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/](http://www.isis-innovation.com/)... are automatically redirected to our new domain, [www.innovation.ox.ac.uk/](http://www.innovation.ox.ac.uk/)... 

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Q: What returns can a university expect from investing in and supporting a Technology Transfer Office (TTO)?

A: The answer to this question is that a successful TTO brings many and varied returns to the university and to wider society, as described below.

**Introduction**

There is as yet no established framework or research paradigm for measuring the full impact of transferring research outputs, the value and benefits come in economic, social and policy terms.

Technology Transfer is a long-term activity, where the returns are only visible and measurable many years after the work of the TTO is done, if at all. In almost all cases it is impossible to predict the downstream impact of technology transfer deals, and in most cases retrospective assessment can be exceptionally complex.

**RETURNS TO THE UNIVERSITY**

The returns to the University can be divided into financial and non-financial returns.

The financial returns can be cash returns or in accumulated asset value.

**Financial Returns - Cash**

*Royalty income*

The TTO licenses out technologies and receives royalty payments in return. The university will have a set arrangement for how the royalty income is distributed to: the researcher inventors; the host university department(s); the university central reserves; and the TTO. The returns to the department and university centrally are additional, unallocated resources available to the university for investing in new priority activities, whatever they may be at the time.

*Research funding from spin-outs*

The TTO will help establish new spin-out companies which will raise investment finance from business angels, seed and venture capitalists. Often the company will be spending this capital on developing the early-stage technology from the
university, and often this will involve the company funding research back in the university. This is equivalent to any other industrially funded research programme, and should be managed by the university’s research services function on an arm’s length basis.

**Research funding from Translation Awards**

A number of public and charity sector research funders offer research funding awards to universities which are based upon developing research outputs closer to the market. The current Wellcome Trust translational research programmes are clear examples. The TTO helps the university win this research funding in three ways: managing the intellectual property portfolio on which the application is based; providing input to the commercialisation plans in the application; and supporting the researchers during the successful translational activities.

**Government Funding**

The UK government provides funding to universities to support their third stream activities, where the third stream is identified as additional to the main university purposes of teaching and research. The TTO provides part of the case the university makes to receive these funds. The TTO is often at the core of the university’s third stream programmes and well placed to manage and deliver activities with government funding.

**Sale of spin-out shares**

The TTO will help establish new spin-out companies in which the university holds shares. As the companies in the portfolio grow, the university can expect to receive cash from the sale of its shares and from dividend payments. This return will take many years to come through. The university will have in place a scheme by which the cash is distributed within the institution (probably excluding researchers as they will have their own founder shares).

**Financial Returns - Assets**

**Spin-out shareholdings**

The TTO will help establish new spin-out companies in which the university holds shares. Over time the university will build up a portfolio of shareholdings in its spin-out companies, and these shareholdings have an asset value to the university. Managing the portfolio of spin-out equity shareholdings is challenging, and in due course the university will want to develop a resource capable of managing the assets sensibly, both for value and the relationships with its spin-outs.

**New Patents**
The TTO will file new patent applications and over time build a considerable portfolio of these patent applications and granted patents. The TTO will work to license out these patents and other intellectual property and generate royalty income. In addition to this, however, the patent and intellectual property rights have an asset value to the university. There are a range of ways of valuing patents, and whilst none of these are perfect it is reasonable to adopt a conservative approach, based for example upon the amount of patent costs paid.

Strategic Deals

The university may become involved in large-scale transactions that involve the management of the university’s intellectual property and the TTO. Oxford University has entered into two substantial relationships with financial institutions in the fields of Chemistry and Biomedical Engineering. These were not deals conceived or delivered by the TTO, but without an effective and successful TTO, the university may not have been able to do the deals. In each case, the TTO works with the investor to commercialise certain technology over a period of time; and the investor shares in the university’s returns from the TTO’s commercialisation activities.

Non-financial Returns

In addition to the financial returns, there are non-financial benefits to the university from having a successful TTO.

The TTO helps the university demonstrate to research funders that the university is committed to promoting the effective transfer of technology from its research activities. This is an increasingly important requirement for the university, as research funders place higher expectations on the university.

The TTO helps the university promote itself within the wider business, industrial and professional communities. The deals the TTO concludes provide appealing examples of the benefits that university research can bring to companies and individuals.

University researchers expect the university they work for, or are thinking of moving to, of having a competent TTO, with skilled staff, sufficient patent budget resources, access to proof of concept funds, and attractive revenue sharing arrangements. In this way, the TTO can help with university research staff recruitment and retention.

A successful TTO is likely to be involved in managing a number of other activities which benefit the university, for example business networks and seed investment funds. In Oxford the TTO runs an Innovation Society for companies and an Angel investor network. These networks provide opportunities for the university to interact with local and international commercial and government contacts.
RETURNS TO WIDER SOCIETY

Although these form the second part to this piece, and my comments occupy less space, the returns to wider society are of greater importance and substance than the returns to the university. The purpose of university technology transfer is to use commercial routes to transfer technologies out from the university for benefit of the health and wealth of society.

The returns to wider society come from the impact that the transfer of technologies from the university research base has on people. Technology lies behind almost every aspect of human activity; indeed it is difficult to think of any area of modern life where one can find complete sanctuary from the impact of technology. Technology transfer is an important mechanism by which businesses acquire new technologies which they can invest in and grow into new products and services for consumers, including medicines for patients.

The TTO will be licensing new technologies to companies that, in the successful cases, will create new and improved products and services. These are capable of having an impact in addressing the major global challenges of the day: climate change, energy consumption, ageing populations.