

Knowledge Transfer
Partnerships

North West Innovation Case Book

Innovate UK



WELCOME



DR CLIVE HAYTER,
Head of KTP, Smart and Innovation Vouchers, Innovate UK

Since joining Innovate UK I have been amazed by the sheer size of the many success stories that I have come across in the KTP Programme. KTP is one of many successful initiatives provided by Innovate UK. Its track record is a shining example of what can be achieved when dynamic organisations link with academic institutions. Innovate UK continues to support organisations in shaping the future of the British Business Community. I hope by reading the success stories within this case book inspires you and your organisation to become involved.



DR IAN BROTHERSTON,
KTP Programme Manager, Innovate UK

KTP is celebrating 40 years which is a marvellous achievement. This distinguishes KTP as one of the world's leading initiatives for Knowledge Transfer. KTP promotes innovation, enterprise and collaboration. It delivers significant benefits to those that are involved. It improves the competitiveness of the business, develops the careers of the graduates and provides opportunities for the academics to apply their research. This is truly a three-way partnership and the following case studies are excellent examples of this.

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OVERVIEW

Knowledge Transfer Partnerships (KTP) is a UK-wide, government-funded programme, established in 1975, aimed at helping UK businesses to improve competitiveness, productivity and performance through better use of the knowledge, technology and skills available within universities and other UK knowledge bases. They do this through the development of collaborative partnerships, which stimulate innovation and help to transform the organisations taking part.

November 2015 marks the 40th anniversary of KTP, during which time over 5,500 organisations (from micro-sized to global businesses); 176 knowledge base organisations; and 6,000 graduates have participated in and benefited from the scheme. This longevity and structural stability reflects the fact that KTP has been extremely successful in helping business develop new strategic capabilities and improve their bottom line.

Knowledge Transfer Partnerships are:

- Europe's leading knowledge transfer scheme
- one of the UK's largest graduate recruitment programmes

How does it work?

KTP is a partnership between a business and a UK knowledge base, such as a university, further education college or research and technology organisation, which:

- implements an agreed project, for up to 36 months, central to the strategic development of the business;
- recruits a high calibre graduate, known as the Associate, who is based at the business to deliver the project;
- provides joint supervision to the Associate through business and academic mentors;
- accesses project specific knowledge and expertise from the university, to support the Associate and business to deliver the project; and
- is part funded by the government with the balance of the costs coming from the business

What does it cost?

The total annual cost of a KTP on average is £65k, which is split between the business and the government funding body.

- a small or medium sized business will contribute around one third of the total project costs
- a larger business will be responsible for contributing around half of the total project costs

The budget covers the cost of employing a full-time Associate to work at the company on the defined project, half a day per week of academic consultancy and £6k / year budget for travel, consumables and training for the Associate.

HOW DOES KTP HELP BUSINESSES GROW?

Knowledge Transfer Partnerships help you and your business to:

- increase profits, knowledge and capability
- gain competitive advantage through new products, processes and services
- introduce new technology through innovation
- become leaner, more efficient and set for growth

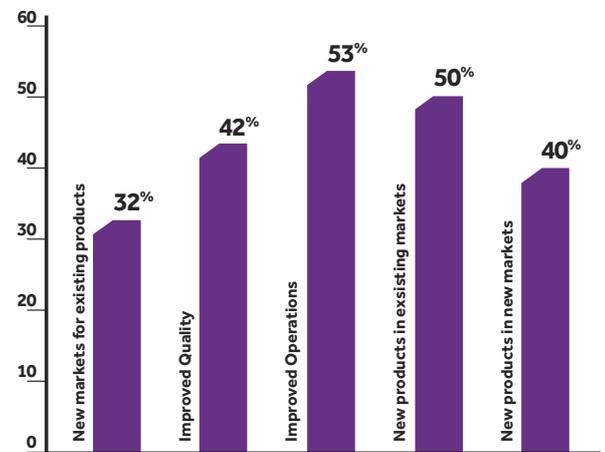
In 2013-14, for every £1m of government money invested in KTP;

- 25 new jobs were created
- 353 company staff were trained
- £2.2m was invested on average by companies in plant and machinery
- £3.06m was invested on average by companies in R&D
- businesses predicted a post-project increase in annual pre-tax profit of **£11.65m**

In addition, businesses participating in KTP gained on average:

- £33k one-off increase in profit before tax
- £261k anticipated annual increase in profit post-completion
- £63k invested in plant and machinery
- 3 new staff being employed (including the Associate)
- 31 staff being trained
- £265k being invested in R&D activity
- An anticipated increase in annual exports of **£967k**

90% of businesses say that the results they achieved through participating in a KTP would play a significant part in improving the future performance of their business (TSB Achievements & Outcomes Report 2013-14).



Reasons provided by participating businesses for increased profitability following a KTP - from graded KTP projects

ALLIANCE LEARNING

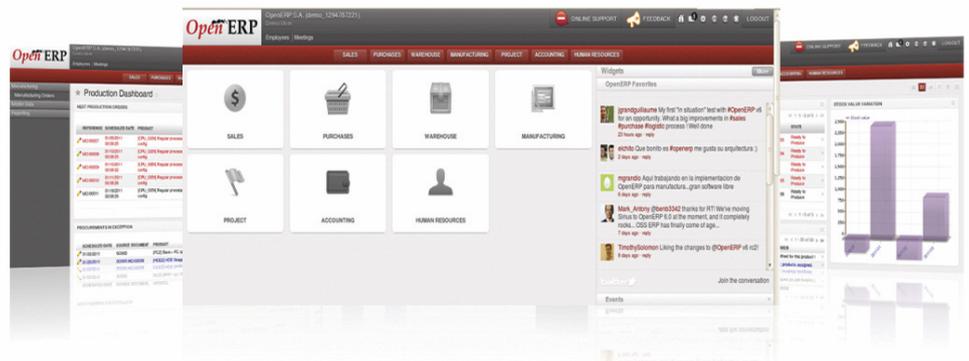


Developing and implementing a web-based enterprise system with customer relationship management modules to improve revenue.



Challenge

This 2 year project aimed to improve business productivity and performance by improving customer relationships, sales, and profitability by deploying integrated Enterprise Systems (CRM, Capacity Planning System, SharePoint etc.). The project also aimed to improving efficiencies by reducing costs in terms of time spent by the staff in carrying out information management tasks.



Company Overview

Alliance Learning is a leading training provider in the Northwest with over 40-years' experience of delivering Apprenticeship Programmes and an extensive range of courses across a wide range of occupational areas and industry sectors.

Solution

The academic team worked closely with Alliance Learning to develop the system requirements. The key outputs of this KTP project included the development and implementation of state-of-the-art Enterprise IT systems (CRM System, Capacity planning system, and SharePoint Portal for knowledge sharing) using mainly open source technologies.

The project implemented a company-wide integrated enterprise system to support its business strategy and improve its competitive position by taking advantage of market opportunities, such as expanding its customer base, and cross selling its training services amongst its business divisions and teams.

Benefits

This KTP has helped Alliance Learning to lower the cost of operations in several of the company's departments, resulting in improved profit margins. For instance, this project helped the company to achieve over 50% time savings, eliminating the need to manually retype hundreds of sales records in to different systems. Based on the operational efficiencies achieved through the KTP, Senior Management have been able to spend more time on improving service to its customer organisations and overall quality of training provided to apprentices. The July 2013 OFSTED inspection report states that Alliance Learning has moved up from a Satisfactory Grade-3 in 2010, to a Grade-2 in 2013.

There have been considerable other benefits gained including the reduction in company's carbon footprint due to the extensive usage of electronic systems compared to paper based systems. Given the success of this KTP, Alliance Learning is planning to develop another major project with the University of Bolton to improve its online presence i.e. fully web based sales process, systems integration etc.



We believe that the KTP Programme is an ideal avenue for small businesses to collaborate with Universities and exploit advancements in technologies to generate tangible business benefits.



Mrs Julie Robinson,
Chief Executive,
Alliance Learning



This KTP has been a successful project for all the stakeholders and the research expertise gained from this project has provided significant knowledge contributions to the University.



Dr Kondal Reddy Kandadi -
Executive Dean, University of Bolton

ARVIA TECHNOLOGY

Developing a novel treatment process for drinking water.

Challenge

Entry into the UK drinking water market requires Drinking Water Inspectorate (DWI) regulatory approval and consequent acceptance in the industry's 5 year asset management plan (AMP).

In order to apply for such approval, Arvia needed to demonstrate and develop a deeper understanding of the performance of their technology to address the treatment of very low and trace organic contaminants – which are some of the most difficult contaminants for existing techniques to treat.



Solution

Arvia sought expertise from Professor David Polya and Dr Bart Van Dongen from the School of Earth, Atmospheric and Environmental Sciences at The University of Manchester, whose research encompasses quantification of micro-pollutants in drinking water.

Together they developed a 30 month project plan and appointed KTP Associate Mohammed Akmez Nebeerasool to establish and embed in-house skills within Arvia to better understand the mechanisms of organic breakdown and nature of contaminant interaction with the adsorbent, in order to demonstrate compliance to DWI regulations. During the project the team characterised the contaminants for removal (decontamination), which in turn produced Standard Operating Procedures for working with a variety of targeted contaminants.

Benefits

The partnership between Arvia and The University of Manchester has been mutually advantageous and has resulted in a number of key achievements. The Drinking Water Inspectorate application has been approved and submitted and Standard Operating Procedures have been developed and embedded for 7 key water quality determinands.

Arvia's commercial strategy has been realigned towards treating waters containing low and trace levels of organic compounds, which is anticipated to generate in excess of £0.5M additional sales within the next three years. Arvia is now working with a number of water companies to implement treatability studies and pilot facilities. In order to target the market opportunity for low and trace organics, Arvia has employed 4 new staff and over £350,000 has been invested in new plant, machinery and a new laboratory site.

MANCHESTER
1824

The University of Manchester

arvia
ORGANICS
DESTRUCTION

Company Overview

Arvia Technology was formed as a spin out from The University of Manchester to commercialise a water and wastewater treatment technology. After successfully demonstrating the benefits of the system to the nuclear industry to treat radioactive oils, Arvia wanted to apply the process to offer a new and alternative technology for the treatment of drinking water.



Working with Arvia on this KTP has enabled us to use our expertise to help promote British job-creating solutions to important environmental problems.



Prof David Polya,
The University
of Manchester



Analysis of micro-pollutants was beyond Arvia's capabilities and working with the University allowed Arvia to develop in-house expertise, whilst applying for the relevant approvals and gaining a deeper understanding of the process.



Nigel Brown,
Founder Director,
Arvia

ARCH TIMBER PROTECTION

Develop sustainable, effective fire retardant (FR) timber treatments to maximise competitive advantage and enter new markets.

Challenge

Arch Timber Protection recognised that to make any significant growth; sustainability, cost, ease of use and market profile were key commercial drivers.

To achieve this, the company needed to understand the effects of fire retardant (FR) treatments on timber to develop suitable screening protocols in order to identify novel treatments; develop new products; and recognise and deliver a publication portfolio to promote Arch Timber as a leading research organisation in timber fire protection.

Solution

UCLan's world leading Centre for Fire and Hazards Science was the ideal partner to collaborate with Arch on a 3-year KTP. The KTP Associate began her investigation into the performance of existing and novel fire retardant treatments on the fire behaviour of wood-based commodities. After a re-assessment of priorities, the importance of FR distribution and chemistry became the main focus of the KTP.

Benefits

The KTP provided the building blocks for the company strategy to design and market new fire retardants with improved margins and environmental and sustainability profiles. The KTP has provided understanding of new fire retardant species as components in new fire retardant treatments. It is anticipated that FR product growth and development will be guided by results generated by the KTP for the next 5 years.

The academic staff involved in the KTP further developed their understanding of the changing market for fire retardant products and the costs associated with the new technological developments. In particular it has underlined the importance of the main business drivers including sustainability, meeting European Chemical Regulation and Construction Products Regulations, as well as ensuring new products meet a wide range of physical and chemical criteria.



Company Overview

For over 80 years, Arch Timber Protection has been specialising in the formulation, supply and application of industrially applied timber treatment products, wood preservatives and fire retardants, on solid timber and engineered wood product e.g. laminates and particle boards.



This KTP has provided the best academic-industry collaborative project we have experienced. The structure, process, and support of KTP have facilitated and managed all partners' interests throughout the project to the significant benefit of the associate, university and company.



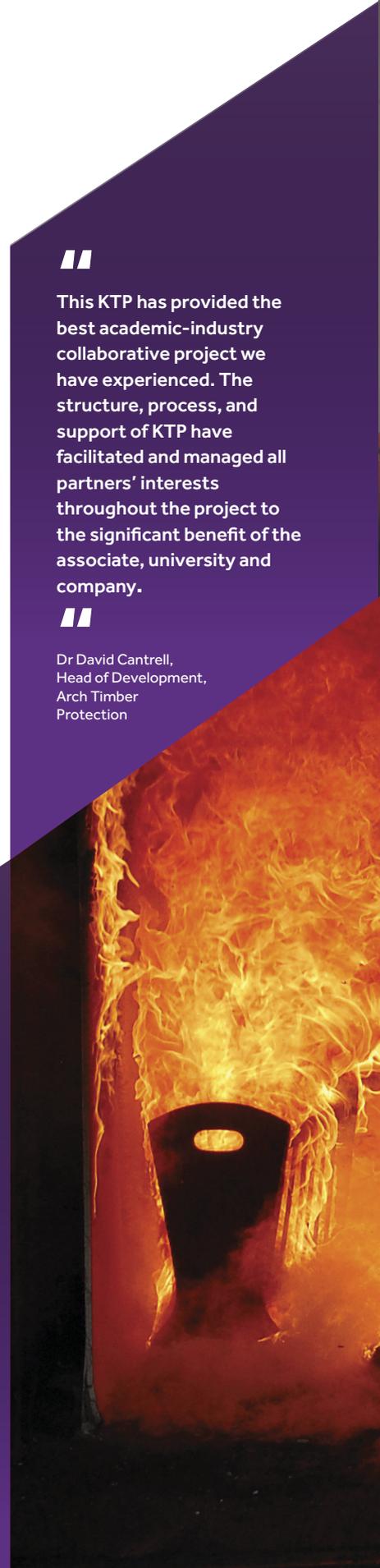
Dr David Cantrell,
Head of Development,
Arch Timber
Protection



KTP provides the best mechanism for collaboration between industry and academia. It is structured to allow for adventure in research while minimising the risk of an unsuccessful outcome.



Professor T Richard Hull,
Professor of Chemistry and Fire Science,
Centre for Fire and Hazards Science, UCLan





BUSINESS INSIGHT 3

Capture, analysis and visualisation of multiple data streams from multiple devices.

Challenge

Utilising research expertise from Edge Hill's Centre for Data Analysis and Representation this 24 month KTP was designed to develop a holistic software framework that integrates multiple data capture devices, reporting and analysing data from a variety of sources.



Solution

The project needs to develop a framework that captures and efficiency visualises high volumes of data from multiple sources and includes standardised protocols for device integration. The main technical output from the KTP is the implementation of the web-based framework including the data visualisation tools and device management functionality.

By employing innovative approaches to compile, analyse and represent the received data, meaningful intelligence can be presented back to customers and users to inform decision making and planning. The partnership team will work closely with Bi3's suppliers and customers to capture and understand requirements, continually refining the system using a rapid application development approach.

Benefits

For Bi3, this project opens significant new revenue generating opportunities. Bi3 will be able to offer bespoke solutions to their customers, providing accurate intelligence and customer insights. The KTP will also strengthen Bi3's relationships with suppliers by developing the middleware to support new devices released to the market. The knowledge transferred will build software development capacity in house, embed a project culture and result in an up-skilling of staff across the organisation.

The benefits for Edge Hill are in the output of publications and impact case studies from the research. The Centre for Data Analysis and Representation at the University is involved in a number of related research projects, particularly in managing large, real-time data sets.

For the Associate, this KTP takes place in a high-tempo, rewarding commercial environment where they will experience agile software development using market-leading technology. They will experience working with stakeholders of both a technical and non-technical background, including suppliers, customers, academics, engineers and business development professionals.

Identify Marketing Effectiveness

of in-store marketing and product placements through links product sales

Identify Customer Demographics

such as gender, age and ethnicity to improve, improve and optimize in-store marketing

Manage Queues

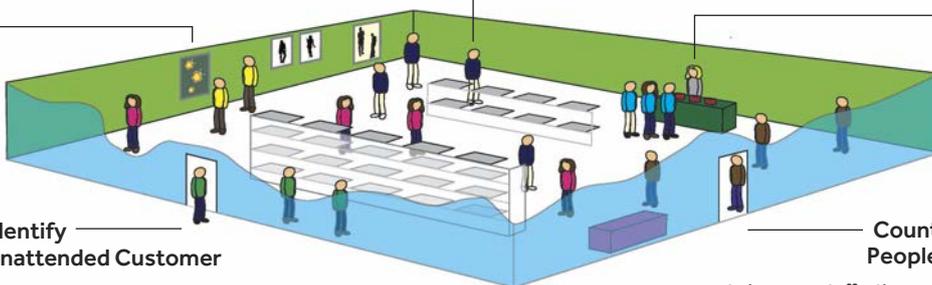
to enhance the customer experience by reducing waiting times walk-offs

Identify Unattended Customer

to improve customer services and increase sales conversations rates

Count People

to improve staff ratios and increase sales conversion rates



Edge Hill University



Company Overview

Bi3 supply security and customer intelligence solutions based on the latest technology available in video analytics, people counting, facial recognition, access control devices, queue management, facial marketing, digital and network storage.



The KTP will give us an opportunity to really develop our existing image monitoring and reporting software and further build internal capacity in this area. We're looking forward to a successful partnership with CeDAR and the University.



Glen Higson,
Managing Director,
Bi3



CREATE CONSTRUCTION

To develop and embed a quality management system to address corporate responsibility.

Challenge

Create Construction sought to develop and implement a quality management system to address the corporate social responsibility aspects of the business. This 24 month KTP was initiated to combine Create's competitive ability to offer the market quality built environment solutions, with Salford's experience in identifying elements of the social and sustainability agenda that will add value to the company's sustainable performance levels.

Solution

The KTP enabled Create to develop unique selling points and the ability to provide differential service to its Clients. Whilst delivering the construction project; the module products and outcomes of the KTP allowed Create to deliver projects tailor-made to specific Clients and provide value added feature services.

Benefits

The KTP has successfully instilled governance, environment and community accountability in the mind-set and practice of the company.

There has been a positive impact on supply chain interaction as the KTP has provided the platform to understand, learn and increase collaboration between the company and its supply chain. The company won the Business Innovation award at the NW Construction Industry Annual Awards; and were finalists in the National Constructing Excellence Awards - Innovation category.

The KTP has raised the School's research profile, demonstrating how academic research can be transferred into industry.

As a result of the work completed on the KTP, the Associate has been awarded his PhD and regularly provides guest lectures to Master Degree students; with the outputs of the KTP now incorporated into teaching materials (e.g. case studies) in various BSc and MSc programmes within the school. Following the completion of the KTP the Associate has taken on the role at Create Construction as Environmental Manager.



create construction

Company Overview

Create Construction, based in Blackpool, provides a specialist construction service to a UK wide client base. The company's unique turnkey service provides clients with a one-stop shop covering all aspects of design and build, construction and interiors.



Leading companies are becoming more and more socially aware. Many of us opt to buy fair trade, ethically sourced or organic products. Why isn't the construction industry following suit? We at Create want to take a leading step to ensure that we are responsible for what we build; we owe it to our clients and the community.



Gill Mathison,
Director of
Create
Construction



CARLISLE INDEPENDENT RETAILERS

Working together to access the digital market place.

Challenge

In 2014 there were over £100 billion worth of sales in UK retail via digital channels. In the same period many UK high streets were left with an increasing number of empty shops; in total 900 more shops closed than opened. Independent retailers in Carlisle understood that action needed to be taken if their success was to continue.



Solution

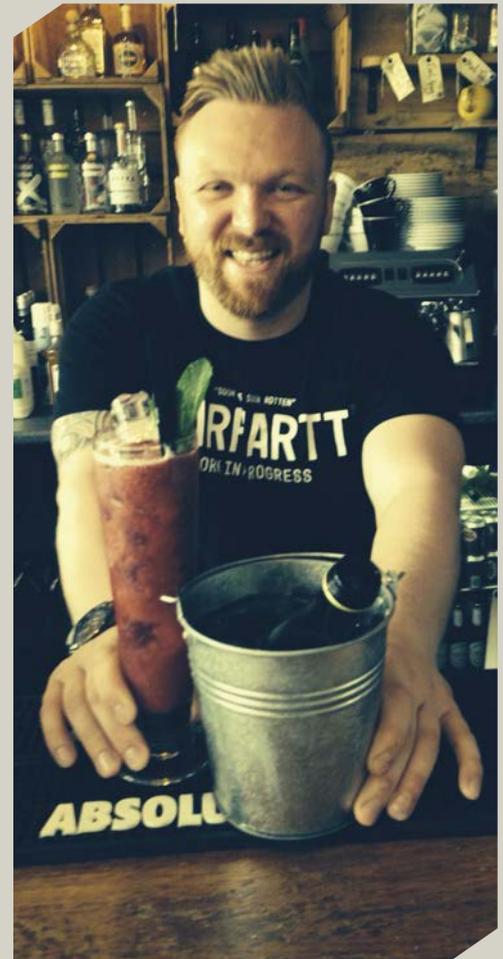
Unable to compete with ecommerce budgets of national and international retailers, independent retailers in Carlisle formed a plan to invest in digital channels collaboratively through a single portal. A KTP project in partnership with University of Cumbria, 'Your Carlisle', was developed to promote the wide and varied offer of shops and eating establishments in the city through digital channels.

Benefits

The independent retailer site includes an eclectic mix of businesses providing live music, arts and music venues, fair trade crafts and specialist shops such as S4 providing skateboard kit through to the traditional high street clothing, butchers, and fruit and veg shops.

Bringing together independent businesses has provided Carlisle city centre with a stronger retail portfolio. Shoppers now know where they can go to buy unique high quality products, backed by a local friendly service. They also have access to a range of incentives and promotional offers which encourage them to visit the town more frequently and spend more in their local and independent shops.

Many businesses now have an online presence, and have developed enhanced skills with a better understanding of the digital market place. Opening up this additional sales channel has resulted in increased market exposure for the retailers, with a forecast sales increase of 15% for most businesses.





“
The KTP project has enabled many retailers who had not looked at digital possibilities to get started and build useful connections between their business and potential customers.
”

Steve Matthews from Books Cumbria

DYER ENVIRONMENTAL CONTROLS

Embed process to enable new product development.

Challenge

Dyer Environmental Controls were lacking expertise to move the company from simply 'supply and installation' to incorporate the development of innovative products and systems, specifically relating to the integration of design development tools and procedures.

Solution

Over a 2 year KTP, the development of NPD capacity enabled Dyer to design and develop both bespoke and standard solutions and bring their own new products to market rather than rely on third party suppliers.

The product was developed through a number of tasks which was to firstly, identify the product requirements and to develop and Strategic product development plan. The Associate then formalised the NPD process, embedding resources and sourcing strategy.

Benefits

From the KTP project the "SOLIS" product was developed and successfully launched. This resulted in a £500,000 investment into the company from a German manufacturing company for the manufacturing rights.

Dyer now has the knowledge, experience and facilities to conduct full product tests, and to analyse products from suppliers to ensure that the product meets not only the company requirements but that of their customers. This is a completely new capability for the company which in turn gives a new competitive edge and understanding of their products and how they perform with confidence.

The company has gained recognition as an innovative company developing new products and solutions, which led to the significant investment from the world's leading manufacturer in passive smoke and natural ventilation products.

The KTP has given the Associate the opportunity to gain understanding of the principles of NPD Process and the development of an NPD suiting to the company.



The exchange of knowledge has been invaluable for providing the Institution with real industrial and commercial intelligence and experience of the difficulties SMEs are currently facing. This will allow us as a University, to better align our portfolio of services we offer to business.



Nigel Mellors,
Pro Vice Chancellor of
Research and Enterprise,
University of Salford



Environmental
Controls Ltd

Company Overview

Dyer Environmental Controls is a privately owned company based in Stockport, Cheshire, experienced in Passive Natural and Smoke Ventilation Systems. Products range from manual remote window opening systems to electrical motors and control systems to power-open vents and doors.



Dyer is a true advocate of the University and continues to promote the work that we undertake.



Jon Crossley, Managing Director Dyer Environmental Controls



FAIRBANKS

Analysing and visualising large data sets to guide analysts through investigation best practice.

Challenge

Capturing expertise from Edge Hill's Centre for Data Analysis and Representation, this project was designed to improve efficiencies within the workflow of Fairbanks' analysts. Although Fairbanks have systems to evolve their own data accuracy, the business growth presents key challenges in being able to efficiently analyse and visualise the data itself.

Solution

Using innovative approaches to utilising and presenting data to both users and management, work flows are able to be streamlined and significant efficiencies realised. The key technical challenges were in the system analysis and the data model, capture procedures and the analysis of workplace practices to determine the most effective models for storing, representing and processing data.

The major technical output was the design and implementation of the user interface. This stage was critical and required a great deal of innovation in how the data in the system was visualised for different user groups.

Benefits

For Fairbanks, the primary benefit is in the workload optimisation of the analysts. Improved efficiencies in discrepancy investigations, through more accurate and consistent diagnostics, has led to a significant amount of existing resource being able to be reallocated to work with new customers. Fairbanks have seen significant growth and acquisitions of new customers in recent years and this project will enable that trend to continue by achieving greater economies of scale.

The benefit to the University in this project is in the output of publications from findings of the research. These findings constitute impact case studies and Edge Hill University are currently undertaking a number of research projects in the area of data analysis and representation, handling large, real-time data sets.

For the Associate, they have been given the opportunity to work in a demanding, yet rewarding, commercial environment. They have experienced software development in a rigorous and high-tempo environment, using market-leading technology.



Company Overview

Fairbanks is the global leader in providing independent specialist wetstock monitoring and management services to the petrol retail industry.

Fairbanks offers a variety of wetstock services to make running a forecourt easier and more profitable.

Partnering with the academic team gave us an opportunity to greatly improve the meaningfulness of the data our analysts receive. We knew the value of undertaking the project from the outset, but the anticipated benefits of the KTP are being realised much sooner than expected.

Steve Jones,
Fairbanks' Managing Director



FRESHWATER BIOLOGICAL ASSOCIATION

To create, implement and exploit a tool for collating freshwater biological records.



Challenge

The Freshwater Biological Association (FBA) is at the forefront of hosting complex, spatially-related data, which conforms to the EU Inspire Directive. The aim of the project was to enhance the FBA's data exploration tools and create data management capabilities that could be offered as a service from which innovative revenue streams could be generated.



Company Overview

The Freshwater Biological Association (FBA) is a registered charity that promotes the study and application of freshwater biology. It is the country's foremost provider of freshwater information through membership services, research support and information dissemination. A key activity is managing digital environmental datasets for Defra, Environment Agency and NGOs.

Solution

There were 5 key stages to the solution including the development of GIS visualisation systems for use with online recording tools, creation of a generic solution pack for GIS mapping, development of an automated alerts and triggers system, development of market planning and a promotional plan.

The FBA plans to commercially exploit the system through a suite of apps, one external stakeholder was immediately interested in purchasing relevant training from the FBA.

Benefits

The KTP has provided the FBA with new technology, primarily GIS and mobile app based. This has enhanced the FBA's reputation with other NGO's and will enable it to become a leading environmental organisation that runs citizen science projects with tools accessible to volunteers.

The FBA strives to ensure that freshwater issues are high in national and international agendas, especially with regard to climate change and delivering key EU directives. Enhancing access to data and the ability to explore its patterns is one of the most effective tools for achieving this.

The project led to a rethinking and change in the FBA's IT policy which influenced how they interact with members and the freshwater community online. This led to the FBA embracing social media which is being used to attract new members and engage existing members.



The FBA's business has been significantly changed by the KTP, with new marketing concepts and connections being implemented and exploring the world of mobile apps as a way to sell and distribute FBA produced content and engage new members.



Dr Mike Haft, FBA



JBA TRUST

Improving statistical models for flood risk assessment.



Challenge

The aim of this 24-month KTP is to improve JBA's models of flood risk around rivers in the UK, and to demonstrate how data on extreme rainfall can be included more effectively in their models.

This will also improve the understanding of the risk of "surface water" flooding caused by overland flow, typically associated with intense rain storms, which often affects built up areas. Some of the UK's worst floods in recent years have been of this type. The results will be important in supporting JBA's work on risk assessment for public and private clients, as well as helping to deliver scientific advances.

Solution

Advanced joint probability methods were developed to link rainfall and river flow data, including new, more efficient methodology that is robust to missing data.

The result of the KTP will be methods to develop spatially realistic flood event scenarios enabling JBA to continue to provide cutting edge products to their clients and ultimately for wider public benefits.

Benefits

The KTP project provides a focus for a number of projects within the company where advanced joint probability analysis is needed. This is helping JBA to integrate cutting-edge research on spatial extreme flood hazards into a range of activities across sectors in engineering, civil contingencies and insurance risk analysis, and will also support the company's research foundation in promoting new risk analysis methods more widely.

This collaboration between JBA and Lancaster University's Mathematics and Statistics department has developed strong research links between the two organisations, encouraging dialogue between researchers, and has also resulted in the development of an MSc project that looks into the spatial and temporal dependence of rainfall events.

For the Associate, Dr Ross Towe, the KTP has been the perfect start to his career giving the opportunity to continue to engage with academics but also gain a deeper understanding of the challenges faced by companies such as JBA.



Company Overview

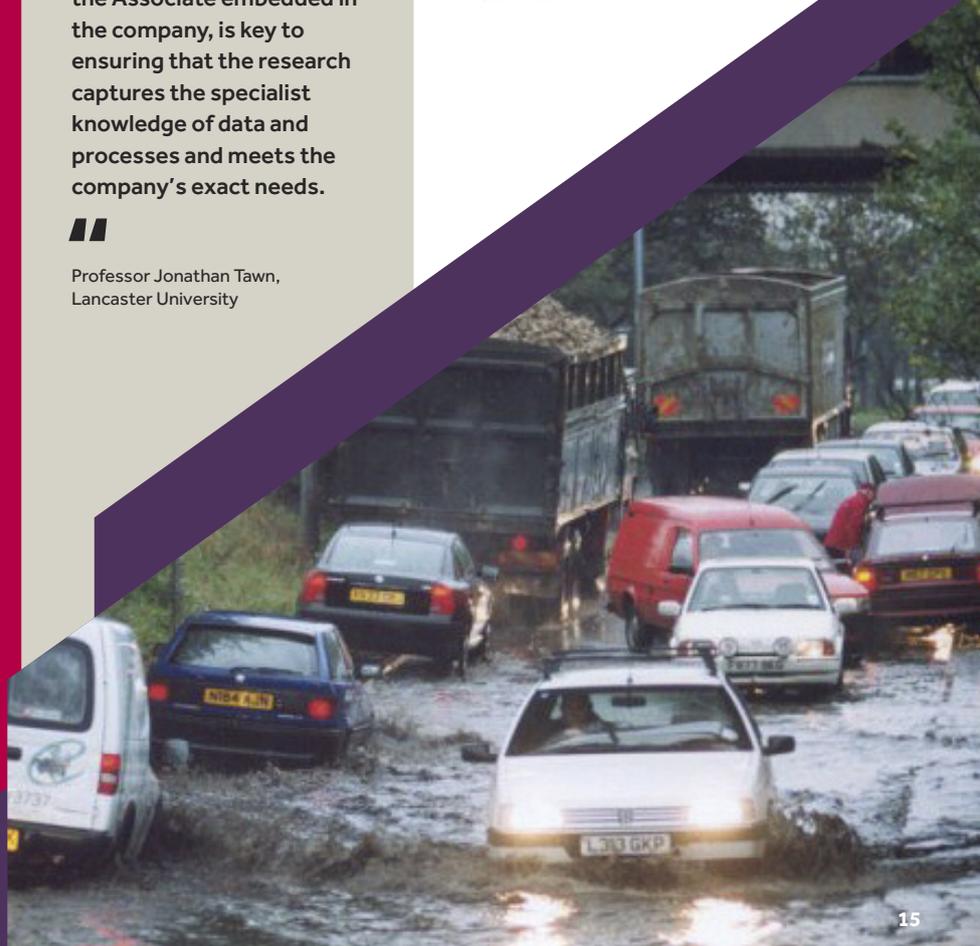
JBA is a specialist environmental risk assessment and engineering business, undertaking work to enhance the built and natural environment and providing a range of inter-disciplinary services, to clients in the government, private, transport and utility sectors.

“ We are delighted to have the support of KTP in this exciting project that is enabling us to keep pushing ahead with important improvements in flood risk analysis, and maintaining our close ties with Lancaster researchers. ”

Professor Rob Lamb,
JBA Trust

“ The KTP project is really opening up exciting new statistical research opportunities with the potential for these to have substantial impact. The close collaboration with JBA, with the Associate embedded in the company, is key to ensuring that the research captures the specialist knowledge of data and processes and meets the company's exact needs. ”

Professor Jonathan Tawn,
Lancaster University



PPA GROUP

Developing composite repair capabilities.

Challenge

PPA was firmly established in the market place for the manufacture, supply and repair of non-metallic components for a wide range of aero-structures using 'traditional' materials such as wood or acrylic.

However, with the emergence of composite materials in advanced manufacturing industries, PPA identified in order to strategically position themselves to take advantage of the shift in industry, PPA needed to develop expertise in composite materials and embark on the first-steps in transformation into an advanced manufacturing organisation.

Solution

PPA sought expertise from Dr Arthur Wilkinson, Senior Lecturer in Polymer and Composites Processing in The School of Materials at The University of Manchester. Together with KTP Associate Asier Agirregomezkorta, the partnership undertook a successful 24 month Knowledge Transfer Partnership to develop in-house knowledge and expertise in methodologies to identify composite defects, techniques to repair damage to composite components and the skills and capabilities to manufacture composite components.



Benefits

The development of technical abilities through the KTP project enabled the company to demonstrate a new level of expertise in composite repair and to position itself as a Composite Repair Centre. The project formed part of a process of development that has significantly raised the profile of the company with its existing network of customers in the aerospace sector. It also brought the company to the attention of potential new customers in the marine and automotive sectors.

The company has recently invested £100,000 in a composite facility at its headquarters in North Wales, and as a direct result of the KTP, the company have been asked to manufacture new components for a prestigious car manufacturer and anticipates achieving additional sales of over £600,000 within three years.



The involvement in this KTP has generated new industrially relevant material for a number of undergraduate courses in The School of Materials which students respond well to and the experience gained on composite repair has fed directly into my research.



Arthur Wilkinson



Company Overview

PPA Group's core business activity is the manufacture and repair and overhaul of non-metallic components and assemblies for the aerospace, automotive and marine industries.



We found the project to be a great way to improve processes, enhance skills and provide the company with a new competitive edge in the market place.



Peter Gunson

PROZONE

Extending the boundaries of performance analysis in football.

Challenge

Prozone are the market leader in the provision of performance analysis services in football and strive to innovate and differentiate from competitors. They embarked on a 2 year KTP with the Football Exchange and the School of Computing and Mathematical Sciences at Liverpool John Moores University (LJMU) to improve performance analysis within the areas of match analysis, player recruitment and asset management.



Solution

This KTP resulted in the adoption and integration of more powerful statistical methods in the company's consultancy and training offerings, through the use of multivariate statistics analysis to generate enhanced and more complex performance insights from the huge amounts of data already available from matches worldwide, delivering evolution of match analysis insights; enhanced player performance profiling; and improved asset management solutions



Benefits

The KTP achieved over and above the expectations for the project. Amongst other benefits, Prozone have acquired leading edge expertise in the interpretation and application of meaningful patterns in highly complex and novel datasets. The knowledge and capability developed from the integration of multivariate statistics has markedly enhanced the company's analytical offerings and its capacity to deliver customised predictive analytics to clients

LJMU's benefits include effective interdisciplinary research between Mathematics and Sports Science, conference publications and publications on the design and application of the analytical tools in Sports Science journals.

The partnership between LJMU and Prozone has widened further than the KTP project, to include education services on performance analysis in professional sport.



Company Overview

Prozone Sports Limited has been pioneering performance analysis for 19 years and have worked with many of the leading clubs and organisations in sport to deliver the world's leading performance analysis services.



The KTP between Liverpool John Moores University (Football Exchange) and Prozone has yielded fantastic results and will have a significant long term effect on the Prozone business, in particular underpinning a major strategic change and enabling valuable new services for our clients. The KTP programme has suited the business needs very well and Prozone will be considering future KTPs on other projects.



Paul Neilson,
Company Supervisor,
Prozone

POLYPHOTONIX

See the light.

Challenge

Polyphotonix are a process innovator in the field of OLED (organic light emitting diode) technology, and have pioneered new and low cost manufacturing processes to enable the mass production of OLEDs for a variety of applications. Through collaboration with research partners and market analysis, they identified a significant opportunity to use OLEDs as a low cost, home based, primary care intervention for the treatment of Diabetic Retinopathy (DR) and Age-related Macular Degeneration (AMD).

Solution

The aim of the project was to develop, introduce and embed biological and cellular testing capabilities and understanding in the company. The embedded knowledge would permit effective engagement with clinicians, patient groups and future clinical trial partners. The Associate's aim was to develop their capabilities in biological and cellular testing by creating a bespoke laboratory to deliver the project objectives and to develop a pathway for a medical device from concept to commercialisation.

The project was an ambitious twelve month programme and it is testimony to the high calibre of the Associate, Celia Murray-Dunning, and the project team, that all objectives were achieved despite difficult challenges that manifested during the project. Establishing a bespoke laboratory, designing the testing protocol and then defining the hardware (including OLED plates) led to a micro-management strategy and successful introduction of countermeasures that assured the project objectives.

Benefits

The KTP has allowed Polyphotonix to branch out into technologies completely new to the company in the field of Phototherapy for eye disease, while simultaneously developing a pathway to bring a new medical device from concept to commercialisation. The development, implementation and embedding of biological and cellular testing capabilities within the company was a further benefit.

For the Associate, the KTP was a chance to build project management skills enabling delivery of milestones over a very short period together with knowledge of regulatory affairs related to medical devices. The KTP allowed the Associate to take a medical device from concept to commercialisation, while developing SOPs for industry use in product development; involving laboratory requirements, experimental procedures and the necessary cellular and molecular biological expertise to interpret the results.

The KTP enabled the University to develop valuable expertise in the potential role of OLED technologies in medical devices. As a result it has been used it as a springboard for further collaborative grants including a 2nd KTP, a KTN CASE studentship and a clinical trial.

POLYPHOTONIX

Company Overview

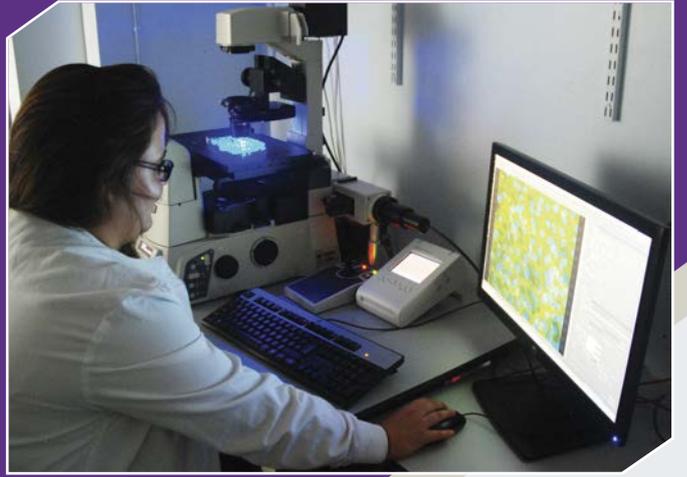
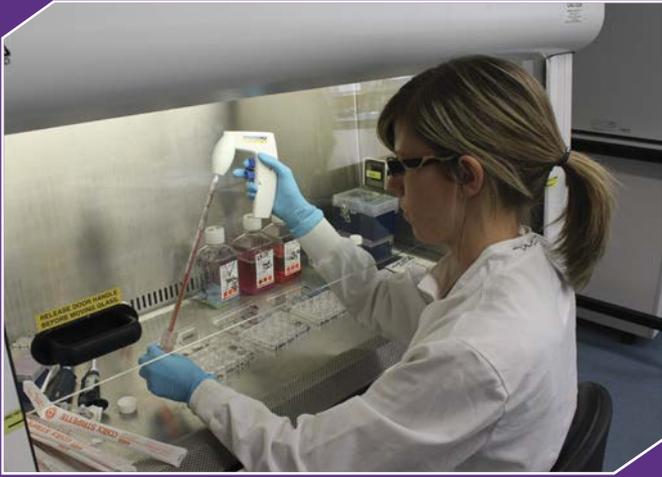
Polyphotonix is at the forefront of Organic Light Emitting Diode (OLED) technology, and is developing platform technologies that will permit flexible and conformable OLED's to be manufactured inexpensively. This OLED platform technology will find many applications within key business development areas, including automotive, medical, and architectural lighting applications.

“
The work that the University has done has been crucial for our first product release.
”

Richard Kirk,
CEO Polyphotonix Limited

“
Working with a company allows you to demonstrate how your knowledge will be of benefit and to have real impact and that is hugely motivating.
”

Professor Rachel Williams,
University of Liverpool



RISKTEC

New technical training business - safety and risk management for professional engineers in high-risk industries.

Challenge

Risktec had seen an increasing number of requests from clients to provide training in safety and risk management topics.

Through the KTP project, the company aimed to move into this new market by creating a new training arm to develop and deliver specialist training courses in safety and risk assessment targeting the oil, gas, railway, nuclear and defence industries. The KTP was based on a joint vision of developing skilled risk and safety management professionals to prevent major industrial accidents.



Company Overview

Risktec Solutions Ltd is a specialist safety and risk management consulting company. The company assists clients in major hazard industries and commercial sectors to manage safety and business risk.

Solution

A two year KTP was established to diversify Risktec's business by creating a new training arm. Initially the concept was to develop a menu of training modules that clients could select from but, as the project progressed, Risktec realised that the market would be better served by offering structured programmes leading to post-graduate qualifications. This led to the development of the Risk and Safety Management programme which offers qualifications to MSc. The programme is delivered by Risktec's consultants, who are all practising risk professionals, and is accredited by LJMU.

Benefits

The project has delivered a number of sustainable benefits and impacts. The KTP exceeded expectations and went on to win "Best KTP in the North West" at National KTP Awards.

LJMU and Risktec have jointly managed the multi-year postgraduate qualification programmes, generating profitable fees and income for both organisations. Over 1000 clients have undertaken these courses so far, and the number is rapidly growing. Joint funding has led to a full-time Risktec industrial readership post at LJMU in risk and safety management.

The most significant long term benefit however is an increased level of safety in high hazard industries, benefiting employers and employees in these industries but also the rest of the population and the global environment.

As a direct result of this KTP, Risktec is now the only commercial provider of a university-validated MSc in the fast growing field of risk and safety management for high-hazard industries which is jointly delivered with LJMU lecturers.

Dr Alan Wall, LJMU Academic Supervisor for Risktec



REACT

Development and commercialisation of a unique radiation analysis concept.

Challenge

Nuclear clean-up and decommissioning firm REACT Engineering Ltd entered a 2 year KTP with Lancaster University's Engineering department to help commercialise its unique radiation analysis software, N-Visage™, which addresses the challenge of radiological characterisation of redundant or operational nuclear plants.



Solution

The KTP aimed to develop N-Visage™ by adding new approaches to radioactivity depth profiling, while packaging N-Visage™ as a standalone software programme suitable for licensing. The project covered software sales and support, as well as opening up the highly specialised radioactive contamination depth mapping market, with potential annual revenue for REACT of up to £3m.

It has been excellent to observe a graduate use what they have learned at university and implement the results for their benefit and for the benefit of taking the company forward to tangible emerging opportunities for the business.

Professor Malcolm Joyce,
Head of Department, Lancaster University

Benefits

The KTP has resulted in significant advances in the N-Visage™ software, including greater efficiencies, extra features and integration with a gamma imager, a stand-alone sensor package that collects data for radiation mapping.

The KTP has enhanced the company's capabilities and provides a new service for customers and as a result of the projects success, a spinout business, Createc Ltd. was launched to build opportunities in the global market for REACT's N-Visage™ analysis product.

The Associate was taken from a complementary area of research activity and placed at the forefront of a commercial opportunity for a local, sector-leading small business. He gained valuable experience of implementing research into a real business opportunity and working in an innovative Engineering company, thereby improving his career prospects. He also secured a job offer with the company following completion of the KTP.



REACT

ENGINEERING LIMITED

Company Overview

REACT Engineering is a leader in developing innovative and robust engineering and management solutions to address nuclear decommissioning, waste management and asset care challenges faced by the UK nuclear industry.

The inclusion of the gamma imager significantly increases the commercial opportunities, including exports and a straightforward interface with the imager has also been developed, which is a major step forward in the commercialisation of the N-Visage technology.

Dr Matt Mellor,
Director, Createc



STOKERS LTD

Implementing an omni-channel retail strategy to increase turnover, profitability and operational improvements to further increase performance.

Challenge

Stokers Limited is a fourth generation family run business that sells quality furniture ranging through sofas, dining furniture, beds, carpets and accessories. Although Stokers has significant expertise in successful single channel retailing, the primary aim of this project was to increase sales by improving customer experience and business performance through the development and implementation of an omni-channel retail strategy.



Benefits

The academic team has extensive knowledge and expertise in strategic analysis, market research, customer satisfaction and digital marketing. The team also has experience of action research methodologies for business improvement in a retail context. Within 10 months of the partnership, the company saw significant gains in turnover for Garden Furniture and a high quality bed and mattress brand.

As a result of the KTP, Stokers website has undergone extensive monitoring with Google analytics and thorough audits which have led to technical and usability improvements that will see the site gain rankings in search engines and attract more customers.

Digital Marketing Campaigns implemented during the project through Google Adwords and Google Shopping have contributed to incredible increases of up to 300% in turnover for certain products and brands.

Solution

A 2-year KTP was developed in collaboration with UCLan's Business School. The KTP has enabled Stokers to develop new capability and understanding of how omni-channel retailing can transform its business.

The project required a carefully considered strategy and implementation plan that fully understands and supports the creation of an interdependent relationship between stores, web and mobile technology with a strong focus on improving customer experience in order to grow the business.



By working together with UCLan our KTP has enabled us to deliver a key strategy into our organisation. UCLan's technical expertise combined with our industry knowledge has meant we have created something far better than I ever imagined and we are now setup for the future. I would recommend a KTP to any business!



Chris Leech,
Commercial Director,
Stokers Limited



The KTP with Stokers is an excellent example of how Universities can work with small businesses for mutual benefit. The project is delivering innovative ideas and transforming the focus of operations at Stokers Ltd.



Dharma Kovvuri,
KTP Academic Lead and Dean of
Lancashire Business School,
UCLan



TESCO

Improving dairy calf welfare and lifetime productivity.

Challenge

Tesco, a leading milk retailer in the UK, is supplied by over 700 dairy farmers who, as a collective, are known as the Tesco Sustainable Dairy Group (TSDG). There is a clear commitment by Tesco to increase the productivity and enhance the welfare of the dairy calves from which its milk is sourced.

By utilising the facilities in place at Wood Park Farm at the University of Liverpool, Tesco worked with Dr Caroline Argo of the Institute of Ageing & Chronic Disease and Gemma Curtis, a graduate KTP Associate, in a 3-year programme to address the challenge of developing novel rearing strategies to improve the health and welfare of dairy calves, growing and adult cows, while achieving improved productivity and corresponding reductions to milk purchase costs.

Solution

During the KTP the Associate compared the performance of Holstein dairy calves reared conventionally with restricted access to milk replacer (MR) to those granted ad libitum access during the pre-weaning period. Calf performance and health was monitored from birth to the time of first breeding and variables that were measured included: growth; body condition; body composition (using CT scanning); udder development; food and milk intake, aspects of nutrient metabolism, and other measures of health status.

The benefits of ad libitum access to MR feeding were immediately clear. Calves reared in line with this new strategy gained approximately 20% of birth weight during the first 2 weeks of life, whilst those reared in the conventional way failed to grow at all during this period.

The results of the KTP programme have been disseminated to the large cohort of dairy farmers who form Tesco's supply chain – the Tesco Sustainable Dairy Group (TSDG) – through a series of workshops and via Tesco's online Producer Network, emphasising that the long-term health benefits for the calves also have a clear long-term cost benefit.

Benefits

The company expects future cost benefits due to increased productivity of dairy cows combined with positive publicity associated with improving the health and welfare of dairy calves. The KTP has also created the opportunity to share best practise with members of TSDG and to introduce improvements leading to potential changes to financial performance which will be a key driver in delivering change throughout the supply-base.

Participating in the project has allowed the Associate, Gemma Curtis, to concurrently undertake doctoral research, leading to a PhD. The personal development aspect of the KTP allowed her to complete a Diploma in Management, an APMP qualification in Project Management and a Risk Management qualification, which she would not have been able to achieve without the project.

For the academic partner, this research has illustrated that allowing unrestricted access to milk replacer during the early stages of life means calves can grow at a greater rate and therefore be bred earlier than calves allowed restricted volumes of MR.



Company Overview

Tesco is a major international retailer with subsidiaries in mainland Europe, Asia and the USA. Approximately 62% of group personnel are in the UK which generates 68% of global turnover. Whilst non-food sales are growing strongly, the core UK business is in food.

Tesco is the leading liquid milk retailer in the UK and has established the Tesco Sustainable Dairy Group (TSDG), currently comprising 786 independent dairy farms, to provide long term stability to its milk supplies.



For Tesco, the results of the partnership offer us the opportunity to: share best practice with our TSDG members; drive improvements through the supply chain and; understand an area which has previously seen little research and in-depth focus.



Graham Wilkinson,
Agriculture manager – Dairy Category,
Tesco plc



THE VILLAGE BAKERY GROUP

Using technical innovation to drive growth.



Manchester Metropolitan University

Challenge

During the 10 years the Village Bakery and MMU's Food Research Centre have been collaborating via KTP, the Group has grown from a base of one business to three, with turnover increasing from £4m to nearly £40m.

Early on, Managing Director, Robin Jones, identified the value of teaming academic experts and skilled graduates with sector leading manufacturing facilities. Utilising MMU's academic expertise and specialist test facilities, he has used the KTP programme on three occasions to support the strategic growth of The Village Bakery Group.

Solution

The first KTP enabled a move into retail sales, by setting up quality systems required by national retailers; the second provided expertise in the manufacture of gluten-free bakery products, to support the launch of The Village Bakery (Nutrition); and the third, enabled significant sales in top grocery multiples via The Village Bakery (Wrexham), via sustainable formulation and processing innovations.

Benefits

By embracing KTP and MMU expertise, the positive impact on performance via quality improvements and new business developments has been significant. The ongoing success of the Group means that significant investment is underway, including a multi-million pound Baking Academy Innovation Centre and new bakery facility, with the intention of achieving sales of £65m and employing 200 additional staff by 2016.

1st KTP (2003-05) to set up EFSIS quality accreditation to enable growth into the retail sector

- sales turnover increased to £7 million
- improvements in systems, technology and standards secured new customers

2nd KTP (2008-10) to establish a gluten-free bakery business following a £3m investment in a dedicated gluten free manufacturing facility

- sales turnover increased by £6m and profitability by £2.1m
- first export sales achieved (12% of total sales)
- 52% share of gluten-free market achieved
- 46 new staff employed and trained

3rd KTP (2012-14) to develop a range of products for national retail sales following £4.5m investment in a state-of-the-art bakery facility

- sales of Village Bakery branded products increased by 24%
- additional sales of £3m (expected to increase to £8m within 3 years)
- profitability increased by £600k (expected to increase by £900k within 3 years)



Company Overview

The Village Bakery Group is a family owned and managed craft bakery, producing an award-winning range of bread, pies, morning goods and gluten-free products. With three modern bakeries in Wrexham, North Wales, they supply a variety of quality retailers locally, nationally and internationally as well as making their own-brand products.



TYRRELL SYSTEMS

Meeting new business opportunities from emerging technologies.

Challenge

Recognising business opportunities due to new technologies, Ged Tyrrell, Managing Director of Tyrrell Systems, was quick to draw on the know-how of an academic institution to place his business at the forefront of their sector for the foreseeable future.

During the 10 years Tyrrell Systems and MMU have collaborated via two KTPs, the company has expanded their products and services, capitalised on emerging mobile technologies and, via new marketing capabilities, has taken new products to expanded markets overseas.

Solution

The first KTP sought to develop mobile technology features in the company's new framework of enterprise building management systems, allowing monitoring and control of building systems such as lighting, heating and alarms through one handheld device; a key capability within an emerging market sector.

As a result of the increase in business activity brought about by this KTP, Tyrrell Systems embarked upon a further KTP to embed new marketing capabilities in order to gain maximum commercial benefit from the intellectual property within the business.



Working with MMU has been extremely beneficial and has ensured we have been able to stay on the front edge of the development curve...I would thoroughly endorse this scheme. As a result of the programme, we now naturally think about marketing in all our new strategies and ventures, something which never happened before the KTP.



Ged Tyrrell, Managing Director,
Tyrrell Systems

Benefits

The academic expertise at MMU and the nature of the KTP programme has pushed the company to develop new business processes and revise management practices, which in turn has enabled sustained business growth.

1st KTP (2006-10) developed an easy-to-use location-aware mobile application to offer remote control of building systems such as lighting, heating, air conditioning, fire detection and intruder alarms

- launched iPhone and iPad applications
- projected increase in sales turnover £750k and profitability by £130k (within 3 years)
- embedded new software development skills

2nd KTP (2010-2013) to develop marketing systems and processes and good marketing practice to plan and control ongoing company growth

- facilitated a shift in company thinking, whereby marketing is seen as an essential tool for business growth
- significant rise in sales export expected by 2016
- attracted a new overseas audience and built upon UK customers
- expected growth of 25% for Tyrrells Product Ltd

The relationship between Tyrrell and MMU continues, via recruitment of MMU graduates, use of MMU's Digital Innovation space by Tyrrell's software development team and company presentations and guest lectures for university students.



Manchester
Metropolitan
University



Intelligent Monitoring



Gas Suppression System



Aspirating Systems



Room Integrity Testing



Integrated Control



Building Management



Intelligent Monitoring



Complete Connectivity



Company Overview

Since 1998, Tyrrell Systems has been intelligently integrating building systems, such as fire alarms, BMS, air conditioning and lighting, at thousands of sites in the UK and abroad.

Knowledge Transfer Partnerships

Knowledge Transfer Partnerships is the leading programme of its kind in Europe, with an outstanding track record of benefitting all those who take part. Applications are accepted from prospective partners all year round via the support of regional KTP advisers and Knowledge Transfer offices within Universities and Further Education Institutions.

To find your local adviser or office go to;

www.ktponline.org.uk or **call 0300 321 4357**

Funding Partners

Knowledge Transfer Partnerships is a UK wide programme funded by Innovate UK along with 12 other public sector partners.

In partnership with



Innovate UK