

### Knowledge Transfer Partnerships

#### Key Benefits

- Knowledge Transfer Partnerships involve three partners; a company, a research organisation and a recent graduate
- Businesses acquire new knowledge and expertise, resulting in a new product or service that will generate wealth
- Graduates gain business-based experience and personal and professional development opportunities
- Universities, colleges or research organisations bring their experience to enhance the business relevance of their research and teaching

Knowledge Transfer Partnerships  
Accelerating business innovation;  
an Innovate UK programme  
<http://www.ktponline.org.uk>

The aim was to develop a water-sensing system that would discriminate between different forms of aquatic pollution in real time. Through this, RS Hydro would be able to increase their market share and profit from the environmental monitoring sector.

A recent PhD graduate, Dr Kieran Khamis, was employed to lead on the project. While employed by the University, Kieran was hosted by RS Hydro, ensuring that new knowledge developed over the course of the project was passed on to company staff. Over time the scope of the project was broadened, such that initial plans for field testing were expanded to include monitoring of drinking water and sewage treatment works, along with river catchment surveys. The laboratory capabilities of RS Hydro were also expanded, allowing the company to continue testing and calibration of sensors beyond the lifetime of the project.

As for the product itself, the company now has a sensor platform for which it owns the intellectual property rights, allowing for future exploitation. The product, once launched, is anticipated to result in a significant increase in profits over the next three years.

In recognition for his excellent work, Kieran was awarded Business Leader of the Future at the KTP Best of the Best Awards in London. The award, given to KTP Associates that demonstrate outstanding leadership skills, came with a cash prize, and the project was publicised via a number of media outlets. Following the close of the project, Kieran is now in an excellent position from which to pursue a career in environmental research. Kieran is now employed as a Research Fellow leading the development of the University of Birmingham's 'Ecolab' facility.

### RS Hydro Ltd

#### Helping to keep the world's rivers clean

While the UK's canals and rivers have come a long way since the infamous 'Great Stink' of the Thames in 1858, pollution remains an ongoing problem for the country's waterways. Agricultural and urban waste, including sewage and manure, can cause significant damage to freshwater ecosystems and has wider implications for human health.

In England, the Environment Agency samples around 7000 river and canal sites each year to assess nutrient levels and chemical / biological quality. However, water chemistry samples are then sent to laboratories for testing, causing delays that can affect the accuracy of the data collected. The ideal situation is to monitor water pollution in real time, allowing the Environment Agency and others to keep abreast of water condition changes as they happen.

RS Hydro is a total solutions provider for the water and wastewater industries, selling to the UK and worldwide. It specialises in a variety of water-monitoring equipment, including flow meters, water-quality monitoring instruments and wireless telemetry systems. With the aid of funding from two UK Research Councils, the Engineering and Physical Sciences Research Council (EPSRC) and the Natural Environment Research Council (NERC), RS Hydro

engaged in a two and a half year Knowledge Transfer Partnership (KTP) project with the School of Geography, Earth and Environmental Sciences at the University of Birmingham.



The structure [of a KTP] helps with the collaboration, because it keeps you all talking and keeps everyone on the same page, but there's also flexibility for you to put your own mark on the project.

Yet it's not just about the project; it's about your development as a scientist and as someone in a business environment.

- Kieran Khamis, KTP Associate



The project received academic support from Professor David Hannah and Dr Chris Bradley, both based within the School of Geography, Earth and Environmental Sciences at the University of Birmingham. For the academics, the project has highlighted a number of potential opportunities in the environmental monitoring sector. Engaging closely with RS Hydro has provided the academic team with valuable information on the business applications for environmental fluorescence, whereby the light emitted from water is used to detect pollutants.

The project has directly helped in leveraging an exploratory grant from NERC to study the effects of nano-materials on the fluorescence of an urban river. In addition, results have been presented at a number of invited talks and in articles published within trade literature.

## About KTP

Launched in 1975 as the Teaching Company Scheme, Knowledge Transfer Partnerships are collaborative projects between a company, a recent graduate and a research organisation.

They are funded by Innovate UK, the UK Government's innovation arm, and a contribution from the partner company. The graduate is employed to work on the project, with Innovate UK making a significant contribution towards salary, travel and subsistence, consumable and personal development costs.

A recent report has shown that for every £1m of government money invested in KTP:

- \* 25 new jobs were created
- \* 353 staff were trained
- \* £2.2m was invested in plant and machinery

Companies involved in KTP have seen an average increase of over £1m in annual profit before tax.

## About the University of Birmingham

The University of Birmingham has been challenging and developing great minds for more than a century. Characterised by a tradition of innovation, research at the University has broken new ground, pushed forward the boundaries of knowledge and made an impact on people's lives.

We continue this tradition today and have ambitions for a future that will embed our work and recognition of the Birmingham name on the international stage.

Having partnered on over 80 KTP projects, worth almost £7m, the University of Birmingham is well placed to support the development, delivery and follow-on of your KTP. Our dedicated team of Business

Engagement Managers and Research Support Officers are able to comment on the viability of your idea, aid in completion of the online application and act as a liaison between the partners involved. At Birmingham Research Park we have meeting rooms available, with Birmingham a convenient central hub for many companies to do business in. Contact us at [KTP@contacts.bham.ac.uk](mailto:KTP@contacts.bham.ac.uk) or 0121 414 5070 for further details.