

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 development opportunities
- 🔄 University, college or research organisation will bring their experience to enhance the business relevance of their research and teaching

A DTI Business Support Solution

EXPERT MONITORING LIMITED WIRELESS APPROACH OFFERS FLEXIBLE SENSOR NETWORKING

ABOUT THIS CASE STUDY

EXPERT MONITORING LTD WORKED WITH CARDIFF UNIVERSITY SCHOOL OF ENGINEERING ON THIS KNOWLEDGE TRANSFER PARTNERSHIP (KTP). THE COLLABORATION AIMED TO DEVELOP WIRELESS SENSOR NETWORKING PRODUCTS, TO FACILITATE LOW-COST, EFFECTIVE CONDITION MONITORING, PRODUCTION REPORTING AND ENERGY MANAGEMENT.

ABOUT THE SPONSOR

THE DEPARTMENT FOR TRADE AND INDUSTRY (DTI) DRIVES THE AMBITION OF 'PROSPERITY FOR ALL' BY WORKING TO CREATE THE BEST ENVIRONMENT FOR BUSINESS SUCCESS IN THE UK. THE DTI HELPS PEOPLE AND COMPANIES BECOME MORE PRODUCTIVE BY PROMOTING ENTERPRISE, INNOVATION AND CREATIVITY.

FAST FACTS

- 🔄 Successful development of wireless sensor technology for condition monitoring
- 🔄 Development extended to energy monitoring and targeting products
- 🔄 £700,000 investment attracted into Host Company, enabling expansion, including a dedicated manufacturing facility
- 🔄 Significant increase in turnover and staffing levels
- 🔄 Multi-million pound funding for Academic Partner to work on military applications for the technology
- 🔄 Unique training platform for Associate, enhancing management and engineering skills

The Company



Expert Monitoring develops innovative wireless process systems for the industrial market place.

"The opportunity to collaborate with Cardiff University via KTP has provided an invaluable R&D mechanism to enable Expert Monitoring complete our business model transition from a service-based company to a product-based one."

Dr Ken Gale, Managing Director Expert Monitoring

Expert Monitoring Ltd was founded in 1998, evolving out of an earlier collaboration between a research team from Cardiff University School of Engineering and British Steel. The company offers various process, condition and energy monitoring and targeting products and services to a wide range of companies.

ABOUT THE PROJECT

When Expert Monitoring began business, the company found that the cost of installing hardwired sensor networking products, coupled with the physical and technical difficulties of installing cable in hostile environments, was hampering

growth, despite a large potential market. Recognising the need for a cable-free approach, this KTP was set up to develop a suitable solution, capable of communicating data without being affected by interference from electrical controls that are common within manufacturing plant.

BENEFITS

The collaboration successfully developed a wireless sensor network design, using Bluetooth™ low-power radio technology as the platform to network thousands of sensors and/or data points around a manufacturing plant.

Following successful trials, the WiSNet™ Wireless Sensor Network was launched in autumn 2003. The technology uses robust, self-powered, self-configuring components, designed to replace data cables, sensor power supplies, termination enclosures, data acquisition instrumentation and collection/analysis software.

As part of the KTP, the technology has been used to develop a wireless energy

monitoring and targeting system, offering a low-cost way for businesses to monitor production machine outputs, site energy consumption, energy costs and other production data.

Through the KTP, Expert Monitoring has gained exceptional technical and commercial advantage in the application and use of wireless sensor networks, and has moved from being a software consultancy firm to being a volume product manufacturer.

RESULTS

Significant technical advances, positioning Expert Monitoring at the forefront of wireless communication development

- Nominated for the DTI National Measurement Awards 2004 for *Measurement Product of the Year*
- Over £700,000 investment attracted into Expert Monitoring over the last three years
- Continued expansion of workforce and workplace
- Turnover expected to more than double over next three years
- Identification of £100 million market for industrial monitoring and targeting products
- Lucrative technology partnerships arising out of work record

*Bluetooth is a trademark of Bluetooth SIG
WiSNet is a trademark of Expert Monitoring Ltd*

The Associate

“The opportunity to be part of a KTP has afforded me many opportunities and given me a comprehensive understanding of the mechanisms of a small business. KTP, Cardiff University and Expert Monitoring have given me a fantastic head-start into industry.”

Michelangelo Ruggario, KTP Associate

Michelangelo Ruggario was the Associate assigned to this KTP with Expert Monitoring.

BENEFITS

Michelangelo's engineering and managerial skills developed significantly during the two-year KTP programme. His role in the development of a new electronic product - from design concept through prototype developments to batch production - gave him a unique training platform. His work involved business project management, digital hardware design, embedded software implementation, and R&D project management. He also gained experience outside his initial scope of work, including making presentations to attract investment.

RESULTS

- Michelangelo gained a unique insight into working in a small company
- The leading edge work helped to develop his technical skills with regard to embedded systems hardware design and software programming
- Michelangelo gained an NVQ Level four in Management and is writing up an MPhil research degree, based on the KTP work

The Academic Partner

“My colleagues and I were delighted to be associated with a dynamic company like Expert Monitoring. Dr Gales's vision and drive ensured this KTP had every chance of success.”

Professor Ken Lever, Director of Communications Research Centre, Cardiff University



Dr Dave Jennings and Professor Ken Lever led a research team from Cardiff University School of Engineering to deliver this KTP. The School is recognised as one of the best engineering schools in the UK in terms of its facilities, research and teaching.

BENEFITS

The academic partners have benefited extensively from working with Expert Monitoring, gaining valuable experience of work in a commercial environment, as well as extensive knowledge in the development of wireless products and the management of multi-skill teams.

The 'know-how' gained through involvement in the development of printed circuit boards and embedded software code for WiSNet products, has enabled the University to put together a team to work on military applications for the technology.

RESULTS

- Multi-million pound funding awarded for dedicated wireless laboratory, to research military applications for the technology
- Two MPhil projects have been registered, and two final year undergraduate projects completed