Directorate for Science, Technology and Industry www.oecd.org/sti

Commercialising Public Research: New Trends and Strategies

The way in which universities and public research institutions engage with business to take science from the lab to the market is rapidly evolving. The OECD report *Commercialising Public Research: New Trends and Strategies* looks closely at this evolution and provides a comprehensive review of government and institutional level policies aimed at enhancing the transfer, exploitation and commercialisation of public research results. The report also compares performance in OECD countries, universities and public research institutions using both traditional and new indicators.

How effective are universities and public research institutions (PRIs) at exploiting, transferring and commercialising their research?

Patents, licensing income and research spin-offs based on a patent are frequently used to assess whether institutions or countries are capable of turning public research into innovation. The annual growth rate in patent applications by universities fell from 11.8% to 1.3% between 2006 and 2010. PRIs even experienced negative growth of -1.3% over the same period, compared to +5.3% growth between 2001 and 2005. The number of academic spin-offs has not significantly increased either, despite continued policy support. On the other hand, licensing income as a percentage of research expenditures has remained relatively stable in selected OECD countries and regions.

Did you know…

Very few universities are successful at commercialising inventions that they've patented. In Europe, only 10% of universities account for 85% of the total income generated by inventions.

Due to lacklustre performance of academic patenting, licensing and spin-offs, OECD countries are experimenting and developing new policies and instruments to exploit, transfer and commercialise public research. They are also looking beyond performance indicators such as number of patents and licensing income to new metrics such as student employment on funded projects, alumni in the workforce, revenue from contract research and public-private partnerships, co-authored publications between industry and universities, and the mobility of doctoral holders, among others.

Beyond traditional technology transfer practices

Encouraging industry engagement by granting intellectual property (IP) rights licenses free of charge. The perceptions of industry and universities on the value and income from IP can vary and this is a major issue of contention. In order to address this, the University of Glasgow, for example, introduced the Easy Access Programme that provides free access to university inventions on a royalty-free and fee-free basis.

Legislative and administrative procedures targeting research personnel and faculty. General policies regarding IP ownership at universities or rules on sharing revenues from university patents are important but not always sufficient to encourage the transfer of technology. Some universities now allow faculty members to suspend their tenure so that they may pursue commercialisation activities. Faculty members can also request that their commercial experience being taken into account for their tenure. Some universities also allow students to own the inventions they created while they were enrolled.

New forms and models of technology transfer offices (TTOs). Today, TTOs, which have long been central to university and government efforts to commercialise research, are also evolving and exploring more effective business models. Merging TTOs into regional centres that service multiple research institutions is a growing trend in several OECD countries.

Facilitating access to public research results. Providing access to public research results has become an important mechanism for transferring knowledge to society and companies. Fuelled by advances in information and communication technologies (ICT), the most common policy instrument is the requirement to publish in digital format and the provision of open research data repositories.

Did you know…

Large government funded research institutes in Canada and the United States must make their research available to the public within a year of its release.

Collaborative IP tools and funds. A large share of university and PRI patents remain unexploited commercially. One way to address this "sleeping patents" issue is to allow a preferential access to unexploited patents. The creation of standard licensing agreements has also become a popular instrument among universities and governments to address claims from industry related to the difficulties of negotiating license agreements with PRIs.

Did you know…

Often, it's students, not faculty members that get the initial idea for a new technology.

Financing of public research based ventures. New ventures (faculty spin-offs and student start-ups) face the challenge of being both new and small with little or no collateral beyond intellectual property. This limits their access to financial capital. Many universities and PRIs are complementing government funding by setting up their own gap funding schemes. Additional sources such as IP collateral-based funding, corporate venturing activities, and angel and crowd funding for research are also boosting the financing of spin-offs and stars-ups with capital constraints.

Policy implications

- Transfer and commercialisation policies need to be adapted to the specific public research and economic environments of countries and even regions.
- Maintaining excellence in research is important. Without good research there is little to transfer and to commercialise.
- New strategies to link teaching, research and commercialisation, such as mentoring student start-ups, should continue to be explored.
- While patenting remains important, it should not be the main focus of commercialisation policies. For the majority of institutions, the amount of knowledge exchanged with business and income generated from collaborative/contractual research and public-private partnerships is far more significant than revenue from patent monetisation.
- Policy makers should consider focusing as much on student entrepreneurs as on academic researchers.
- Commercialisation policies and incentives should not focus exclusively on physical and natural science; transferring results from research in the social sciences and humanities can also generate new ideas and opportunities for business innovation.
- New indicators for measuring knowledge transfer, exploitation and commercialisation are important to accurately measure performance and develop better policies.

For more information

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