

Introduction

The main business of higher education is to teach students and to create new knowledge through research. However, if this knowledge and learning is to be useful it has to be applied to the areas of life where it can make a difference. This is knowledge transfer. There is a growing recognition that this aspect of higher education and stronger links between universities and business can make a significant contribution to economic development and universities are being encouraged to do even more of this kind of activity.

How is knowledge transferred?

Perhaps the most conventional and most important way in which knowledge is transferred from the higher education sector into the wider world is through the skills and experience gained by its graduates. 88 per cent of Scottish graduates find employment or start further learning within six months of graduating, making this the most effective form of knowledge transfer. Many higher education qualifications have a highly vocational element and training is a crucial motor for the Scottish economy.

Knowledge Transfer Partnerships is an initiative to support company-academic collaborations. A recent graduate is matched to a company with the express focus of solving a problem of the industrial partner. Financial support is available as a grant, which can cover up to 67 per cent of the programme costs. Knowledge transfer partnerships currently support 900 companies throughout the UK, 120 of which are in Scotland which equates to a 13.3 per cent share of the UK total. Approximately 80 per cent of current knowledge transfer partnerships involve small to medium sized enterprises (SMEs).

Knowledge can also be transferred directly between higher education institutions and business and industry. A new 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 increasing the knowledge exchange links between them. Interface matches the expertise, knowledge, skills and facilities that exist within twenty of Scotland's universities to business needs, particularly those of SMEs, on a no-fee basis. The pilot initiative which is based at Edinburgh University and backed by the Scottish Funding Council has proved enormously successful generating almost 400 enquiries and 150 connections only 18 months since its foundation, breaking initial targets by around 30 per cent. Although Interface's focus is primarily Scottish, 15 per cent of enquiries have come from south of the border, and a further 5 per cent have come from mainland Europe.

The Knowledge transfer grant

Public funding of knowledge transfer activity is a recent development. The Knowledge Transfer (KT) Grant, distributed 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, worth a total of £19.1 million in 2007/08, is intended to be a flexible funding stream for knowledge transfer activities and the commercialisation of research. Institutions have freedom to determine which 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.

In 2006/07 a cultural engagement element was added to the knowledge transfer grant in recognition that not all knowledge can be or should be applied for economic benefit. A budget of £0.5 million was distributed to institutions to support the great diversity of cultural knowledge transferred from higher education institutions into their local and national communities.

What is commercialisation?

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

The highest profile form of commercialisation is 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. This is a fairly new area of knowledge transfer for higher education and is more difficult to measure due to its diversity. Higher education institutions are keen to maximise this method of knowledge transfer.

Often people think commercialisation is only about technology however this is a mistake. The creative arts and social sciences also have the potential to generate profitable commercial activity. Scotland earned £5 billion from the digital media and creative industries in 2005, representing four per cent of GDP and employing nearly 100,000 people; four per cent of the total employment in Scotland's industries.

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. Its early success has led to a series of extensions and increases in funding so that the value of the programme now stands at £49 million and will run until 2009. There have been seven funding rounds to date with the Priority Industries available for funding, including life sciences, electronic markets, food and drink, enabling technologies, forest industries, tourism and energy. The Programme currently supports 184 projects worth over £30.2 million and has already created over 500 new jobs.