure 3 below).

Figure.2 Delay in scientific publication due to the patenting of the invention



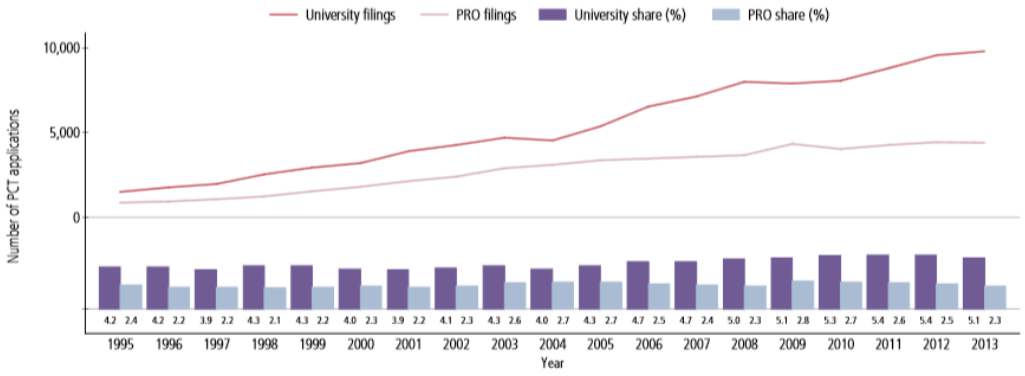
Source: European Commission Research Survey: 2002

2. The lack of strategic planning and clear 'valorisation' objectives when patenting

Since many universities and research organisations reward academics by the number of patents obtained, there is a strong motivation to file for a patent at a national phase. Often such patent remains commercially unexploited. Such patent if not exploited becomes a waste of resources to the research organisation and the inventor. Some 38% of patents granted remained unused and this statistic includes only Western European member states[1]. At the same a national only patent could even limit future commercialisation goals in the same research space, particularly if the patent granted becomes a 'prior art' to future international patent applications for the inventor. This is why it is important that research organisations file for patents where there is a clear strategic goal and plan to commercialise the IP and most importantly have the commitment and the resources to file for a PCT application which would give protection internationally and would increase the value of the patent. There is a positive trend in universities and public research organisations (PROs) to increasingly file more PCT applications, as can be seen in figure 3 below, however their share of total PCTs filed remain on average unchanged.

[1] Source: PatVal-EU survey, 2nd phase, European Commission

Figure3: Trend in university and PRO PCT applications filed and share of total filings



Source: WIPO: Patent Cooperation Treaty Yearly Review 2014

3. The fact that academics in Europe remain largely unaware about the different possibilities in exploiting their academic output commercially

Another take home message from the conference was that there are many researchers in Europe who still do not know enough about the concepts of knowledge and technology transfer as a way to commercialise their research output and contribute to economic development. Partially this is due to the notion that technology transfer has become a structured activity for commercialisation of IPRs only in the last 10 to 15 years. There are still many research organisations in Europe which lack capacity to perform technology transfer activities, while one of the main functions of a technology transfer office is to educate researchers about the process as well as about the benefits from commercialising academic output. There has been hard work on behalf of the Commission in strengthening these capacities via the Intellectual Property offices, yet the general perception is that there is still much more to be done to raise the appropriate awareness. The governments of the member states also have a role in promoting the commercialisation of innovation.

Intellectual property rights are invaluable in a knowledge driven world. This is why protecting, monetising, and if necessary prosecuting intellectual property are important and coherent strategic decisions. The key questions that need to be considered before filing for a patent, which also form part of the work of a technology transfer project manager would be around:

- Technical considerations about the patent such as broad or narrow in scope, incremental or standalone etc.
- Legal considerations to ensure that the right framework cooperation is in place and to ensure the patent would survive possible prosecution, which needs to be done in conjunction with patent attorneys
- Commercial considerations which would give indication on the possible value creation and how would commercially the patent be exploited to bring the maximum such value, for example through a license or through a spin out, nationally or internationally

All of these considerations would fit within the strategic vision of the inventor and the exploiter and that is why the interests of researchers, their respective organisations and ecosystems need to be well aligned.

In summary I would like to note that Europe remains the most innovative region of the world (please see table below).

Figure 4: Global Innovation Index Rankings for 2014

Global Innovation Index rankings

Country/Economy	Score (0–100)	Rank	Income	Rank	Region	Rank	Efficiency Ratio	Rank
Switzerland	64.78	1	HI	1	EUR	1	0.95	6
United Kingdom	62.37	2	HI	2	EUR	2	0.83	29
Sweden	62.29	3	HI	3	EUR	3	0.85	22
Finland	60.67	4	HI	4	EUR	4	0.80	41
Netherlands	60.59	5	HI	5	EUR	5	0.91	12
United States of America	60.09	6	HI	6	NAC	1	0.77	57
Singapore	59.24	7	HI	7	SEAO	1	0.61	110
Denmark	57.52	8	HI	8	EUR	6	0.76	61
Luxembourg	56.86	9	HI	9	EUR	7	0.93	9
Hong Kong (China)	56.82	10	HI	10	SEAO	2	0.66	99

Source: www.globalinnovationindex.org.

There is huge pool of talent, cultural diversity and genuine inventiveness in the European DNA. However, hard work is still needed to build the capacity for innovation and to exploit the innovation in the most strategically viable way and one of the remaining hurdles remain the appropriate valorisation of intellectual property.