

Knowledge Transfer Partnerships

KTP BENEFITS

Knowledge Transfer Partnerships are designed to benefit everyone involved

- 🔄 Businesses will acquire new knowledge and expertise
- 🔄 KTP Associates will gain business-based experience and personal and professional development opportunities
- 🔄 Universities, colleges or research organisations will bring their experience to enhance the business relevance of their research and teaching

Knowledge Transfer Partnerships

Accelerating business innovation; a Technology Strategy Board programme

<http://www.ktponline.org.uk>

CAMPBELL SCIENTIFIC LTD PORTABLE SENSOR HELPS KEEP ROADS SAFE IN WINTER

ABOUT THIS CASE STUDY

Campbell Scientific Ltd worked with the University of Birmingham on this Knowledge Transfer Partnership (KTP). The collaboration aimed to design and build an advanced road surface sensor system for predicting weather conditions likely to affect the safety of public transport.

ABOUT THE SPONSOR

The Technology Strategy Board is a business-led organisation established by the Government. Its mission is to accelerate research into, and development and exploitation of, technology and innovation for the benefit of UK business - building economic growth and quality of life.

FAST FACTS

- 🔄 New cost-effective road surface sensor and robust road weather system developed and launched
- 🔄 Greatly increased knowledge of the road weather market and customer requirements, improving competitive position
- 🔄 In-roads into new market area, increasing sales turnover by over £200,000/year
- 🔄 Acquired skills and knowledge to develop innovative road weather products, and formed many useful contacts
- 🔄 Greater understanding of effective knowledge transfer and useful teaching material for the Academic Partner
- 🔄 Valuable industrial experience and enhanced project management skills for the Associate

The Company



Campbell's new system is helping keep freight moving at the Eurotunnel terminal

“The KTP was valuable in helping us to fully understand the UK road weather market, through working with leading experts in this field at the University of Birmingham.”

Dr Andrew Sandford, Technical Manager, Campbell Scientific Ltd

Campbell Scientific Ltd specialises in the design and manufacture of data acquisition and meteorological equipment for a wide range of applications, including agricultural and hydrological research, environmental monitoring, meteorology, and automotive testing. Formed in 1985, the Company is the European subsidiary of Campbell Scientific Inc, Utah, USA. Around 40 people are employed at its Midlands offices and assembly plant.

ABOUT THE PROJECT

Campbell Scientific has put significant research and development effort into its hardware and software, building an enviable reputation for the range and quality of its products. Although sales of its datalogging equipment remained strong, the Company realised the sales potential for a new road weather information system (RWIS) to help local authorities predict

more accurately which roads required gritting. This KTP brought together the University of Birmingham's experience in RWIS development and marketing, the Associate's knowledge of meteorology, and the Company's skills and experience in manufacturing weather sensors, to develop an innovative new product that fully met market requirements and provided Campbell with a competitive advantage.

BENEFITS

The collaboration proved highly successful. Campbell has greatly increased its knowledge of the road weather market, current research and established many useful contacts, which will benefit future developments. This knowledge guided the project and facilitated development of a new sensor and RWIS that continues to win business for the Company.

Utilising data from trials using a bought-in road weather sensor linked to a Campbell weather station and datalogger, the Associate identified the system requirements. Working with colleagues, he then led development of a cost-effective, accurate portable infra-

red road temperature sensor that could be installed on existing street furniture. This new system, IRIS (Infra-red Road Information System), was successfully field tested and subsequently marketed, attracting much interest within the UK and overseas. Sales for the system are predicted to top £200,000/year, and to open the market to other products in Campbell's range, further increasing turnover.

RESULTS

- Cost-effective, innovative road weather system developed and marketed, opening new market opportunities
- Knowledge in place to guide future product development



- New client base attracted to the Company, benefiting core business areas
- Potential for expansion into export markets

The Associate

“Working as a KTP associate not only allowed me to further my technical knowledge, but also to develop a wide range of project management skills, which I’m putting to good use as I undertake my PhD.”

David Hammond, KTP Associate

David Hammond was recruited as the KTP Associate. He proved to be a hard-working, capable and highly-motivated individual, driving the project forward and playing a key role in its success.

BENEFITS

Helping Campbell to design and develop an advanced road surface sensor system, and break into a new market area, has provided David with valuable industrial experience. His knowledge and understanding of road weather systems has been enhanced, and he has forged useful links with leading engineers and academics within the road weather arena. Being involved in all areas of product development, from initial concept research through to launch, has allowed David to apply and enhance his project management and organisational skills, and given him an appreciation of commercial deadlines.

RESULTS

- Opportunity to work at the research frontier in a global marketplace
- Valuable industrial and commercial experience
- Presented paper at major international road weather conference
- Returned to academia to study for PhD in Meteorology

The Academic Partner

“This project helped strengthen the relationship between the University and Campbell Scientific.

The KTP gave me a valuable insight into the road weather market and provided new ideas for research.”

Professor John Thornes, Lead Academic, University of Birmingham

UNIVERSITY OF BIRMINGHAM

The School of Geography, Earth and Environmental Sciences worked with Campbell Scientific to deliver this KTP. The School has over 35 years' experience in the development and marketing of RWISs and road weather forecasting, and has successfully launched two spin-out companies. John Thornes, Professor of Applied Meteorology, was Lead Academic on the project, with key input from Dr Lee Chapman.

BENEFITS

The academics have benefited from their involvement in this KTP. The work has provided considerable insight into effective knowledge transfer between the University and a commercial company, which will benefit future collaborations. Case studies based on the KTP have been built into various undergraduate and postgraduate courses, adding real industrial and commercial relevance. The sensor developed is being utilised in research work, and is being monitored and tested by students at the school.

RESULTS

- Experience of effective knowledge transfer
- Papers published in refereed journals, raising the University's profile
- Useful course work developed