

East Midlands Innovation Case Study Review: Volume 2

A report by *emda*

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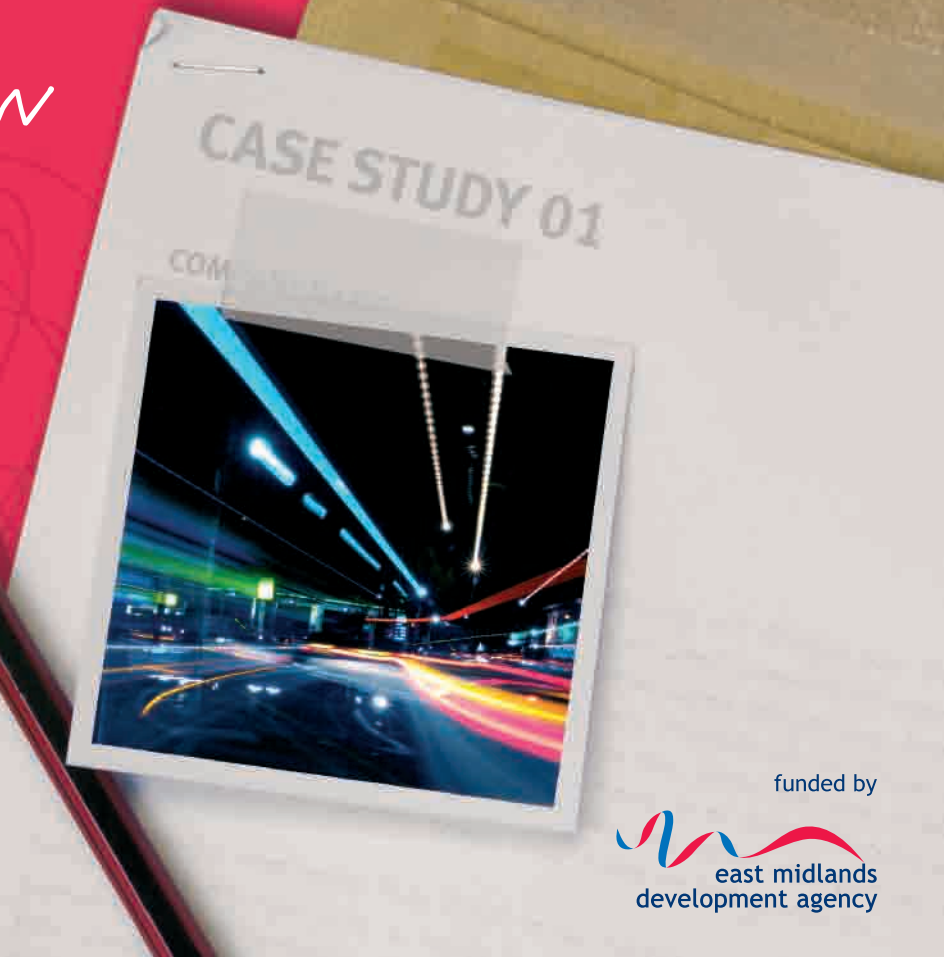
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Case study review



funded by

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Foreword

More than ever in the current economic climate, taking a fresh look at how your business is run could make all the difference. For the sake of short term survival and long term success, every businessperson needs to consider how to exploit new ideas which could improve their bottom line.

That's why the European Union (EU), and the UK Government are investing heavily in innovation. Thinking and acting smartly to protect and grow businesses is the only way to remain competitive in today's world, and for the economy to move forward.

East Midlands Development Agency (*emda*) has been guided by East Midlands Innovation to develop a range of specialist innovation support products and services for business of all sizes – from owner managed enterprises to multinational corporations. This includes advice, guidance and grants.

We're proud of our unique offer. We're helping businesses small and large to become more innovative and more responsive to changes in markets to reach their potential. Full details of what we do can be found at www.eminnovation.org.uk

I'm pleased you are taking the time to look at our collection of case studies. They show what can be achieved by focused, dedicated and determined businesspeople who have great ideas and are helped through publicly funded support.

Most of the case studies are of companies in four key sectors which are established business and research strengths of the East Midlands. We see huge potential in these sectors, but our offer supports innovation in all areas.

I wish you every success in your future investments.



Innovation overview

In a series of policy statements, the governments of the EU, including our own, have committed to boosting business performance by making economies more innovative.

The result is publicly funded support which could back your ideas for a new service, product or more efficient way of getting things done.

By thinking and acting in new ways and making full use of the help available, businesses can increase the chances of staying one step ahead of the competition. This is vital to growth, stability and survival.

Profits can be increased if businesses are prepared to invest time in thinking how small and large changes might affect their long term prospects.

Your journey to sustainable growth can begin right here, by finding out more of what we can do to support change in your business.



To find out how we can help you towards sustainable business success through innovation visit www.eminnovation.org.uk or call 0115 988 8300.



What do we offer?

The help we give to those who decide to take a new look at their business can be accessed at www.eminnovation.org.uk. The Innovation Portal is a useful first point of contact to help you become more innovative and reap the rewards that innovation can bring.

Our support is focused on the business and research strengths of the East Midlands. Our four innovation Networks (iNets) provide funding, contacts and other support to companies and universities working in:

- Healthcare and bioscience
- Sustainable construction
- Food and drink
- Transport.

If you work in the supply chain of any of these sectors, it's a good idea to get in touch with a specialist iNet adviser. For more information about the iNets, including contact details visit www.eminnovation.org.uk

For any business looking to invest in research and development with commercial potential, *emda's* Framework Programme 7 (FP7) Service gets results by securing funding for projects from the EU.

We also support exploitation of technology through the Regional Technology Framework (RTF). RTF grants help kick-start innovative projects in five key areas deemed ripe for exploitation in the East Midlands. Grants are made to businesses and university partnerships for ideas that have real market potential.

emda together with other public sector providers offers a range of other innovation support products that have been used to implement new ideas for commercial gain. You'll see examples of how regional businesses are benefitting throughout the case study review. Inspire yourself by reading on...

Knowing what to expect when you're expecting

Overview:

Babybond® Ltd Ultrasound is the UK's first ISO Quality endorsed ultrasound provider, offering a range of ethical, private pregnancy scans, including 4-dimensional scans. They are now also the UK's first company to sell private ultrasound services online, thanks to investment funding that has enabled them to develop a sophisticated web-based sales offering.

Babybond® Ltd Ultrasound was established in 1999 by husband and wife team Jan and Mike Steward. Both had a strong background in medical ultrasound and they realised an opportunity to develop a private alternative to the NHS for newly pregnant families wishing to self refer.

Built up by self-financing through a limited franchise option, the company encountered rapid growth. By 2008 six franchises had been created and a total of 24 active clinics were operating across the UK, offering different stage scans, from seven to 40 weeks of pregnancy.

In order to expand the business further, and keep ahead of the emerging competition, Babybond® Ltd Ultrasound wanted to develop their website to offer a fully automated online booking service. This would enable customers to book and pay for private scans online, letting them select a time, date and clinic that was most convenient for them – a service that is currently unavailable anywhere else in the UK.

The e-commerce software was a costly investment, which led the founders to take part in the Connect Midlands Investment Challenge. As a finalist they were able to secure private investors and obtain matched funding from the *emda* funded East Midlands High Growth Fund in order to invest £100,000 in the necessary technology.

As a result of the investment, Babybond® Ltd Ultrasound has gone live with the online e-commerce system, and reported 500 bookings within the first week of launch. A further £100,000 of investment has also been channelled into opening more direct clinics to cope with increased demand, with four already in the pipeline.

Mike Steward
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Company name:
Babybond® Ltd Ultrasound

Location:
Uppingham, Rutland

Sector:
Healthcare

What we do:
Self-pay, private pregnancy scanning

Area of innovation:
E-commerce technology



Jan Steward, Director, Babybond® Ltd

"Babybond Ltd customers now have unprecedented choice for their private scan 24/7, and our healthcare professionals who are based remotely can feel in touch with the rest of the group. This web platform enables growth without compromising the quality of our service."
Jan Steward, Director, Babybond® Ltd

A brighter future for drug discovery

Overview:

CellAura Technologies Ltd combines expertise in chemistry and biology in a unique way to detect potential new drug compounds. The method involves a sophisticated way of viewing molecules given fluorescence interacting with live cells. Investment support has enabled further research and development and helped the company bring their products closer to market.

CellAura Technologies Ltd is a spin-out company resulting from research undertaken at the University of Nottingham. The company combines expertise in the fields of synthetic chemistry and molecular pharmacology. This mixture of scientific disciplines is key to the success of CellAura Ltd's products.

By painting the surfaces of live cells with fluorescent molecules that bind to specific proteins, potential new drug compounds can be detected as the brightness changes on the cells' surfaces. CellAura's new technology works by bringing together elements of chemistry and biology to design luminous labelling molecules that work on live cells. Similar attempts have been unsuccessful.

Using fluorescent labels, high quality data can be quickly and cleanly obtained from experiments. This reduces the time taken to measure samples and avoids the environmental impact of radioactive waste disposal. It also enables live cell-based tests to be introduced at an earlier stage of the drug development process, to help eliminate potential toxicity and other side effects as early as possible. This can save time and money to make early stage drug development significantly more efficient.

Various investment products funded or delivered by *emda* have helped the company develop and market its unique technology, including the Lachesis Fund, the Catapult Growth Fund and East Midlands Early Growth Fund. This allowed for increased speed, reduced costs and greater

accuracy, whilst helping the company build a superior safety profile relative to existing technology in the field.

An *emda* funded Grant for Research and Development has helped the company gain further insight into the potential of its products and to carry out research to understand the science behind them in more detail. The findings from this research will provide data to validate the product range and help to add value in the next phase – approaching potential customers and selling the concept into the marketplace.

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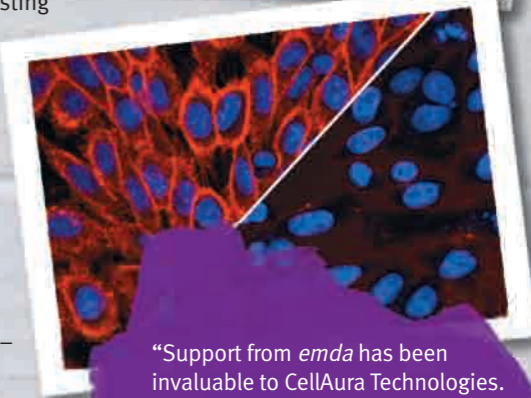
Company name:
CellAura Technologies Ltd

Location:
BioCity, Nottingham

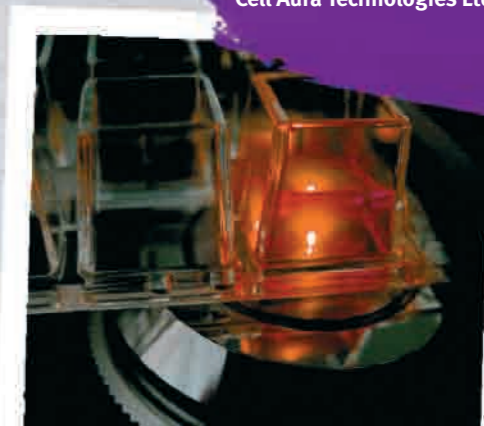
Sector:
Healthcare

What we do:
Produce innovative screening products for the drug discovery industry

Area of innovation:
Process/technology



"Support from *emda* has been invaluable to CellAura Technologies. *emda* realises the nature of new discoveries and that they don't always go as planned. Through Grant for Research and Development we have encountered real flexibility in terms of both scope and timescale which has helped us to shape the future of our business."
Dai Hayward, Chief Executive Officer, Cell Aura Technologies Ltd



The way to the heart is through the legs

Overview:

Dialog Devices Ltd is a spin-out company from Loughborough University that has developed the first fully automated, non-invasive technology for the detection of poor circulation in the limbs – known as peripheral arterial disease. The device, called Padd (Peripheral arterial disease device), assesses blood circulation in less than five minutes, removes the need for highly skilled operators and replaces costly ultrasound. Dialog Devices approached the Healthcare and Bioscience iNet to help turn a prototype into a successful product.

Dialog Devices Ltd, a multi-award winning Loughborough company, has developed a unique device called Padd – that can help prevent heart attacks and strokes by identifying reduced blood flow through the legs. The company also provides opto-electronic technology and expertise to early-stage biomedical device companies.

Recognising the current method of detecting peripheral arterial disease – poor circulation in the limbs – is neither straightforward nor cheap, Dialog Devices spotted an opportunity to use its expertise in opto-electronics to invent a quick, easy and reliable device to measure circulation. In 2004 it obtained funding to develop the technology and turn its idea into a new product called Padd. Padd assesses blood circulation in less than five minutes, removes the need for highly skilled operatives and replaces costly ultrasound. It is such a big step forward that it can be used in primary care, making it easier for patients to be tested and quicker for them to be treated. After the technology was developed, Dialog Devices sought further funding to help it take the product to market. It also needed to expand its team and work out a winning strategy to penetrate the healthcare market. In addition, help was needed to navigate the complex regulatory and testing procedures.

After exploring these needs and the options for addressing them, the Healthcare and Bioscience iNet advised the company on suitable training courses and a successful approach to selling to the NHS. The iNet also awarded an Innovation Support Grant (ISG) to help the company explain

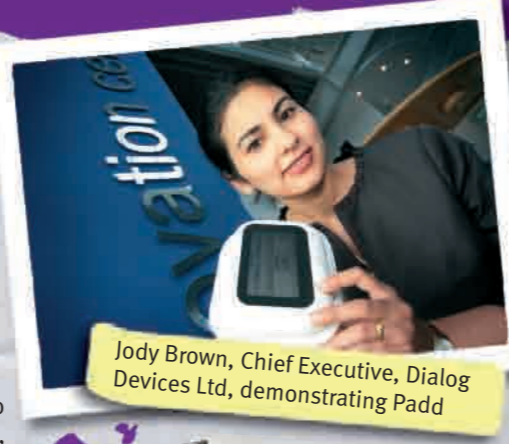
Padd and its benefits to the NHS. This involved preparing the company to address the NHS Alliance Conference. Not only did this raise the company's profile, it was a crucial element in the successful bid for the next round of funding. With further help from the iNet and UK Trade & Investment, Dialog Devices has also exhibited at Medica 2008 in Germany, the world's biggest medical device show, where potential business partners were able to negotiate deals with the company to market Padd outside the UK.

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2008 winners of the Lord Stafford Award - Innovation and Development prize (sponsored by *emda*)

"Thanks to the ISG, Dialog Devices has raised its profile and secured further investment including an *emda* Grant for Research and Development. The company has also benefited from the Lachesis Fund – an early seed fund that Dialog Devices accessed through Loughborough University. By working with other business support organisations including UK Trade & Investment, Business Link and Prospect IP, Dialog Devices is continuing its journey apace along the innovation path."

Vincent Crabtree, Technical Director, Dialog Devices Ltd



Jody Brown, Chief Executive, Dialog Devices Ltd, demonstrating Padd

Company name:
Dialog Devices Ltd

Location:
Loughborough,
Leicestershire

Sector:
Healthcare

What we do:
Develop and manufacture
electronic medical devices

Area of innovation:
Product/technology

New life for old drugs

Overview:

New Use Therapeutics Ltd is a new drug development company that is investigating how approved drugs can be used in treating a wider range of diseases. To explore the business opportunities resulting from this pioneering research, the company sought advice and support from the Healthcare and Bioscience iNet.

New Use Therapeutics Ltd is building on a pipeline of existing drugs already on the market for use in new therapy areas. Its research focus is on the development of drugs that alter cell function in cancer, diabetes, cardiovascular and neurodegenerative diseases, and ways that existing drugs can be used to treat a wider range of illnesses. The company is also developing a unique range of high throughput screening assays, for the measurement of mitochondrial function.

A Healthcare and Bioscience iNet adviser was able to discuss the company's research findings and help with ideas for commercial opportunities. Together it was identified that the company would need funding and help with business planning and product development to become truly successful.

The adviser suggested contacting Connect Midlands – an organisation that provides training to help attract business investment. Connect Midlands introduced New Use Therapeutics to potential investors. They knew how to prepare the company for investment pitches and assisted them to develop a strong business plan.

The iNet's adviser also pointed out Pathfinder grants – funding from *emda* and the European Regional Development Fund to help explore the market potential of new technologies. A grant of around £20,000 was made which further strengthened the business prospects of the company.

The next stage for New Use Therapeutics is to develop assay kits for sale directly to researchers. This will give the company a stronger product range, increase income for further research and help raise their profile. The Healthcare and Bioscience iNet has also recently agreed to support the company with an Innovation Support Grant that will help take these products closer to market.

Timothy Bates
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"The help and quality of service offered by our iNet adviser has been outstanding and has been responsible not only for securing finance but also initiating a number of positive changes to our business model and direction, leading us into new areas for commercial exploitation and increased profitability."

"We definitely intend to continue using the services of the iNet, as they have proven to be extremely useful to us on many levels. This has included the encouragement of our staff, in the currently challenging financial landscape."

**Dr. Bates, Chief Scientific Officer,
New Use Therapeutics Ltd**

Company name:
New Use Therapeutics Ltd

Location:
BioCity, Nottingham

Sector:
Biotechnology

What we do:
Identify and gain approval
for new medical indications
for approved drugs

Area of innovation:
Product



From trains to taming bugs

Overview:

Medi-Microbe UVC Ltd is a healthcare business set up out of a company which makes train seats. During the development of a new product, the train seat company discovered a novel way of exploiting the disinfecting potential of ultra-violet technology. After developing prototypes, Medi-Microbe approached the Healthcare and Bioscience iNet for advice and support relating to finding a route to market.

Medi-Microbe UVC Ltd forms part of a well established group of companies based in the East Midlands, which primarily manufacture train seats. Initially, ultra-violet technology was introduced to the group to provide manufacturing development and prototyping skills. The company was so impressed with the technology's potential that it bought the intellectual property rights and became the major share holder in Medi-Microbe UVC Ltd.

Medi-Microbe UVC has developed a range of patented products for protection against infection. Its leading products are a cabinet to disinfect equipment and instruments, a carousel to disinfect rooms, hand units, dental units and a ceiling unit to keep facilities bug-free. Going from train seats to super-bugs is a big change, so the company approached the Healthcare and Bioscience iNet for advice and support.

Following product development, Medi-Microbe UVC needed to discuss the options for product testing and approval, commercialisation and understanding their implications. The key was not just finding the best route to market but gaining support from the right organisations to prove the technology and open doors to the NHS.



"There is no doubt that the help and guidance received from the Healthcare and Bioscience iNet and other support organisations has helped the company prove our products and enter the NHS more quickly, the results of trials have been fantastic and our products are more effective than alternative methods used currently. We are being courted by some major players in the healthcare cleaning industry and now look set to revolutionise the speed and effectiveness of modern day disinfection methods."

Jonathan Wright, Marketing Manager, Medi-Microbe UVC Ltd

The Healthcare and Bioscience iNet suggested a range of options for Medi-Microbe to consider. The company was given information and advice on NHS purchasing and the benefits of using ISO testing. It was also directed to further regulatory assistance through a regulatory consultant and the NHS SMART Ideas Programme on rapid review assessment criteria.

After developing an in-depth knowledge of the healthcare sector through expert advice, Medi-Microbe continues to go from strength to strength. The company exhibited at Medica 2008 Trade Fair in Germany - the world's biggest medical device show - with the support of UK Trade & Investment and the iNet. It is now running a proof of concept trial with the East Midlands NHS Innovation Hub. It has also completed live trials at some major London hospitals and is about to embark on some other trials at Leicester Royal Infirmary.

Jonathan Wright
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Company name:
Medi-Microbe UVC Ltd

Location:
East Hunsbury, Northampton

Sector:
Healthcare

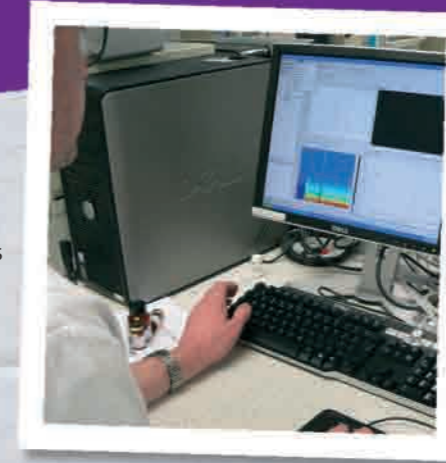
What we do:
Medi-Microbe UVC has developed a range of innovative ultra-violet disinfectant technology for use in hospitals and many other locations where there is a risk of infection such as dental surgeries, doctors surgeries etc.

Area of innovation:
Product development

Encapsulating innovation

Overview:

R5 Pharmaceuticals Ltd sells innovation. As the UK's only small company to provide a comprehensive range of prototype medicines, their products enable patients to absorb drugs to go through clinical trials. Funding supported the purchase of specialist equipment to expand their market by a third.



R5 Pharmaceuticals Ltd was established in 2006 when its three founder directors moved from all over the UK to premises at BioCity in Nottingham. The facility was almost ready to move in immediately and prevented the need for the fledgling company to make the £5million investment that would have otherwise been necessary to set up the premises elsewhere.

Started through private investment, including venture capital funding and a bank loan, the company acquired the machinery needed to develop a wide product range. Essentially their products enable the white powder of a drug in its original form to be turned into something that can be administered to patients. This includes liquids, syrups, injections, creams, ointments, inhalers and more commonly tablets and capsules.

"Without the facility at BioCity, the support from the iNet and help through Grant for Business Investment, R5 Pharmaceuticals would not be here today. The initial investment requirement became manageable with the ability to move into a ready-made lab needing only minor modifications. Plus the grant support to help us invest in vital equipment has resulted in major growth in our first two years."
Paul Tittley, Chief Executive Officer, R5 Pharmaceuticals Ltd

Capsules are the most common form of prototype medicines for drug trials, as they offer the most cost effective way to easily measure and administer small doses of drugs to patients. Purchasing a state-of-the-art-piece of equipment to produce capsules offered

R5 Pharmaceuticals a way to significantly expand their business.

Following support from the Healthcare and Bioscience iNet, R5 Pharmaceuticals successfully applied to Grant for Business Investment funded by *emda* to assist them in buying a new capsule machine, which was efficient and clean to use. Since then business has more than doubled in the last year and the machine has accounted for over one third of their projects during the first two years of trading helping them to win "Best Start Up Company" at the Medilink East Midlands Business Awards.

Paul Tittley
Chief Executive Officer
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Company name:
R5 Pharmaceuticals Ltd

Location:
BioCity, Nottingham

Sector:
Healthcare

What we do:
Make prototype medicines for clinical trials

Area of innovation:
Medicine

The team at R5 Pharmaceuticals Ltd



A shining light in renewable energy

Overview:

East Midlands Renewable Energy Ltd (EMRE Ltd) has developed several innovative control systems software packages and hardware devices, for use with renewable energy equipment. Spotting the opportunity for a new and clean range of heating and energy systems, EMRE Ltd applied for funding from the Sustainable Construction iNet to help develop their innovative ideas.

EMRE Ltd is a Derby based engineering consultancy established in 2007 that specialises in the integrated control of renewable and sustainable energy systems for domestic and commercial properties.

Engineers at EMRE Ltd saw a chance to be part of the SHINE - Zero Carbon (ZC) project, which brings together a consortium of key regional industrial and academic partners. The project aims to show how a range of low carbon building technologies can deliver environmentally friendly housing in practice and consists of nine dwellings in the St Luke's ward in Derby.

A Sustainable Construction iNet Innovation Support Grant (ISG) allowed EMRE Ltd to take a leading role in the SHINE-ZC project,

and fully exploit two of the key technologies the company has been developing in conjunction with Loughborough University. The first is the season thermal store technology that allows heat energy generated during the summer to be stored and released during the winter to produce domestic hot water and heating. The second is the whole system building environmental control system, which is a

unique approach to controlling a building's heating, domestic hot water and electrical demand system. These examples allow the SHINE-ZC project to showcase a sustainable zero carbon dwelling at an affordable price.

The iNet grant also enabled an external consultant to review EMRE's current business practices and identify areas for prioritisation and improvement. This allowed EMRE to focus on activities which will, ultimately, encourage increased profitability and growth of the business.

Vincent Smedley
Technical Director
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Left to right, EMRE's Vincent Smedley and Laurence Steijger with adviser Nawal Arshad, at Loughborough University.

Company name:
East Midlands Renewable Energy Ltd (EMRE Ltd)

Location:
Derby

Sector:
Construction

What we do:
Control systems for renewable and sustainable energy supplies

Area of innovation:
New and clean heating and energy systems



"Our business is currently focused on solar thermal, solar photovoltaic (PV) air-sourced heat pumps and season thermal storage technologies, so the iNet grant made it possible for us to further develop and improve our products and systems and to become part of East Midlands SHINE-Zero Carbon (ZC) demonstration project."
Vincent Smedley, Technical Director, EMRE Ltd

Model of sustainable excellence

Overview:

Larkfleet Homes Ltd is a Lincolnshire-based house builder. The company approached the Sustainable Construction iNet for support in developing its eco-demonstration house, with the aim of promoting sustainable development and creating a prototype for its own Code Level 3 and 4 homes.

Larkfleet Homes Ltd has built its reputation on building quality open market and affordable homes in prime locations throughout the East Midlands. It also prides itself on a commitment to the environment, especially with its carbon neutral status. This is reflected in the principles that underpin its future housing development plans.

Government regulations mean that all new houses built for Local Authorities and housing associations must now meet Level 3 of the Code for Sustainable Homes, and will eventually need to meet Level 4. Larkfleet Homes Ltd wanted to develop a prototype which included options to meet these standards. This would position the company as a leader in this field, in advance of new regulations, allowing it to educate others on the importance of saving energy.

The eco-demonstration house is located outside Larkfleet Homes Ltd's head office in Lincolnshire. Parts of the internal walls and some of the floors and ceilings and other sections of the building are left open so the internal structure, complete with timber frames, can be viewed.

The final stage in the eco-demonstration house construction involved installing water-saving and energy-saving technology features including rainwater harvesting systems, an air source heat pump, photovoltaic panels and solar thermal panels to achieve Code Level 4.

This has been possible with support from the Sustainable Construction iNet. The iNet adviser provided assistance with an application for grant funding and also put the company in touch with Loughborough University to carry out research into

"Housing associations and developers are being set increasingly tough challenges to meet new environmental standards. By connecting with the Sustainable Construction iNet, Larkfleet is benefiting from academic research and turning ideas into practical plans for the future success of the company. As the economy and the property market improve, we are positioning ourselves as a leader in Code Level 3 and 4 homes."
Karl Hick, Managing Director, Larkfleet Homes Ltd



Larkfleet Homes' eco-demonstration house

energy consumption in typical households – part of the SHINE project. The research findings will enable the team to determine the best way to make Code Level 3 and 4 homes practical and part of an affordable housing scheme.

The iNet also connected other parts of the company to the Manufacturing Advisory Service. The company is now in the process of achieving its ISO:9001 accreditation. By improving its quality control systems, its work towards the Code for Sustainable Homes Certification will also be aided.

Karl Hick
Managing Director
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www.larkfleethomes.co.uk

Company name:
Larkfleet Homes Ltd

Location:
Bourne, Lincolnshire

Sector:
Housebuilding

What we do:
Construct quality open market and affordable homes

Area of innovation:
Eco-demonstration home

Where Mexico meets the East Midlands

Overview:

Rico Mexican Kitchen Ltd is a Derbyshire based company run solely by its owner, Marcela Flores Newburn. The company produces and sells authentic Mexican meals and sauces to independent food retailers. With no background in the food industry, Marcela used innovation support to turn an idea into a business in full production.

Rico Mexican Kitchen Ltd was set up by Marcela Flores Newburn in 2008 in response to a gap in the market for authentic Mexican food. Originally from Monterrey in Mexico, Marcela decided to use her local knowledge to develop her own meals and sauces. However, with no previous experience of food production, Marcela was keen to source regional expertise and innovation support to help get the business off the ground.

In the first instance Marcela approached the Food and Drink iNet hoping to learn enough to make Rico Mexican Kitchen Ltd a success. After assessing the needs of her venture, the iNet put Marcela in touch with the Food & Drink Forum. The Forum provided training in food management, nutrition and access to valuable Mintel marketing information. They also gave advice on intellectual property protection and introduced her to contacts in packaging design and production.

“For any new company getting the right advice is crucial. The Food and Drink iNet, the Food & Drink Forum and Nottingham Trent University have provided me with extremely high quality, industry-specific advice that has been invaluable in getting Rico Mexican Kitchen Ltd off to a good start.”
Marcela Flores Newburn, Founder, Rico Mexican Kitchen Ltd

After working closely with the Food & Drink Forum, it was suggested the company should link up with Nottingham Trent University for continued product development and testing. By collaborating with the University, each product was microbiologically tested and prototype packaging was designed.

Despite running a young, start-up enterprise, Marcela has been recognised for the professional way she has researched and launched her own business, winning two accolades at the Food and Drink iNet Innovation Awards in 2008. Marcela was recognised for working with experts every step of the way to provide a strong foundation for further innovation and growth, as well as being crowned the Food and Drink iNet Champion 2008.

The company's food is currently available in a select range of independent retailers in the East Midlands and beyond. The next step for Rico Mexican Kitchen Ltd is to expand further with continued innovation support. With a firm business base now in place, Rico Mexican Kitchen Ltd has a bright future ahead as it looks to develop new products and be made available at a higher number of retailers.

Marcela Flores Newburn
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Company name:
Rico Mexican Kitchen Ltd

Location:
Belper, Derbyshire

Sector:
Food

What we do:
Produce authentic Mexican dishes and sauces

Area of innovation:
Product

Food and Drink iNet Champion,
Marcela Flores Newburn



Using more than their loaf

Overview:

Jacksons the Bakers Ltd produce bread, confectionery, celebratory cakes, savoury products and other foodstuffs. Following support from the Food and Drink iNet, including a successful application for an Innovation Support Grant, the company improved efficiency by installing new software, as part of a move to a new purpose-built unit.

Third generation family business, Jacksons the Bakers Ltd, has been baking for 65 years. A 2008 investment in a new purpose-built bakery to accommodate their 400 plus product lines and house sophisticated machinery meant that money to make further efficiency savings was scarce.

To complement the new unit, the bakers needed complex software to allow them to be more efficient and compile in-depth data on their customers' requirements. The package would link to a new system to provide more accurate traceability of products during and after production, so Jacksons can determine when, how and by who a product was made.

After initial meetings with an adviser from the Food and Drink iNet, the company was encouraged to apply for an Innovation Support Grant (ISG) to help with the cost of purchasing new software and for training staff to use it.

The application was successful and the Computer Operated Bakery System (COBS) was a vital ingredient in the firm's expansion, leading to greater efficiency and new business opportunities. The system is already being used by staff members, where it is quickly becoming apparent how valuable it will be for the continued growth of the company.

The ISG has allowed Jacksons the Bakers Ltd to have a sophisticated computer system to complement its new purpose-built bakery in Chesterfield, which has launched the latest chapter in the family firm's life. The software will bring greater efficiencies for a business that employs 50 people in Chesterfield, and puts it in a better position to service new clients and potentially gain new contracts.

Trevor Jackson
Owner
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The company accepting its
Baking Industry award in 2008

“We've got new business potential that our old software wouldn't have been able to deal with. It's far more sophisticated and it provides us with a greater range of facilities to do costings more easily. We can produce far more in-depth customer knowledge.”

“It's crucial to the progress of the firm. We have got sophisticated machinery in the bakery but without the sophisticated software in the office that this package and the training gives us, we would be no further forward.”
Trevor Jackson, Owner, Jacksons the Bakers Ltd



Company name:
Jacksons the Bakers Ltd

Location:
Chesterfield, Derbyshire

Sector:
Food

What we do:
Produce a selection of sweet and savoury baked goods for retail and wholesale

Area of innovation:
Process/technology

Fuelled by food

Overview:

Award winning business the Hardstaff Group are globally recognised pioneers in the development of natural gas vehicle technology. Following years of successful self-funded research and development into unique dual fuel technology, the group approached *emda* for investment support for testing facilities to move into manufacturing.

A fifth generation family business with almost 150 years transport expertise, The Hardstaff Group is at the forefront of environmental technology. The company has around 300 employees and a fleet of almost 170 heavy duty vehicles. Drawing on their extensive knowledge of the UK and global energy markets the company spotted the opportunity to further develop unique technology to power passenger vehicles through the use of natural gas.

The dual fuel technology uses a mixture of natural gas (methane) and diesel to run a standard vehicle engine. The benefits of this technological innovation are threefold. Firstly, through the use of natural gas, the need for crude oil (diesel) is reduced by 65–80%. Secondly, as methane is produced naturally from anything that has lived such as food, vegetation, plants or cardboard, the source of the methane is completely renewable and sustainable. Also, by burning methane efficiently CO₂ emissions are reduced by 18–22% on average.

Developed to a point by other vehicle manufacturers, but disregarded as a commercially unfeasible option, Hardstaff has invested the last eight years in refining the technology to get it to the stage where it performs well, offers significant return on capital expenditure and is sustainable – meaning that it can stand alone as a product without requirement for subsidy and re-uses waste material rather than drawing on new natural resources.

Working with leading European vehicle manufacturers, the Hardstaff Group has established the technology creating a demand for a large range of vehicles. The company has prospects from public waste refuse collection providers, the snow grooming industry, public transportation and a variety of haulage and distribution companies.

Hardstaff has developed the technology that is commercially viable and legal but is unable to carry out large scale testing without further investment. The Hardstaff Group are now working with the Transport iNet and looking at investment options with *emda* to support future scalability and explore routes to market.

Technical Team
0115 983 2300
enquiries@hardstaffgroup.co.uk
www.hardstaffgroup.co.uk

“Our dual fuel technology is suitable for a wide range of applications, and is consistent with government initiatives to reduce greenhouse gases from public transport. With significant environmental benefits and potential savings in operating costs, consumer interest has grown considerably for both new and modified vehicles. Vehicles powered by a 100% renewable fuel derived from waste products give an immediate improvement in air quality and is a major breakthrough to combat global warming. The next step is to adapt this concept to smaller vehicles including passenger cars.”

Trevor Fletcher, Managing Director, The Hardstaff Group

Company name:
The Hardstaff Group

Location:
Kingston on Soar,
Nottingham

Sector:
Transport

What we do:
Provide cutting-edge
technology and innovative
services to the global and
UK road transport industry

Area of innovation:
Technology



Staying state-of-the-art

Overview:

SL Engineering Ltd has been manufacturing specialist rigid tube assemblies and machined components for use in the aerospace, marine, medical, motorsport, oil and gas industries for over 40 years. The company sought grant support to ensure it could purchase the equipment it needed for further growth, and to manufacture new innovative product lines.

With over 40 years experience, modern facilities and continual investment in state-of-the-art Computer Numerical Controlled (CNC) plant and equipment employing CAD/CAM methods, SL Engineering Ltd has built an internationally recognised reputation amongst its blue chip customer base for producing very competitively priced high quality products. With CNC tube bending and precision machining, welding, brazing, fabrication, non-destructive testing and assembly, the company works to provide a complete manufacturing solution which includes project and supply chain management, lean manufacturing and best practice.

SL Engineering is striving to develop a world class Centre of Manufacturing Excellence which will operate with high end market sectors of strategic national importance. The company sought support to progress the project, which promised to increase productivity and reduce unit costs. Grant support would ensure that they could work

with advanced materials and special alloys as specified by aircraft manufacturers who constantly strive to achieve environmental gains.

After submitting an application, SL Engineering was awarded an *emda* funded Grant for Business Investment. The funding has assisted the company in buying the equipment it needs to grow the business and efficiently manufacture new, technically challenging product lines. The grant has been vital in helping to increase sales, enter new markets and create new jobs. With this backing, SL Engineering hopes to keep up with the continual modernisation of methods and complete its innovative Centre of Manufacturing Excellence.

John Pickard
Joint Managing Director
01778 440228
enquiries@sl-engineering.co.uk
www.sl-engineering.co.uk

Company name:
SL Engineering Ltd

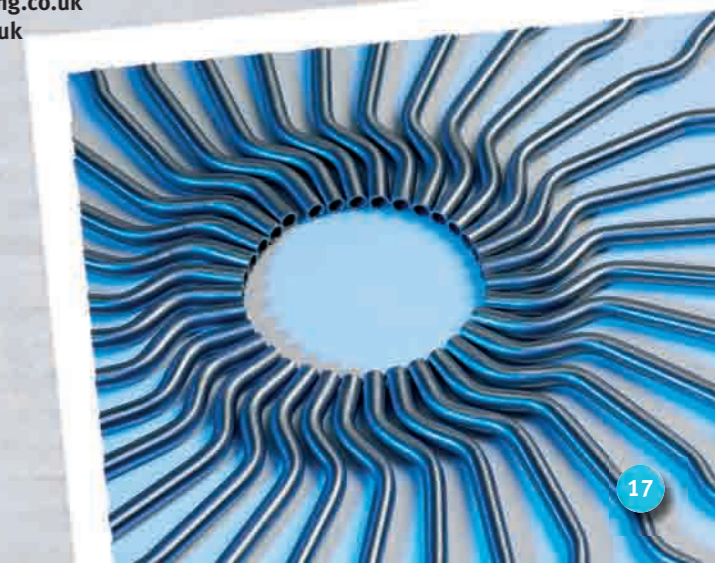
Location:
Aslackby, near Bourne,
Lincolnshire

Sector:
Aerospace engineering

What we do:
Manufacture specialist rigid
tube assemblies and precision
machined components

Area of innovation:
Product

“The grant awarded by *emda* has been of great assistance in developing the company in what is an innovative high technology marketplace.”
John Pickard,
Joint Managing Director,
SL Engineering



Cleaning up a grey area

Overview:

Wave International Ltd developed and supply Wavestream™ oil from bilge water filter systems, designed to suit a range of seafaring vessels. Research and development is a key part of the business. The company's mission to produce new, innovative environmental products for the marine and offshore sectors led them to seek funding to develop a product which cleans up grey water from recreational boats.

Based in Lincolnshire, Wave International Ltd has developed and manufactures the complete range of Wavestream™ filter systems. They are designed to suit all marine bilge applications and are supplied worldwide through a continually expanding network of focused distributors. The unique Wavestream™ system prevents oily bilge water being pumped overboard, polluting seas and waterways.

The Wavestream™ was the first bilge filter to achieve Lloyds Type Approval, using unique filter material that removes all trace oils and keeps bilge water within legal limits. It is now used by powerboats, yachts, super-yachts, fishing boats, lifeboats, pilot and patrol boats, canal boats, ferries and ships worldwide.

With innovation at the forefront of Wave International's business model, they identified a gap in the market for a system which would treat pollutants within domestic grey water from recreational vessels. Grey water comes from the galley, sinks and showers on board a boat. It starts off as fresh water but is contaminated with soaps, detergents and fats. These pollutants cause significant problems in marinas, small harbours and in-land waterways when pumped overboard, and there is currently no legislation to prevent this, due to a lack of technology available to address the issue.

Wave's mission was to produce a new and environmentally sound process to remove pollution from grey water whilst on board a vessel, rather than a solution which would require storage tanks and offshore treatment stations.

"Having previously received a SMART Award and seen the positive effects to the business, it was an easy decision for us to go ahead and apply to Grant for Research and Development to forward this concept and hopefully see the same benefits for Wave International in the future."

Paul Gullett, Managing Director, Wave International

Internal funding was not sufficient to enable the company to get development off the ground and ensure they were heading in the right direction. In order to allow the required research and development, Managing Director Paul Gullett applied for a Grant for Research and Development through *emda*.

The grant meant that the company was able to carry out research and testing into the treatment of the grey water waste stream whilst developing a system that would respect the space, weight and power constraints imposed by small crafts. Having already established a good reputation with a proven product, Wavestream International Ltd can now further increase sales revenue by introducing the new product to their existing worldwide distribution network and grow the business.

Paul Gullett
Managing Director
0870 730 2000
info@waveinternational.co.uk
www.waveinternational.co.uk

Company name:
Wave International Ltd

Location:
Colsterworth, Grantham, Lincolnshire

Sector:
Marine

What we do:
Develop and supply a complete range of Wavestream™ water filter systems which prevent the discharge of oily bilge water into rivers and seas

Area of innovation:
Product



The company demonstrates new developments



The road to success

Overview:

Cooper Research Technology Ltd manufactures product testing equipment used for research into the mechanical properties of materials used in road construction. By offering a unique product and service the company experienced unprecedented growth over a short period of time, and so required support to move into purpose-built facility to accommodate expansion.

Cooper Research Technology Ltd was established in Derbyshire in 1990 and is now a world leader in the design and manufacture of high-performance testing equipment for asphaltic and unbound materials used in road construction. The company was set up following the design of the Nottingham Asphalt Tester (NAT), the first product of its kind, by Chairman Keith Cooper.

Cooper Research Technology supports UK manufacturing through its export of machines and expertise to universities, oil companies, private laboratories, road contractors and transport departments all over the world. The company has steadily expanded its manufactured product range to offer mixers and roller compactors used to prepare and compact specimens, servo hydraulic and servo pneumatic universal testers, triaxial testers, fatigue systems and wheel trackers. Cooper Research Technology recognised the need to continue its growth, not only in terms of product range but also with regard to customer service and its own resources. In order to achieve this, funding support was required for its own 500m² purpose made facility.

Cooper Research Technology successfully applied for an *emda* Grant for Business Investment, offered specifically for businesses looking to invest in land, buildings and machinery to expand and modernise. The funding allowed the Company to move into much larger premises. The new unit enabled a dedicated research and calibration facility to be

developed, allowing for the manufacture of new products and an extension to testing and servicing capabilities. Without this bespoke building, inadequate storage would have caused a negative effect on lead times.

The company continues to secure customers worldwide and move its business forward. After the success of its first expansion, negotiation is underway for a second unit to further extend its product range and customer service facilities. Over 70% of business now comes from export markets, by building on the solid foundations it now has in place it is set for this trend to continue. Cooper Research Technology also continues to strengthen its links with The University of Nottingham through a Knowledge Transfer Partnership, whereby best practice methods are passed on whilst championing UK manufacturing.

Marianne Rolland
Commercial Director
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www.cooper.co.uk



"Without Grant for Business Investment we wouldn't have been able to grow the services we offer, and the company as a whole. Our purpose built facility has been essential in our continued success and development into new areas. With our expansion into a second unit now in progress, our future looks incredibly bright."

Marianne Rolland, Commercial Director, Cooper Research Technology Ltd

Company name:
Cooper Research Technology Ltd

Location:
Ripley, Derbyshire

Sector:
Manufacturing, research and development

What we do:
Cooper Research Technology Ltd is the only UK company to design and manufacture equipment to test the different properties of asphalt used in road surfacing

Area of innovation:
Process

Successfully counting calories

Overview:

NutraTech Ltd is a Nottingham-based business that was established four years ago. After working closely with health professionals to set up www.nutracheck.co.uk – an online weight management service, the company sought funding to move the business forward.



The Nutracheck service from NutraTech Ltd is an online and mobile phone weight management system, that helps users keep track of what they eat and drink at home, work and on-the-go. The Nutracheck website was developed in conjunction with a leading UK obesity expert, and is the only weight-loss service to combine the use of online and mobile technology in this way.

Based on keeping a personal food diary, the website links into an exclusive database of over 40,000 food and drink products. Being online, the service offers 24/7 convenience, together with an active online community to provide users with support and motivation. By accessing their account using a mobile phone, users can discreetly track their food intake – wherever they are.

As a start-up small to medium sized business, NutraTech Ltd's capital was quickly used up through research and development. To learn more about funding support, Rachel Hartley, Co-founder and Marketing Director, approached the Connect InvoRed programme. Run by Connect Midlands, Connect InvoRed is delivered through a range of workshops where delegates learn how to create a winning business proposition, and how to prepare for that all important investment deal. By attending one such event, the company gained practical advice on how to prepare an investment proposal, and refine its pitching techniques.

As a direct result of the Connect InvoRed support and its Springboard event in July 2005, NutraTech found an investor and raised its first round of funding. The company continued to work with

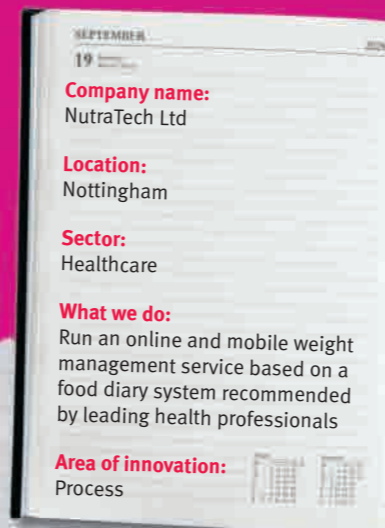
Connect InvoRed and entered its Amber stream programme, which teamed the company up with its very own mentor. Thanks to this one-to-one advice, NutraTech put forward a professional business plan resulting in a small business loan.

NutraTech is now in its fourth year of trading with clients including Boots the Chemist, the NHS, IPC Media, Conde Nast, Magicalia Publishing and a Local Authority. Thanks to the support it received, NutraTech is now profitable, and has numerous options available for future profits.

Rachel Hartley
Marketing Director and Co-founder
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www.nutracheck.co.uk

"Without doubt the InvoRed programme made a significant contribution to where our company is today. Our focus has been on growing organically and expanding the white label side of the business to get to the point where we are now. Our Nutracheck brand continues to grow strongly and our objective now is to use our health credentials to offer services within the public health sector. The Connect InvoRed service has been key in our successful funding and related growth."

Rachel Hartley, Marketing Director,
NutraTech Ltd



Company name:
NutraTech Ltd

Location:
Nottingham

Sector:
Healthcare

What we do:
Run an online and mobile weight management service based on a food diary system recommended by leading health professionals

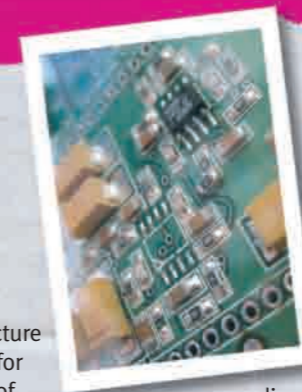
Area of innovation:
Process



Faster than the speed of sight

Overview:

Xcam Ltd produces bespoke Charged Coupled Device (CCD) digital cameras within short timescales for scientific experiments all over the world. Its unique cameras enable chemical reactions to be filmed using X-ray light. Innovation support has helped the company focus on its strategy to grow the business and become world-leader in its field.



Initially developed as a spin-out from the X-ray Astronomy Group at the University of Leicester, Xcam Ltd has benefitted from a range of innovation support services.

Xcam Ltd design and manufacture complex CCD digital cameras for scientific experiments, some of which use short pulses from new and intensive light sources to make atomic level movies. The company provides a total solution for all CCD requirements from concept through commissioning and end-user training – all at a cost and within a timeframe unparalleled anywhere else in the world.

Xcam's consultant scientists research and identify the optimum sensors needed at the beginning of all contracts. The team then design and manufacture the camera system, focusing on mechanical, thermal, electronic and software design needed for optimum performance.

Xcam made use of *emda's* Mentoring Escalator programme to help grow the company – its mentor contributed expertise and support while a long-term strategy was developed. Following this, the Connect InvoRed programme accelerated the process, allowing them first to attend the Amber stream workshop, followed by a series of boot-camps that culminated in a one day strategy workshop ran specifically for Xcam. From this the company achieved greater clarity, and became more aware of investment funding which could help to sustain growth.

As a result the company has focused more clearly on its unique strengths. Xcam has also teamed up with Chief Detector Scientists in Japan who are developing the multi-million pound X-ray Free Electron Laser (XFEL). These experiments are thought to be the most promising light source for the next generation of scientific exploration and discovery. As the characteristics of XFEL light are so different from the light available from current X-ray generation technologies, the scientists needed to establish the detector concept from scratch.

Xcam Ltd worked with the Japanese team to establish existing CCD technologies, complete feasibility studies (including producing a custom camera for testing), evaluate radiation damage and recommend custom device specifications. Xcam are now also working on another project to produce a camera for a European team of scientists in a similar field.

As well as this ground-breaking work, Xcam has been awarded a Grant for Research and Development funded by *emda* to carry out further product development activity. The staff have also benefitted from the support of the Healthcare and Bioscience iNet, enabling them to participate in market assessment training.

Karen Holland
Managing Director
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Customer feedback:

"Owing to the outstanding and unrivalled ability of Xcam Ltd, we successfully launched the development of a novel CCD detector dedicated to our XFEL in March 2009. We all thank the company for their crucial and enthusiastic contributions."

Dr Takaki Hatsui, Team Leader,
XFEL Project Head Office, RIKEN

Company name:
Xcam Ltd

Location:
Northampton

Sector:
Science

What we do:
Design and manufacture custom digital cameras for scientific experiments and new applications

Area of innovation:
Technology

Stylish products to save embarrassment

Overview:

P&S Healthcare Ltd is a family run business that makes stylish and high quality incontinence products and garments. It has developed an interactive web facility to enable NHS staff to order its innovative made-to-measure products, and communicate with them directly to discuss and order items tailored to individual needs.

Based in Hucknall, Nottinghamshire, P&S Healthcare Ltd employs 21 people and has been manufacturing quality incontinence products for over 25 years. P&S Healthcare is unique as it offers a made-to-measure service creating stylish, comfortable and effective products that help take the embarrassment out of incontinence. To bring these innovative products to a wide range of customers, including NHS healthcare professionals, the company looked to develop a secure online facility that would ensure patient anonymity and data security, but also a personalised service.

P&S Healthcare sought help from the Healthcare and Bioscience iNet, and early discussions with one of their advisers identified issues with the development of customer engagement. Working with health professionals throughout the world meant that a secure yet user-friendly interactive website would be vital to communicate with customers worldwide.

The iNet adviser recognised P&S Healthcare's desire to continually innovate, and understood the benefits that further investment could bring in reaching its target market, so explored ways of helping the company. The iNet adviser suggested that an Innovation Support Grant (ISG) would help the company improve its website as a major element of their communication strategy. An ISG was secured to kick-start the website development, enabling health professionals to make enquiries and place orders quickly and securely online.

As a result customers have been encouraged to use P&S Healthcare's site. The customised services and improved response time – essential to the success of its made-to-measure products – are proving a real draw. Thanks to a nomination from their iNet adviser, Managing Director Sam O'Regan has recently been awarded the Most Innovative Business prize at the East Midlands Women of Worth Awards, funded by *emda*.

P&S Healthcare not only supplies the NHS but now sells its products all over the world via its website, as well as through distributors. The company has an ambitious plan to develop more innovative products and services and is determined to increase its business and create new jobs.

"The company is continuing to expand and is recruiting more skilled machinists, helping to boost textile manufacturing in the region and UK. We are looking for more export opportunities with the help of the iNet and other business support services such as UKTI and Business Link."

**Sam O'Regan, Managing Director,
P&S Healthcare Ltd**

**Sam O'Regan
Managing Director
0115 968 1188
sales@pshealthcare.org.uk
www.pshealthcare.co.uk**



Managing Director Sam O'Regan accepting the Most Innovative Business prize at the East Midlands Women of Worth Awards, funded by *emda*

Company name:
P&S Healthcare Ltd

Location:
Hucknall, Nottinghamshire

Sector:
Healthcare

What we do:
Design and produce quality incontinence products and garments

Area of innovation:
Software and e-commerce technology



Making a mark on security

Overview:

Sure Technology Ltd designs and develops award winning personal alarms, home security systems, CCTV cameras, digital recorders, stand-alone security and energy saving products. Innovation support funding has enabled the company to develop a unique DNA marking and forensic analysis system to enhance its existing product range.



Established in 2003 as a spin-off from manufacturing business SURE24 Ltd, Sure Technology Ltd is a research and development focused business specialising in innovative electronic security solutions. Set up by partners with over 17 years expertise in the field, the business offers consultancy services as well as unique product solutions.

Already successful supplying crime prevention solutions to the police, environmental agencies and local authorities, Sure Technology wanted to expand its product range. Making use of specialist knowledge in security, circuit design and software development, they created a revolutionary DNA intruder marking and analysis system, to identify burglars and enable positive identification by the police.

The new system – known as Spyral – is linked up to the sensors in an household alarm. When motion sensors detect an intruder, the alarm sprays a DNA solution on the burglar which covers the intruder in a coating that can be seen under UV light. A DNA analyser then enables identification of the suspect via a portable testing kit. As the DNA marker sticks to the skin, hair and nails for up to six months and cannot be removed from clothing, it significantly improves the chances of perpetrators being caught and convicted, but more importantly provides a deterrent in the first place.

The project took place over six years. Initially an *emda* funded Grant for Research and Development was awarded for feasibility studies into the DNA dispersion devices. Positive research findings, spurred the company on to develop the analyser software with the help of an Innovation Support Grant. Also, with the help of a Pathfinder grant, Sure Technology has been able to carry out market research to help bring the product to market.

The future is bright for Sure Technology. They are coming to the end of the research and development phase of the project through involvement with the University of Leicester and Loughborough University, but will continue the production development phase with knowledge transfer partnerships provided by De Montfort University. The next steps are to seek endorsement for the security systems from central Government and look at other uses for the technology, including automated care systems for the NHS, as well as using the DNA analysis tool in medical discovery and disease monitoring.

**Graham Marshall
Managing Director
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graham@suretechnology.net
www.technology.sure24.net**

"We might not have been at the point we are today if it wasn't for the support provided to us through an *emda* funded Grant for Research and Development and an ISG. The DNA dispersion device has so much potential and as we begin working with new sectors such as central government and the NHS the possibilities for Sure Technology are endless."
Graham Marshall, Managing Director, Sure Technology Ltd



Company name:
Sure Technology Ltd

Location:
Bingham, Nottinghamshire

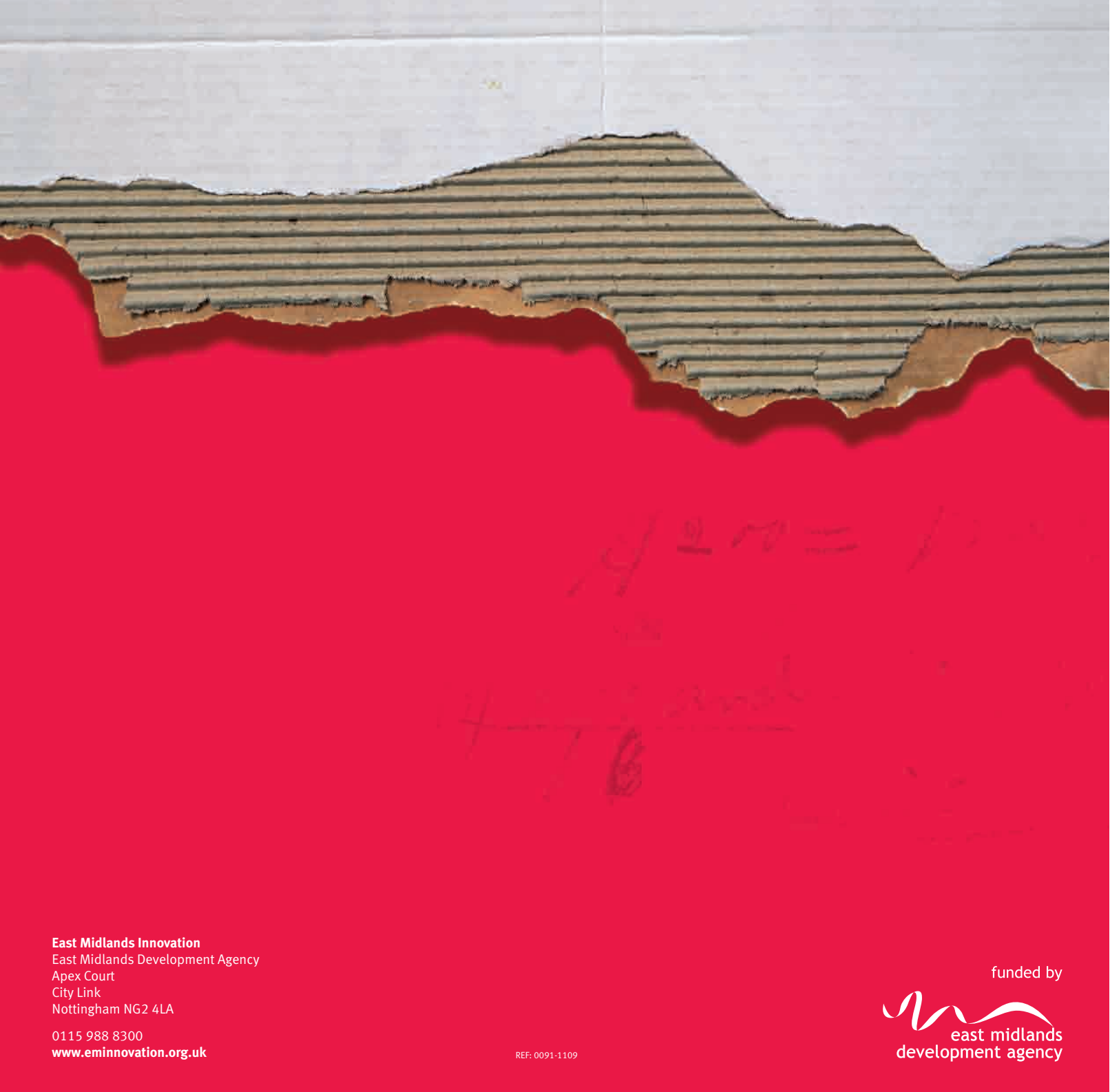
Sector:
Home automation and security

What we do:
Design electronic products and provide innovative solutions for the security and building management industry

Area of innovation:
New product development



Graham Marshall, Managing Director of Sure Technology Ltd is onto a Sure thing



East Midlands Innovation
East Midlands Development Agency
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REF: 0091-1109

funded by

east midlands
development agency