

CASE STUDIES - Knowledge Transfer Partnerships (KTP)

Below are two KTP case studies by UK Department of Research and Innovation. Knowledge Transfer Partnerships (KTP) is a UK-wide programme that helps business improve their competitiveness and productivity through making better use of knowledge, technology and skills available in the UK, and it is something that universities are keen to participate in.

You can find more information at the following links:

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

<http://www.swan.ac.uk/business-and-industry/ktp/>.



Tempus Project 517119-TEMPUS-1-2011-RS-TEMPUS-SMGR

University of Belgrade
Studentski trg 1, Belgrade, Serbia
www.careers.ac.rs

KNOWLEDGE TRANSFER PARTNERSHIP

Product development



Swansea University
Prifysgol Abertawe

The School of Engineering develops waste water products with Samatrix

Samatrix Ltd, a waste water and engineering contractor, and Swansea University's School of Engineering, have recently been awarded a Short Knowledge Transfer Partnership (KTP) – one of the first Short KTPs to be awarded in Wales.

Academic Coordinator:
Dr Stephen Hardy

Academic Supervisor:
Dr Michael Clee

Funded By: Welsh Assembly Government under the Knowledge Transfer Partnerships scheme.

Funds Awarded: £38,000

Length of KTP: 40 weeks

Transferring knowledge

The KTP programme is Europe's leading programme helping businesses to improve their competitiveness and productivity through the effective use of knowledge, technology and skills that reside within the UK knowledge base.

A KTP achieves this through the forming of a partnership between a business and an academic institution (such as university), enabling businesses to access skills and expertise for strategic developments.

The knowledge sought is embedded into the business from the knowledge base through a project, or projects,

undertaken by a recently qualified person (known as the Associate), recruited to specifically work on that project.

Development delays

Managing Director Samuel Munn approached Swansea University's Department of Research and Innovation with an advisor from the Welsh Assembly Government when he identified a bottleneck in developing a number of innovative products and processes within his business - Samatrix Ltd.

"We hope that the KTP will be great for Samatrix, as we now have the opportunity and time to work on projects that will hopefully develop our business, as well as enhancing the skills of the Associate."

Samuel Munn
Managing Director of Samatrix Ltd

These innovative ideas were at various stages of development but, due to limited time and manpower resources, it was proving difficult for him to move them forward.

The KTP scheme was considered to be a good resolution to advance these products and processes.



Samatrix Ltd

New products are to be developed with the award of a new KTP

Water success

Essentially the programme is ideal because it is designed to provide a structured and focused approach to strategic project delivery, supported by the business, academic staff, skilled associates, world leading test and measurement facilities and first class research within the University.

Dr Stephen Hardy, Director of External Collaboration and Third Mission Activities in Swansea University's School of Engineering and Academic Coordinator for the project, and Samuel have been working closely together to finalise the details of the project, which has recently started.

Samuel said, "We hope that the KTP will be great for Samatrix, as we now have the opportunity and time to work on projects that will hopefully develop our business, as well as enhancing the skills of the Associate."

There are many benefits of the KTP programme for Samatrix, including the opportunities to:

- work with subject experts.
- meet many potential employees in the form of undergraduate, graduate and postgraduates.
- provides a cost-effective solution to in-house skills gaps.
- build long term relationships with universities to uncover further research and development possibilities.
- access funding that requires partnerships between academia and industry.
- provide industry specific input to taught courses to ensure graduates have the right skills and competencies to enter the world of work.

University expertise unleashed

Dr Hardy, is an enthusiastic advocate of the KTP programme and has successfully completed many projects over the last twenty years.

He said, "Working with a small company like Samatrix has been a real eye-opener for the School of Engineering and our students. It has already given us an insight into how a small business runs, compared to some of the larger companies that we have dealt with in the past".

The advantages of the KTP scheme are far reaching. The University benefits from close relationships with companies by:

- clarifying existing and emerging business needs and embedding this up-to-date knowledge into current modules and courses.
- discovering where Industry would like to see the university research and development activity focused.
- promoting the skills that are available.
- gaining exposure to real life problems and case studies from industry for students to work on.
- generating new spin out projects and ideas for further research and development opportunities.

"KTPs provide an ideal opportunity for Universities to collaborate with companies on projects of strategic importance to the regeneration and future well-being of our local and national design and manufacturing base."

Dr Stephen Hardy

Director of External Collaboration and Third Mission Activities in Swansea University's School of Engineering

Dr Hardy said, "KTPs provide an ideal opportunity for universities to collaborate with companies on projects of strategic importance to the regeneration and future well-being of our local and national design and manufacturing base. It is very much a two-way process where the companies benefit from the input of knowledge and expertise within the

University while, at the same time, the members of staff involved from the University have first-hand experience of innovative and strategic company development projects"

A very capable and enthusiastic Associate has recently been recruited and the KTP project has just started. Both partners are optimistic and eager to see real results emanating from their technology and knowledge transfer.

Samatrix background

Samatrix was established in 2001 and is based at Fendrod Business Park, in Swansea Enterprise Zone. Samatrix are waste water consultants and engineering contractors mainly to the water utility companies, a number of the South Wales Local Authorities and private companies.

As well as undertaking Hydraulic Systems Analysis and Pump Performance Testing Samatrix specialise in the design, installation and maintenance of foul and storm water pumping stations predominately in the South Wales and the West of England. They are also utility service partners with Wilo (Emu) Pumps. More details can be found at samatrix.co.uk.

www.swansea.ac.uk

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>

LAING O'ROURKE PLC KTP HELPS A MAJOR CONSTRUCTION COMPANY TO BUILD A SUSTAINABLE FUTURE

ABOUT THIS CASE STUDY

This Knowledge Transfer Partnership (KTP) project established a successful partnership between Laing O'Rourke Plc and Swansea University. The aim was to harness the potential of biometrics and radio frequency identification (RFID) technology, together with a systematic approach to waste management, in order to deliver competitive advantage in the construction industry.

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 skills embedded in resource efficiency, biometrics and RFID
- 🔄 The creation of a new system using biometric technologies
- 🔄 Annual savings from manufacturing improvements
- 🔄 Annual sales turnover expected to increase
- 🔄 Professional development and specialist experience for the three Associates
- 🔄 New research and networking opportunities for the University

The Company

"These three concurrent KTP projects have brought us a wealth of new approaches and technological improvements which in turn have helped us to greater efficiency and productivity."

Ray O'Rourke, Chairman & Chief Executive, Laing O'Rourke Plc

Laing O'Rourke Plc is the largest privately owned construction firm in the UK with a head office in Dartford, Kent and a chain of offices in the UK, Germany, Australia and United Arab Emirates. Since the acquisition of Laing in 2001, the business has been growing rapidly. The Company takes a holistic view of construction and specialises in delivering ambitious and innovative construction projects that benefit both clients and the community.

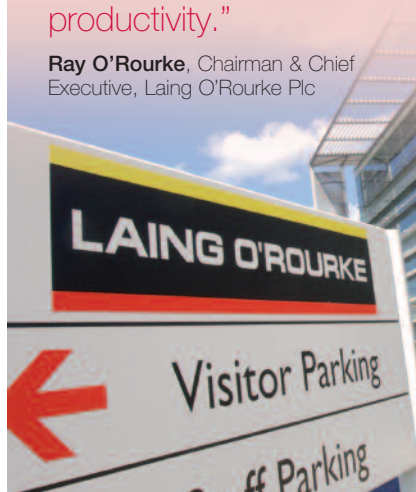
ABOUT THE PROJECT

Laing O'Rourke is committed to being an innovative business that is mindful of its impact, whilst striving to operate productively and profitably. The Company wanted to make efficiency savings and technological advancements by implementing three projects simultaneously. These projects involved harnessing technologies associated with waste management, biometrics and radio frequency identification (RFID). Laing O'Rourke looked to Swansea University for specialist advice, using three Associates to implement the respective projects.

BENEFITS

There have been successes within each of the three KTP projects. The first project, which concerned waste management, was able to establish a waste baseline and from this to deliver some key benefits. These included finding out the true cost of wasted materials and labour, and then addressing these through designing out waste at the concept stage, applying reverse logistics, finding ways to increase resource efficiency and re-using construction plastics in new products.

The second project looked at biometrics and how the technology could be implemented in a challenging environment, to address a range of business needs. There were successes in proposing novel mobile biometric authentication solution, developing an entirely new system to manage a mobile workforce with real-time attendance monitoring. In



addition, the mobile biometric solution was filed as a patent, allowing Laing O'Rourke to explore it in a wider market and other sectors.

The third project aimed to implement RFID technology across the entire construction industry value chain. This resulted in RFID being applied to manage the manufacture and aftercare of precast concrete units, successful implementation of an asset management solution to support the maintenance of Mechanical and Electrical equipment, and expanding Laing O'Rourke's solution portfolio for new and existing clients by embedding RFID expertise in the business.

These KTP projects have resulted in the successful embedding of a broad range of knowledge and capabilities into the Company. They have also given access to a wide network of academic and commercial sectors beyond the original partnership. The capabilities and learning acquired through the waste management initiative have resulted in a greater understanding of

making efficiencies within a range of processes, and designing out waste throughout the life-cycle of products and materials. The Company is able to apply its appreciation of logistic models in other areas of the business to help it to reduce wasted resources and effort. Already the reduced waste and increased resource efficiency is expected to make considerable cost savings. Laing O'Rourke has been able to exploit active and passive RFID technology and to add value through the product life-cycle. Initially, work focused on precast concrete units but it has been extended to other products and materials.

The KTP projects have also helped to improve the Company's operations and competitive position. Streamlining processes and logistics has enabled the Company to benefit from cost savings and an improved environmental and financial performance. In addition, the projects have brought many operational benefits and efficiencies from adapting and extending the technologies involved. For example,

loading and dispatch of products and materials can be done more accurately and there is less use and waste of resources. Easily-damaged barcode labelling has been replaced with RFID tags to track precast components. In addition, the automatic identification and data capture (AIDC)-ready infrastructure supports bids and the potential to win new work.

As a result of the KTP innovations and efficiencies, annual sales turnover is expected to increase and the Company is now in an even stronger competitive position.

RESULTS

- New skills embedded in resource efficiency, biometrics and RFID
- Improved business operations and competitive position
- Cost savings from systematic waste reduction
- Annual savings from manufacturing improvements
- Annual sales turnover expected to increase

The Associates

Jonathan Williams, Bin Chen and Akshay Peer, KTP Associates

Three Associates worked on this KTP, Jonathan Williams brought an M Eng in Environmental Engineering to the waste reduction task, Bin Chen brought an MSc in Communication Systems to the task of using biometric monitoring and Akshay Peer brought a B Eng (Hon) in Electronics and Communication Systems to the programme of work about RFID tagging.

BENEFITS

The Associates have benefited from succeeding with challenging projects that required an understanding of each business case. They have all acquired a better understanding of commercial realities and have benefited from significant personal development. The Associates have enhanced their skills in communicating at all levels, presenting to a wide audience and networking. They have also gained significant practical experience in project management, and successfully obtained the Prince2 certification. As a result of their achievements each was offered employment with the Company. Each Associate has acquired membership of a professional body, the Chartered Institution of Wastes Management for the first Associate and the Chartered Management Institute for the second and third Associates. In addition, the Associates have furthered their academic abilities and all are working towards completing their PhDs.

RESULTS

- A greater understanding of a changing commercial environment
- An appreciation of the realities of a construction company
- Further experience in the respective areas of waste, biometrics and RFID
- Professional development, professional memberships, and PhDs

The Academic Partner

"This collaboration has led to advances not only in our knowledge of the technologies involved, but also in our understanding of how they could be successfully applied within various sectors and industries."

Professor Marc Clement, Lead Academic, Swansea University



Swansea University
Prifysgol Abertawe

BENEFITS

This KTP partnership has acted as a successful springboard to other collaborative activities between the University and the Company. The University has benefited from further commercial exposure and a greater understanding of the construction industry. In particular, it has acquired an in-depth knowledge of waste reduction, biometric and RFID technologies as well as their potential application in various sectors and settings. Further research is being carried out into RFID and the benefits within supply chain management. Already, projects related to technologies about AIDC have attracted the interest of both Traffic Wales and Cardiff International Airport.

RESULTS

- Greater knowledge of the construction industry
- A further understanding of new applications for waste reduction, biometrics and RFID
- New opportunities for further research and information sharing
- Additional teaching material and publications