



Universities
Scotland



Knowledge exchange: An overview

Strong links between universities and business can make a significant contribution to economic growth

Knowledge exchange is the process by which knowledge, expertise and skilled people move between research in universities and their user communities to contribute to economic development, effectiveness of public services and policy, and quality of life. This can range from setting up a new company to exploit the results of research, through academics advising governments or charities on policy, to exhibitions, lectures or performances for the general public.

How is knowledge transferred?

Perhaps the most conventional and most important way in which knowledge is transferred from universities into the wider world is through the skills and experience gained by its graduates. Ninety per cent of Scottish graduates in 2010/11 found employment or started further learning within six months of graduating and brought their new-found skills and knowledge to their new roles.

Many university degrees have a highly vocational element and such training is a crucial motor for the Scottish economy.

The Knowledge Transfer Partnerships (KTP) scheme matches postgraduate students or suitably qualified recent graduates to a company that has a specific business need or research problem. The initiative offers financial support in the form of a grant which can cover up to 67 per cent of the programme costs.

Knowledge transfer partnerships currently support over 800 companies throughout the UK and there are 90 taking place in universities across Scotland. The take-up of this in Scotland is quite impressive as this equates to an 11 per cent share of the total number of KTPs across the UK although Scotland only has about 8.5 per cent of the UK's population. About two thirds of KTPs involve small to medium sized enterprises

Box 1: Knowledge Transfer Partnerships at work

Jorge Omar Gil Posada, a PhD student at the University of the West of Scotland (UWS) took a Knowledge Transfer Partnership with Lanarkshire based company Crawford Scientific which wanted to develop online training to respond to customer demand.

With the support of university staff, Jorge built a state of the art eLearning platform for the company which is now being used by their clients across the world and has helped return company profits of £100,000.

Tony Taylor, Crawford Scientific's Technical Director, said: "Academic staff at UWS and our KTP Associate were central in delivering key knowledge and skills to the project which demonstrates just how successful industry partnerships with academia can be."

Interface

An initiative called Interface was set up in Scotland in 2005 to help facilitate direct links between business and universities.

Interface was created as a central access point to help business and industry make the best use of Scotland's university research base by providing a match-making service. Interface matches the expertise, knowledge, skills and facilities that exist within Scotland's nineteen HEIs to business needs, particularly those of SMEs, on a no-fee basis.

The initiative which is backed by the Scottish Funding Council (SFC) has proved enormously successful. Since it started it has received close to 3,880 enquiries from businesses, 1,750 of which have progressed beyond the enquiry stage and 360 of which have led to company and university collaborations.

Although Interface's focus is primarily Scottish with 66 per cent of enquiries coming from Scottish SMEs, a further 13% of enquiries are from the rest of the UK and international organisations. 98 per cent of businesses that use Interface say they are satisfied or highly satisfied with the service and it's hardly surprising when 55 per cent of all partnerships result in a new product or service, 26 per cent reported increased profits and 15 per cent created new jobs.

Interface has been awarded funding until 2013 from the SFC. Interface also receives financial support from the Scottish Government under the SEEKIT programme to support the participation of Research Institutes.

Innovation Vouchers

This scheme, funded by the Scottish Funding Council and administered by Interface, is aimed at building new relationships between SMEs and universities in Scotland. The project should lead to new products and processes that will benefit the business, the institution and the Scottish economy.

The awards are specifically for partnerships that have not previously received project funding to work with universities. Each award of between £500 and £5,000 is paid to the academic institution by the Scottish Funding Council to offset the costs of the collaborative project. The company contribution is expected to match the grant contribution from the scheme.

A review of the Innovation Voucher scheme in April 2010 found that:

- A total of 60% of businesses said they had never participated in a joint project with a HEI before.
- 87% of businesses found the application process either 'easy' or 'very easy'.
- Of the businesses involved with Interface, 75% found the assistance provided 'very helpful' and 25% found it 'helpful'.
- All of the businesses said that the project they were involved with had either met (65%) or exceeded (35%) their expectations.

Box 2: Interface - the knowledge connection for business

Stratus Energy

Sought to collaborate with an academic group to develop a new fuel biocide product with "green" credentials and a lower carbon footprint than that currently used. Interface connected Stratus Energy with the newly-formed Biofuels Research Centre within Edinburgh Napier University. A detailed report and results were produced for Stratus to use.

MaidSafe

Wanted to explore new algorithms which achieve better performance and therefore improving MaidSafe products. Through Interface MaidSafe met with the University of Stirling where a collaborative project was awarded a Scottish Funding Council Innovation Voucher. The university were able to implement their expertise in evaluating systems and also develop P2P sample simulations.

FMC Technologies Ltd

Following an introduction by Interface - FMC Technologies began working with Glasgow Caledonian University to deliver a five-year research and development collaboration to benefit the subsea oil and gas industry.

Further case studies can be found on Interface's website

www.interface-online.org.uk

The Knowledge Transfer Grant

Public funding of knowledge transfer activity is a fairly recent development. The Knowledge Transfer (KT) Grant, which is distributed to universities by the Scottish Funding Council, was introduced in 2001/02 in recognition of the value of this area of work and to help improve the flow of knowledge, expertise and ideas to business, enterprises and public services.

The KT Grant will be worth £16.7m in 2012/13. Institutions have freedom to determine what kind of knowledge exchange activities best meet their aims and build on their existing strengths whilst considering Scottish Government's priorities of creating a high-technology, knowledge-based economy.

The knowledge transfer stream of the General Fund for Universities (GFU) now provides a baseline allocation of £70,000 to each institution. This recognises the need for all institutions to have dedicated knowledge exchange staff and includes an element for cultural engagement, such as public lectures given by universities, engagements with schools and community groups and science centres.

What is commercialisation?

Commercialisation involves the same process as knowledge exchange, an exchange or transfer of ideas and knowledge from within universities to other users, but specifically refers to those ideas which have a commercial application.

The highest profile form of commercialisation is a spin-out or start-up company. A spin-out company is formed by a university when research generates a commercially viable product. The university will seek partners and venture capital to get it off the ground. A start-up company is formed where the university has had a role in forming the company but has neither ownership nor an intellectual property agreement. This can be through the university staff, graduates or students. While these can be very effective, they also face the same risks as any other small start-up company and there can be a high failure rate.

The process of licensing new technologies to existing industry can be just as valuable. Equally, commercial research commissioned from universities is an important way of linking university expertise and industry. Consultancy services offer clients a fast and cost effective means for businesses to gain tailored and independent research or expert advice.

Commercialisation is not just about technology. The creative arts and social sciences also have the potential to generate profitable commercial activity. The Creative Industries/Digital Media sector in Scotland is a significant employer, responsible for 4 per cent of total employment in Scottish industry and annual revenue in excess of £3 billion.

Proof of Concept

The Proof of Concept Fund was launched in 1999 to award grants that act as venture capital to assist the pre-commercialisation of leading-edge technologies emerging from Scotland's universities, Research Institutes and NHS Trusts.

Its goal is to help researchers export their ideas and inventions from the lab to the global marketplace with the goal of creating commercially successful products and businesses. Its early success has led to a series of extensions and increases in funding so that the value of the programme now stands at £79 million (£69m from Scottish Enterprise and £10m from the European Regional Development Fund).

There have been thirteen funding rounds to date with the Priority Industries eligible for funding, including life sciences, electronic markets, food and drink, enabling technologies, forest industries, tourism and energy.

The proof of concept funding has resulted in 42 new spin-out companies and 45 licensing deals, creating over 500 jobs, and leveraging over £238 million of public and private investment which would not otherwise have happened in Scotland.

A separate brief containing facts and figures on knowledge exchange activity is available on the Universities Scotland website.

www.universities-scotland.ac.uk
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