

GIBSON INDEX NEWSLETTER

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Your Monthly e-Newsletter on British Enterprise and Innovation

Welcome to the UK's most comprehensive and best-read Newsletter on Small Technology Companies, Academic Enterprise and Latest Innovation

Now that's what I call 'enterprise'

In late 2015 **Peppa Pig** co-owner **Entertainment One** took control of UK producer **Astley Baker Davies**, the creator of the hit cartoon character, in a deal worth £140m.

As part of the deal the creators, **Mark Baker**, **Neville Astley** and **Phil Davies**, are producing an additional 52 episodes of Peppa Pig. As the sole owners of ABD the trio will split the £140m pay out selling the 70% stake. Along with the recent story last month about the success of the group **One Direction** – which earn £220,000 a day – it shows the exceptional money-making ability of some of the UK's cleverest services companies.

The trio, who became friends working in the animation department of **Middlesex Polytechnic** in the mid-1980s, are already multi-millionaires thanks to receiving royalties since striking the co-ownership deal with Entertainment One in 2004. While the total of payments since then is not known, Entertainment One has revealed that in just the year to the end of March the payout was £17m.

In 1999 Astley and Baker got together with Davies and a year later Peppa Pig was born – ABD was formed with production at an HQ called **The Elf Factory** – although the cartoon initially proved tough to commission. Astley recalled in an interview that he made just £400 in a year. "We survived by raiding our savings," he said.

The first episode of Peppa Pig aired in 2004 on **Channel 5** and proved to be an instant hit and the possibilities, later global, of TV and merchandise expansion were immediately apparent. The franchise has exploded internationally with Peppa Pig broadcast in over 180 territories, combined with sales of products the brand hit the \$1bn mark last year. There are more than 12,000 branded products, from pencil cases and ice cream to bean bags and even **Peppa Pig World** theme parks in **Hampshire** and **Milan**.

The company says that it is the "No.1 pre-school property" in the UK – outpacing favourites including as **Thomas the Tank Engine** and **Fireman Sam** – as well as in Australia, Spain, Italy, Mexico and Brazil. In the US, where E1 has a merchandising deal with the company behind the **Minecraft** toys, has successfully put Peppa Pig into **Walmart** stores from this year for the first time.

Contact: www.astleybakerdavies.com

www.gibson-index.com

The Newsletter is compiled and edited by **Marcus Gibson**, former *Financial Times* technology correspondent, who has been covering enterprise and innovation for more than 20 years. The Newsletter aims to highlight developments in at least 100+ companies each month. It is derived from the wide-ranging news-gathering operation that produces the [Gibson Index SME database](#), which now contains profiles on more than 56,000 UK-based technology SMEs.

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COMPANY OF THE MONTH

Screach Ltd's system allows venues to run advertisements during film breaks

In 2015 Screach chief executive **Rob Rawlinson** said the company which allows pubs to run their own adverts during TV ad breaks was 'set for massive growth' after a link-up with one of the industry's main players.

The Newcastle-based Screach, formerly known as **Screen Reach**, was set up in 2009 to provide 'second screen' benefits to broadcasters, allowing them to interact with viewers via their mobile phones.

Recently, it performed a "classic flip" and changed its focus to concentrate on pubs and similar venues, which, through its technology, can run advertisements, promotions and more in breaks between other content shown on television screens.

In June 2015, the business agreed a partnership with **BT Sport** that sees its basic package being made available for free to subscribers. Within 80 days, it achieved 2,100 sales through the channel.

The company, which employs 42 people, including those at an external call centre, is now hoping to quadruple turnover this year, while growing the number of venues using its technology by 500%.

Rob Rawlinson, who took over from **Paul Rawlins** as chief executive in January 2015, said: "Around 18-24 months ago, the company underwent what's known in the industry as a classic flip. It was realised that a number of factors were limiting growth opportunities and that clearly a change of strategy was required. We considered places where there were a lot of primary screens that were not being well utilised and where there was a desire to engage with customers.

"**Pubs** were the obvious choice. There are 48,000 in the UK, 27,000 of which have subscription sports. A further 10-15,000 have screens for terrestrial TV or other reasons."

Screach's offering combines Android technology and a cloud-based system that allows for 40 minutes of general content followed by 20 minutes of promotional material.

Pub staffs have control of how the set-up is used and, as Screach provides a wealth of templates, they simply have to type what they want to appear on the screens.

He added that, at the lowest entry point, the system cost £25 per month – or 80p per day.

"That's good value to get a sales and marketing tool of this potency," he said.

Contact: www.screach.com

SME NEWS – ENGINEERING, CONSTRUCTION & ENERGY

Print removal and Cambridge spinout firm Reduse to develop the first 'Unprinter'

The company has developed a high potential technology to remove print from paper – allowing it to be reused – raised £500,000 in seed investment from **Cambridge Enterprise**, the University's commercialisation arm, and the **University of Cambridge Enterprise Fund III**, bringing the company's initial venture funding to nearly £1 million.

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Its first '**Unprinter**' will allow the reuse of paper, eliminating the need for recycling. Every year, the average office employee uses 10,000 sheets of paper, 80 percent of which is discarded within a few days. Reduse's technology uses lasers to remove print from laser-printed and photocopied paper, a process that can be repeated several times without damaging the fibres of the paper. The paper is eventually recycled, but not before reducing a business's paper costs by as much as 40 percent.

Stuart Evans, co-founder of Reduse is also the ex-CEO of **Cotag International**, **Plastic Logic** and **Novacem**. While industry printing giants have experimented with invisible inks and other forms of unprinting, Reduse's technology does not rely on the use of speciality inks that vanish over time or the purchase of special printers and compatible 'erasing' machines. Reduse technology works on standard laser-jet and copy machine toner.

Hidde-Jan Lemstra, CEO of Reduse, said "It is our goal to allow the reuse of paper, eliminating the need for recycling. Over the course of the coming months, we will be continuing conversations with some of the biggest printer manufacturers in the world."

Cambridge Enterprise investment manager **Mike Arnott** will join the Reduse board. He said: "We have been observing Reduse make impressive progress in their pre-funding stage. With such an enormous opportunity and a strong team, we're looking forward to working with them."

Contact: www.enterprise.cam.ac.uk/tag/reduse

Parry People Movers pioneers light rail for small towns and rail routes

The almost-unknown Stourbridge-based ultra-light rail vehicle firm is at the centre of efforts to build new lightweight railcars for use on branch lines in the UK and overseas – and far less expensive than city centre tram systems.

The firm's railcars are now used in full passenger service on the short **Stourbridge Town** branch line, part of the **London Midland** franchise and operated by **Pre Metro Operations Ltd**. Since their introduction in 2009, nearly 400,000 passenger journeys have been made on the two railcars at Stourbridge with reliability of over 99% during the past six months. The new railcars have enabled service frequency to be increased, costs to be halved and carbon emissions cut by two-thirds.

At Stourbridge Junction in 2015 a Parry People Mover stood alongside a four-car London Midland service. The first car of the London Midland service is a Class 153. One proposed application of the larger PPM vehicle is to replace 153s on branch lines, freeing them up to increase capacity on busier lines.

PPM technology rests on a simple but effective engineering device: the flywheel. The rotating flywheel is a store of kinetic energy that is used to power the vehicle. A typical PPM flywheel is made from steel laminates, 1m in diameter and 500kg mass, rotating at a maximum speed of 2,500rpm – simple, reliable and easily maintainable.

The firm has a design for a proposed longer railcar. It would feature two flywheel energy stores and two small diesel engines. MD **John Parry** and maintenance engineer **Gary Picken** believe their Parry People Mover (PPM) lightweight railcars are excellent.

Mr Parry has fought a few battles over the years. As a **Colonial Service** officer stationed in North Borneo in the early 1960s, Parry trained and led an army of irregulars to fight an insurgency, and an MBE for gallantry.

Contact: www.parrypeoplemovers.com

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AcerMetric Ltd invents innovative modular building system

Harnessing expanded polystyrene – now known across Europe as ‘airpop’ – at the centre of its patented design, the **Acermetric** building system has cut costs and build-time at a London primary school where a two-storey multi-purpose 466 sq metres ‘Centre of Excellence’ was assembled in around 13 weeks on site by just four builders lifting panels by hand and installing the elements with a single tool.

Coppice Primary School in **Chigwell**, which provided independent funding for the project, said the new Centre of Excellence “has been a huge success with our pupils, being able to educate them in a purpose built provision”.

The idea was the brainchild of UK engineering design veteran **David Appleford**, who cut his teeth in the deep sea oil exploration sector. According to Appleford, his system owes a great deal to the EPS foam which forms the core of the panels.

He said: “The grey EPS at the heart of our Acermetric panels gives us many advantages – light weight, rigidity, excellent insulation, high acoustic performance and good fire protection.

“In fact thermal insulation is so effective that in the primary school project – the combination of the heat generated by the occupants and high solar gain meant we had to install additional cooling measures.”

The **Acermetric** system is patent-protected in 20 countries with another 40 countries recognising patent conformance. It comprises a range of interlocking panels each of which is effectively a sandwich of grey EPS with the option of the outer board material specified according to the building’s needs.

Together with window and door cassettes, the full range of elements extends to around 40 shape options which, when locked together and linked to patented roof support beams and columns, allow more than a million combinations of high-strength, three-dimensionally stable structures, effectively a ‘lego-like’ system.

According to the company’s calculations, the system could easily accommodate buildings up to **10 storeys high**, is suited to areas prone to ground movement and even to earthquake risk, and has undergone stringent testing covering strength, fire resistance, acoustic protection, thermal insulation and longevity.

Contact: www.acermetric.co.uk

Deep sea marine engineering company invents buoyancy system using cryogenic gas

Smarter Subsea Handling Ltd founder **Phil Pritchard** spoke at the recent British Cryogenic Council’s Cluster Day event at the Rutherford Appleton Laboratory, Harwell.

Smarter Subsea Handling Ltd (SSH), formerly named **Deep Sea Recovery Ltd**, have pioneered a novel, controllable marine buoyancy system using cryogenic gas.

Phil Pritchard explained the fundamentals of SSH’s patented controllable buoyancy system were explained, noting several of the challenges that had to be addressed in the course of the system’s development.

This was illustrated with SSH’s animation showing the deployment of a unitary buoyancy module employed as a subsea ‘forklift’ device for lifting and moving objects around the seabed. Phil Pritchard has also secured **Innovate UK** and industry backing to bring his invention to fruition.

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First Light Fusion completes fundraising of up to £22.7 million

First Light has discovered new implosion processes that can achieve the high temperatures and compression necessary for fusion reactions and other valuable applications. The company's approach has the potential to dramatically shorten the timescale and cost of achieving practical and affordable fusion energy. This fundraising will allow First Light to further develop its modelling tools and experimental capability and will fund collaborations with leading research groups in the field.

SME investor firm **Parkwalk** initially invested in June 2011 alongside **IP Group plc** and **Technikos** when the company was spun out of the **University of Oxford**. This funding round was priced at 8.5x their original investment level, subsequently supported by a second investment in October 2013.

The company has also announced today that it has established a scientific advisory board to provide technical input and governance for its ongoing development programme. The Board is chaired by **Arun Majumdar**, who is the Jay Precourt Professor at Stanford University, and consists of eminent figures in energy innovation including Nobel laureate **Steven Chu**, the former US Energy Secretary.

Contact: <http://firstlightfusion.com>

Liquid air energy storage unit to be trialled at 5MW demonstration project

Highview Power Storage, a company which makes energy storage systems based on liquid air technology, has said that work is well underway. The project, at a gas generation landfill site in **Greater Manchester**, has been described as a pre-commercial demonstrator of the liquid air energy storage (LAES) technology, which will be used to turn waste heat into power.

Highview, which signed a collaboration agreement with **General Electric (GE)** in 2014, said that major components have been delivered and fixed to their platforms, marking the completion of the major plant installation phase.

According to the **Institution of Mechanical Engineers (IMechE)**, LAES technology drives an air liquefier using excess electrical energy. The liquefied air, kept at low pressure, is then pumped at high pressure across heat exchangers which turn it into gas and drive turbines which in turn drive a generator.

Highview, along with recycling and waste management services company **Viridor**, was awarded £8 million in funding for the project through a competitive tender process by the UK government's Department of Energy and Climate Change (**DECC**) in February 2014.

The project is expected to have a 15MWh storage capacity and should be completed by the end of this year. Once installed it will be tested over a year of operation and should provide a range of applications. These include providing short term operating reserve (STOR), which involves providing either generation or demand reduction to the country's **National Grid** electrical infrastructure within two hours of receiving a request.

Matthew Barnett, head of business development at Highview, said the company felt its technology could compete favourably with battery-based energy storage for larger-scale and longer duration applications. The systems use so-called "off-the-shelf" components from suppliers including heat exchanger firm **Heatric** and cryogenic storage tanks by **BOC** as well as GE turbines and generators.

Contact: www.highview-power.com

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RaptorUAS stages first UAV flight across the North Sea, from Scotland to Norway

In September 2015 a new civilian fuel cell UAV designed for rescue – is gearing up for the first UAV flight across the North Sea. The flight is the result of a joint effort between UAV fuel cell power systems supplier **Horizon Energy Systems** (HES) of Singapore, and Scottish UAV developer **RaptorUAS**. The team is working with **Northern Colorado Search and Rescue** in the US, as a first end-user of the long endurance UAV system.

The Singapore-built fuel cell is able to keep the Raptor E1 UAV flying for over 12 hours, which makes it an ideal support tool in difficult search and rescue operations over large areas of sea or land. Recognised as the world's longest endurance energy storage systems for electrical UAVs, fuel cells from HES have helped set new world records in the past including the NASA-backed 5kg Pterosoar UAV system which flew 128km in 2007.

This first HES fuel cell powered UAV flight in the UK is only the start as several more are lined up in the coming weeks and months. **Taras Wankewycz**, CEO of HES said "We look forward to breaking new ground in the search and rescue arena, said. "Long flight endurance enabled by fuel cells can make a significant difference in challenging field operations, and the difficult conditions in the North Sea make it an ideal proving ground."

Raptor UAS has recently launched a **KickStarter** campaign to help fund the record event. A portion of the funds raised will be used to provide the volunteers at Northern Colorado Search & Rescue with a turnkey Raptor E1 UAV system. The non-profit group partners with law enforcement agencies and fire departments in the US to provide the latest technologies to assist in various events, disasters, and accidents.

Contact: www.hes.sg – www.raptoruas.com

SME NEWS – ELECTRONICS & TELECOMS

Mobile Visual Information Systems secures finance to cement UK leader position

Matlock, Derbyshire-based company, Mobile Visual Information Systems (**MVIS**) said the new funds will enable it to continue as UK leader in roadside solar powered mobile signs – only three years after it was established.

The funding was provided by **Lombard Technology Services** (LTS), a specialist in finance for IT, computers, software and telecommunication SMEs. MVIS has won a 'multi-million pound' contract to deliver signage for **Highways England's** M1 smart motorway project, which is currently being piloted on the M1 corridor at three sites between junctions 42 and 15.

As part of the contract, MVIS invested in 136 new portable, solar powered, five colour matrix signs and partnered with **Bartco UK**, manufacturer of the signs, to deliver the largest deployment of portable variable message signs on the smart motorway project.

This signage is providing thousands of drivers with information about the road works, as well as helping to keep them safe. It is popular with the contractors working on the project and has further enhanced MVIS' reputation as a UK market leader in the supply of mobile signs.

The contract and finance package has put the company on target for a 500% increase in turnover over the next three years following double/treble digit growth in turnover and profits over the previous two financial periods.

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Pat Musgrave, MD of MVIS said: “Securing the finance has not only enabled us to deliver signage for the Smart Motorway project but also cemented our reputation as market leader in mobile signage and pave the way for international expansion for the company.”

The company was established in 2012 following a contract win with **Transport for London** to supply 177 solar powered mobile signs to transmit key messages for the games lanes to road users during the London **Olympic Games**. Mitchells also secured the finance on behalf of MVIS to enable it to secure the Transport for London contract. Since then MVIS has tripled employees and has 360 signs for hire.

Contact: www.m-vis.co.uk

Two Dorset electronics firms merge to provide stronger sub-contract production

IO Electronics Ltd of Poole in Dorset and **CSM Electronics** in neighbouring Wareham, came together in a bid to become a ‘dominant presence’ in the UK’s electronics subcontract manufacturing industry. The vision is to become the South’s foremost authority in the field offering an unrivalled approach to contract electronics.

The companies will trade under the name of IO Electronics Ltd and will be based at the Holes Bay site in Poole. **Andrew Cridland**, General Manager of IO Electronics, said: “IO and CSM are both focused on growth and commitment to delivering the highest quality PCB, cable and box build assembly services. We believe both manufacturers share a similar ethos and the combination gives us the opportunity to build something very strong together. Over time customers will benefit from an increased range of specialist manufacturing services that this merger will create. “

In mid-2015 it joined the **Green-PEA** scheme. The Green Positive Environmental Action scheme, Green PEA for short, is a certification scheme. It provides companies and other organisations with a simple review of their energy costs, and then offers recommendations to help them save money on their energy usage.

As far back as 2010 the firm provided an editorial in ‘*Electronics Sourcing UK & Ireland*’, in support of returning electronic manufacturing back to Britain. “This is something they are passionate about,” said Mr Cridland.

Contact: www.io-electronics.com

SME NEWS – CHEMICAL, MATERIALS & ENVIRONMENT

Fast-emerging Belfast firm makes progress in clean nanomaterials

MOF Technologies won £900,000 funding to expand their UK manufacturing base and scale up production of their novel clean technology-enabling nanomaterials – Metal-Organic Frameworks (MOFs).

This success builds on MOF Technologies’ recently announced collaborations with **IBM** and **General Motors** in the commercialisation of MOFs to transform a range of clean tech applications. These include gas storage and filtration, heat transformation and the use of natural gas for vehicular transport.

Dr Paschal McCloskey, CEO of MOF Technologies, said “MOF Technologies view this success in securing funding from Horizon 2020 as verification of our plans to scale up our innovative production process. This ensures the ongoing growth of our company to deliver the full commercial potential of MOFs in the clean tech and other industry sectors”.

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The funding is part of a **European Horizon 2020** project which includes partners such as **Johnson Matthey** and **GDF Suez**. The project itself, named ProDIA, received support totalling €7.6m and focuses on the production of nanoporous materials for clean technology applications in the fields of gas storage, air purification and heat pumps. MOF Technologies is the largest recipient of the funding within project ProDIA, and is one of only a handful of companies to receive such a significant level of support via Horizon 2020.

Through this collaboration, MOF Technologies will scale up its proprietary manufacturing process to enable them to supply industrial scale applications. Bucking the current trend of off-shoring, MOF Technologies will grow its manufacturing base in **Belfast**, Northern Ireland, with new facilities scheduled to open in Q1 2016.

In October 2015 MOF Technologies launched three new products at **EuroMOF**, the 1st European Conference on Metal-Organic Frameworks and Porous Polymers being held in Potsdam, Germany. The firm is increasing its production capacity and its portfolio of MOF products for a variety of commercial applications. The 3 new MOF products, Zn-SIFSIX, Mg-MOF-74 and Mg-Formate, bring the company's product portfolio to 7 MOFs which offer between them unrivalled gas selectivity, capacity, compression limit and thermal stability. **Professor Stuart James** (CTO) and **Dr Jose Casaban** (lead chemist) presented talks on the company's innovative approach to industrial scale synthesis of MOFs.

Contact: www.moftechnologies.com

Business Growth Fund invests £6m in motorsport company Prodrive Composites

The high profile business works within the automotive, aerospace and marine sectors producing expertly produced, lightweight, high performance composite components and structures, such as interior trims and bodywork.

The business employs nearly 200 people at its manufacturing plant in **Milton Keynes**. The production process is carried out in-house, from receipt of raw material to production of the finished high-performance components and structures. In the past 18 months the business has achieved significant capacity improvements, reducing the cycle time from raw material to finished parts from an average of six to eight weeks down to two weeks.

As part of a finance deal, **John Weston** joins the company as non-executive chairman after being introduced to the business by **BGF**. John spent 32 years in the aerospace and defence industry, concluding as CEO of **BAE Systems** with sales of £12.5bn and 120,000 employees.

Mr Weston now works to support a number of small companies in the high technology and manufacturing fields including as chairman of **MB Aerospace, Accesso, Windar Photonics** and **Fibercore**. He is also a non-executive director at **Torotrak**. BGF's **Ian Downing** joins the board as non-executive director and James Syrotiuk as board observer.

Prodrive Composites was created in the early 2000s by Prodrive to support its motorsport activities. The company is one of the world's most successful motorsport businesses with six World Rally titles, four British Touring Car titles and four Le Mans titles.

Prodrive Composites is now also manufacturing the main vehicle chassis for the **European Space Agency's** ExoMars programme. It has since expanded its customer base to include a growing number of premium and sports car manufacturers and aerospace customers.

Contact: www.prodrive.com – Matt Bradney – 01295 273 355 – mbradney@prodrive.com.

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GI favourite Smart Antenna Technologies wins funding from Mercia Technologies

Mercia has ploughed £1.2m into the **Birmingham University** spinout that has developed an antenna system for wireless devices. The cash is part of a wider £1.5m funding round for **Smart Antenna Technologies (SAT)**, which is one of our **Gibson Index** SME 'favourites of the future'. It will be used to continue the company's technology development alongside its talks with a number of major mobile and laptop partners.

SAT is led by founder **Dr Sampson Hu** and chairman **Colin Tucker**, a former chief technology officer at **Orange** and founding chief executive of **3**. Hu said: "Smart phones are becoming ever more powerful, but as functionality increases more antennas are required. Our patented technology provides one powerful, multi-functional antenna system, with the potential to reduce production costs by up to 50 per cent whilst potentially increasing the battery life of the device." SAT is also backed by Mercia's wholly-owned subsidiary **Mercia Fund Management (MFM)**.

SAT has made significant progress since its launch in August 2013. It completed a demonstrator of the technology and is working with leading consumer electronic suppliers in each of its key market sectors; mobile phone, laptops and tablets, in-car electronics and micro-base stations. SAT expects to convert these engagements into 'design wins' for inclusion in future products over the next 12 months.

Contact: www.smartantennatech.com

Optical data firm Mobile GIS Services Ltd finds clients in energy and rail sectors

In September 2015 Mobile GIS Services uses mobile technology and sensors to measure spatial data out in the field for a wide range of energy providers, architects and rail networks. The geospatial business took taken space at **Liverpool Science Park** as it gears up for the next phase in its growth strategy, said MD **Mike Darracott**.

MGISS has taken on five new staff members to boost the business which uses mobile technology and sensors to measure spatial data out in the field. Clients include **SP Energy Networks** which uses remote measurement tools from MGISS to validate low ground clearances on overhead power lines.

Liverpool-based architects **SNOW** have also benefited from MGISS technology. Using a tool called 'Spike', the firm is able to accurately measure the heights and facades of existing buildings so that plans for new buildings can be designed more accurately and efficiently.

MGISS was founded in 2011 and taken over by Mike Darracott in April 2014 after he raised venture capital funding to acquire the business from its retiring owner. MGISS is the latest company to join Liverpool Science Park after it was announced that the occupancy level is now at 87% across both the office and laboratory spaces.

It is also UK distributor for the (Ashtech) Spectra Precision Professional range of GPS positioning and navigation equipment, Handheld's tablet PCs and Blackroc's Procyon GPS system and with Survey Pro, Survey Office, Fast Survey and DigiTerra Explorer GIS data capture software, Mobile GIS Services Limited is well equipped to support and offer training in Survey and GIS solutions.

MGISS exhibited at the Arboricultural Association's 49th conference in Warwick – 'Sustainability in the Urban Forest' event on 21-23 September 2015. MGISS has a number of products and software that can create technological solutions for arborists.

Contact: www.mobilegisservices.co.uk

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Materials super-firm Magma Global celebrates its five-year anniversary

Magma Global CEO **Martin Jones** – a veteran of successful companies **Insensys** (now **Moog Insensys Ltd**) and **Aston University** photonics spinout **Aston Photonics** – greeted 70 oil and gas industry guests at the **Dukes' Hotel** in St James's Place London.

Senior London based executives from **BP**, **EnQuest**, **Heerema**, **GMC Engineering**, **JDR**, **IO Oil and Gas**, **2H**, **Ocean Installer** and **Subsea 7** attended, together with the Magma Global team and MPs.

He outlined Magma's continuing growth plans and key achievements in the development of its novel **m-pipe** subsea pipe designed for deep water, high pressure, high temperature and sour service riser, jumper and intervention applications. The firm recently announced a partnership agreement with both **BP** and **Subsea 7**.

Mr Jones said "Five years ago when oil was at \$70pb there were two of us in an office with a vision to build the world's most reliable pipe for subsea risers, jumpers and downlines. Today there are 160 of us across the Magma group."

The Magma m-pipe was required to avoid the problems arising from steel and flexibles in deep sea pipelines – further exacerbated by the drive for deep water and higher temperatures and pressures.

He added "The aviation industry is a good precedent where use of carbon fibre is now standard. It is now also happening in oil and gas, and I am pleased to stand here tonight having made considerable inroads over the last five years."

Contact: www.magmaglobal.com

Northern Ireland plaster firm shows how exporting can be achieved..

Following success with its unique wall installations in Brussels and Hong Kong – a little-known plaster firm **Surfaceform** is now investing £160,000 in a new export drive. An expert in the decorative surfaces market, the company offers high quality bespoke wall, floor and surface finishes using a range of products, including resin, clay, metal leaf, plasters and decorative panels, to architects and interior designers.

Google's European headquarters, **Harrods** department store and the **Butler's Chocolate** cafe in **Dubai** have ordered Surfaceform's products, and higher end commercial and private projects are expected.

Two **Invest NI** grants helped the company over recent years – first with its training costs and technical development, and a second, an R&D grant towards the creation of its modular plaster panels.

Aaron McKeown, founder of Surfaceform, said: "Over the past six months we have been working with the Marks & Spencer creative team to produce bespoke commissions using our decorative plaster panels. The installations appear in **M&S'** Flagship store in **Brussels** at the **Toisson d'Or** shopping complex on Gulden Vlieslaan and also in Times Square, one of **Hong Kong's** largest shopping malls."

The County Tyrone business is keen to continue its success. Mr McKeown said "Our aim is to double our sales outside Northern Ireland by 2017, so we are taking a targeted approach to market development, and target new business further afield in the US and UAE."

Damian McAuley, Invest NI's director of Advanced Engineering and Construction, said: "This is a strategic investment by Surfaceform, aimed at building upon the growing awareness of the company among current and prospective customers.

Contact: www.surfaceform.com

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Trio of UK firms work on anti-UAV device that ‘freezes it in mid air’

The Anti-UAV Defence System (Auds) is being developed by **Blighter Surveillance Systems**, **Chess Dynamics**, and **Enterprise Control Systems**, and works by transmitting a radio signal at a drone that then jams the system, causing unresponsiveness.

“There are a number of frequency bands that are used by all of the manufacturers,” **Paul Taylor** of Enterprise Control Systems said “There’s quite a lot of radio power [directed] on to the UAV – so much so that it can only hear our Auds signal.”

It’s a similar principle to cell phone blockers, which flood the frequencies used by phones to transmit calls, rendering them temporarily useless for communicating. Hobbyists flying drones into restricted airspace, such as airports, is becoming more and more of a problem. The US **Federal Aviation Authority** (FAA) is receiving over 100 reports per day from pilots of drones within a five-mile radius of their aircraft.

There are also military applications for the Auds technology being developed. As drones become a much larger fixture in warfare, efforts to develop the ability to render them useless are growing. The **US Army** is developing a system to fire projectiles at drones to damage them. **Boeing** has also developed a compact laser system that can destroy a drone in a matter of seconds.

Contact: www.enterprisecontrol.co.uk

Bio Nano Consulting Ltd releases testing device for kidney disease

Developed by engineers in London, the £10 device can be used at home and could revolutionise kidney disease care in the UK, which currently costs the **NHS** over £1.4 billion – more than breast, lung, colon and skin cancer combined.

Created by **Bio Nano Consulting**, the device – called quantitative electrochemical lateral flow assay (**QELFA**) – uses nanoparticles to test the patient’s urine giving results in seconds and is linked to their surgery via mobile technology so doctors can track how the disease is developing.

The medical device that combines nanotechnology with a pregnancy tester could help diagnose and treat the 1 million people in the UK who don’t know they have kidney disease, according to experts at the **Institution of Mechanical Engineers**.

Its new report highlights the potential for nanotechnology. Report author **Dr Helen Meese**, Head of Materials at the Institution of Mechanical Engineers, said: “Nanotechnology could revolutionise the way we live our lives. But despite its 40 years in the public domain, the nanotechnology industry is still failing to engage with society in an open and clear way, and governments continue to lack impetus in committing to international regulation.

“The QELFA device is a brilliant example of what’s possible. Using an old technology such as a pregnancy tester and combining it with nanotechnology, you have a device that could not only diagnose the million people in the UK who are unaware they have kidney disease, but also help doctors effectively monitor those undergoing treatment. It could also save the NHS millions of pounds a year.

“But although the UK has been at the forefront of nanotechnology development, we still lag behind in its commercialisation and many people are still unsure of its potential. We must change this.”

Contact: www.bio-nano-consulting.com

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Oxford Biotrans seeks to commercialise novel flavour compounds

The **University of Oxford** spinout is working a natural grapefruit flavour and fragrance compound. The company is pioneering the commercialisation of biocatalytic processes for the production of high value specialty chemicals, based on its patented enzyme technology.

Its first product is a low-cost, natural grade nootkatone, the flavour and scent of grapefruit. **Nootkatone**, used in citrus soft drinks, confectionary and perfumes, is one of the most challenging ingredients to access in the world and costs around the same as beluga caviar.

This autumn it completed a multimillion-pound funding round. **Imperial Innovations** Group joined a £2.5m Series A round – having first invested in Oxford Biotrans in 2013. It had made a seed investment of £600,000 in the company, alongside the University of Oxford.

Imperial Innovations has now committed £1.25m to the round alongside existing investors **IP Group** and the University of Oxford, with new investors Oxford Innovations and Technology EIS fund and **De Monchy Aromatics** also participating. Imperial Innovations now holds a 41 per cent stake in the company.

Oxford Biotrans said it has already identified several further high-value flavour product targets for the next phase of its development and plans to develop further scalable, ‘green’, and economically attractive enzymatic processes for production of these new targets. Work will also commence to explore targets in other market segments.

Chief executive **Jason King** said: “With this new investment we shall establish purpose built facilities and build a high quality team, the first key members of which are already lined up to come on board. With these resources we shall deliver more novel processes more quickly and pursue a more aggressive and comprehensive monetisation of our technology’s full potential.”

Contact: www.oxfordbiotrans.com

SME NEWS – BIOTECH, PHARMA & MEDICAL SCIENCES

Dundee’s Vascular Flow Technologies Ltd pioneers two synthetic grafts

Vascular Flow’s novel technology was developed from **Ninewells Hospital**, a teaching hospital in **Dundee**, Scotland, by three leading physicians, **Professor Peter Stonebridge**, following his return from Harvard, **Dr John Dick** and **Professor Graeme Houston**.

First product was launched in late 2008 and a second product in June 2010. In September 2015 it won funding through **EU programme Horizon 2020** to develop a special design for an innovative new endovascular device for the medical sector.

Their two grafts – Spiral Flow peripheral bypass graft and an arteriovenous access graft for haemodialysis. CTO **Craig Dunlop** said “These improve the performance of the medical devices. Vascular Flow grafts are the only grafts proven to recreate spiral laminar flow, the body’s natural blood flow pattern, improving graft patency and helping to prevent disease progression resulting in better outcomes for the surgeon, care-giver and patient. It cuts turbulence – which is the main cause of stent failure.”

Contact: www.vascular-flow.com

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Cambridge Design Partnership develops respiratory rate monitor – a nose clip?

The 'First Response Monitor' is designed to help medics monitor both heart rate and respiratory rate. Respiratory rate is often neglected by automated monitoring systems and has been described as the 'forgotten bio-sign', as many existing wearable monitors focus on heart rate alone and those that do measure respiratory rate have low accuracy or are difficult to use in an emergency situation.

James Baker, Partner, Cambridge Design Partnership said: "We're always looking for ways to find a solution to a clear, unmet need. With the First Response Monitor we've combined our expertise in wearable connected devices with our extensive medical experience to develop a technology for effectively measuring breathing and heart rate. The monitor can help save lives in a variety of environments and we're really keen to speak to partners about developing the potential applications further."

Accurate monitoring of respiratory rate, when combined with other parameters – such as heart rate and body temperature – can indicate life-threatening conditions such as sepsis.

In designing the new compact device, **Cambridge Design Partnership** interviewed a range of army medics and they identified the need for a low-cost device to bridge the gap between manual methods of vital signs measurement – which can be laborious and challenging amidst the noise and stress of a disaster or on the front line – and more expensive patient monitoring systems.

The small device clips onto a patient's nose and monitors breathing rate and heart rate, giving 'at a glance' indication of both parameters, and this data is added to a trends graph showing how these measurements have changed over time. This enables the medic to focus their efforts on providing care rather than taking measurements but also enables the care giver to understand how the patient's condition has changed over time.

The lightweight, robust and low-cost wearable biometric device not only monitors patients but collects and transmits data in real-time, enabling the medic to care for a greater number of casualties, providing more effective casualty triage to deliver improved patient outcomes.

The data can then be transmitted using **Bluetooth** low energy to a smartphone app or tablet, enabling other data analyses such as multiple patient triage or situational awareness across the group.

Contact: www.cambridge-design.co.uk

Skin Analytics Ltd developed novel dermoscope attachment for skin diagnoses

In 2014 healthtech start-up Skin Analytics won Oslo Innovation Week's 100 Pitches competition. Neil Daly, co-founder and director of Skin Analytics, progressed through preliminary rounds eventually making it to the semi-finals and ultimately taking the title of 'best start-up company' and the grand prize of £21,000.

Compatible with all devices, its dermoscope can take clinical-quality images of its user's moles. This is important as increasing numbers are dying from skin cancer, but most deaths can have been prevented. It hits young people more than the elderly. Stage 1 survival, cutting it out, is near 100%; but after five years, survival rates fall rapidly, Stage 4, less than 25%.

Combined with computer vision technology, the app is allowing medical professionals to instantly diagnose moles as cases of melanoma all from the comfort of the consumer's home. The patented technology is an example of utilising smart devices to tackle the easy-to-treat, but often slow-to-diagnose disease.

Contact: <http://skin-analytics.com/tour>

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Pharma manufacturer Quantum Pharma plc agrees major healthcare contract

Following a competitive tender process, Quantum subsidiary **Biodose Services** have been awarded an 18 month contract with Yorkshire and Humber NHS Pharmaceutical Purchasing Consortium (**YHPPC**), with an option to extend for a further two years by mutual consent.

A key division for the Durham-based company, Biodose Services provides pre-prepared medication regimes to care homes and delivery of medication to the home.

This contract is to supply nearly 3,000 patients with medicines including antiretrovirals, anti-tuberculosis medication, medicines for cystic fibrosis, and oral chemotherapy medication, which will require 9,500 deliveries to individuals per annum.

Biodose Services' expects to commence delivery in Q4 of 2015, and will reach full capacity within six months. This contract marks a continuation of the progress seen by Biodose Services in the last year, following a contract agreed in June 2015 with The **Newcastle upon Tyne Hospitals NHS Foundation Trust** to supply arthritis medication to a number of patients, as well as operating the **Stork Facility Service**, providing homecare services to 1,200 patients (both private and NHS) per month.

Quantum CEO **Andrew Scaife** said: "This contract shows the strength of the Biodose Services offering, which along with our Biodose devices, aims to not only reduce the burden placed on the NHS by medication non-compliance, but also, allow patients to remain within a familiar environment, rather than spending unnecessary time in hospital."

Contact: www.quantumpharmagroup.com

Oxford spinout Perspectum Diagnostics makes 'steady progress'

Its **LiverMultiScan** software assists clinicians evaluate a liver accurately because it can provide a map of the whole liver, showing specific regions of disease. It develops software which can be added to MRI scanners to determine whether a person is at risk of liver disease.

In 2013 it had been given a £1.2m grant from **Innovate UK** to allow it to recruit staff and start large-scale clinical trials at specialist liver centres. It is now seeking funding for a major expansion.

Professor Stefan Neubauer is clinical director of cardiovascular medicine at **the Oxford Centre for Clinical Magnetic Resonance Research**. He is a world-leading imaging scientist with 25 years' of experience in the field and a Senior Clinician in General Medicine and Cardiology. He was the recipient of the 2010 European Magnetic Resonance Award and the 2013 Society for Cardiovascular Magnetic Resonance Gold Medal, and has pioneered the development and implementation of many cutting-edge MRI techniques in medicine.

Chairman is **Professor Sir Michael Brady**, professor of oncological imaging at Oxford, having retired as Professor of Information Engineering. Apart from his research in medical imaging, he is a serial entrepreneur, having founded **Mirada Solutions, Guidance, Matakina, and Mirada Medical**. He was a NED of **Dexela Ltd**. He is chairman of **Acuitas Medical Ltd, IRISS Medical Ltd, Colwiz Ltd**, and is deputy chairman of **Oxford Instruments plc**. As well as his role as chairman, Mike leads the image analysis team.

Contact: www.perspectum-diagnostics.com

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Imperial Innovations keeps going with biopharma firm Kesios Therapeutics Ltd

Based at the **Imperial College Incubator** in the Imperial College London complex, Kesios Therapeutics' academic founder is leading research for new cancer drug to begin trials in multiple myeloma patients.

Back in October 2014 **Imperial Innovations Group plc** completed a seed investment of £1.85 million in its oncology drug discovery company, Kesios Therapeutics. It is developing novel therapeutics for the treatment of multiple myeloma and other blood-related cancers. The company has been created to commercialise research led by **Professor Guido Franzoso**, from the Department of Medicine at Imperial College.

Professor Franzoso and his team have identified a novel drug target within a pathway that appears to be critical in promoting cancer cell survival in certain white blood cells of patients with multiple myeloma and other malignancies.

Kesios is developing novel drug candidates that disrupt this target and demonstrate the potential to specifically and selectively kill cancer cells, without causing toxicity to normal cells.

Innovations has now invested an aggregate of £1.85 million in Kesios and holds a 48% stake in the company. Initial seed funding from Innovations has been used to establish the business and bring in a strong leadership team, including the appointment of **Alain Maïore**, as CEO. Alain has more than 25 years' experience in the drug development industry and has held senior management roles within biotechnology businesses across Europe, including Evotec and CEREP. Most recently, Alain was a founding partner of Kurma Biofund, a life sciences Venture Capital fund with over €140m under management. He has also previously been Chairman of Erytech Pharma, Vice-Chairman of EyeGate Pharmaceuticals.

Professor Franzoso and his team at Imperial College London have separately received a **Biomedical Catalyst** grant from the **Medical Research Council (MRC)** up to the value of £3.9m, in order to validate the modality and efficacy of this novel drug target through the development of a distinct drug candidate to clinical proof of concept in multiple myeloma.

Contact: www.kesios.com

In 2015 Teesside University spinout TeeGene Biotech wins more awards

First it was shortlisted in the Best Business Start-Up category of the awards. **Teegene Biotech** is developing next generation biosurfactants and bioemulsifiers. It has come up with a way to create biosurfactants from strains of bacteria that act like soap and help to emulsify a variety of liquids. These can be manufactured in a lab and are said to be fully biodegradable, with minimal impact on the environment.

They also have anti-microbial and anti-ageing properties, making them suitable for cosmetic products and biotherapeutics. Director **Dr Pattanathu Rahman**, a senior lecturer in process engineering and biotechnology at **Teesside University**, said: "Most people consider soap to be an effective means of removing bacteria from their skin. However, we have flipped this concept on its head by discovering a way to create soap from bacteria.

"It's a very exciting technology with tremendous potential for applications in a range of industries. Other uses include oil recovery, reducing pollution and food processing.

"We are delighted to have been shortlisted in these distinguished awards and to have been given recognition for our progress so far."

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Dr Rahman added “The levels of purity needed for biosurfactants in the industries in which they’re used is extremely high. Because of this, they can be very expensive. However, the methods we have of producing them, make it much more economical and cost efficient. It’s a very exciting technology with tremendous potential for applications in a range of industries.” The biosurfactant market in Europe is already worth more than £500m and is expected to grow to £1.35bn by 2030.

Earlier in 2015, Teegene Biotech’s method of processing biosurfactants led to the company reaching the finals of the KTN organised Industrial Biotechnology Leadership Forum (IBLF) awards.

TeeGene Biotech has since been shortlisted in the **IChemE Global Awards 2015**, under the ‘Best Business Start-Up’ category, which celebrate excellence, innovation and achievement in the chemical, process and biochemical industries. TeeGene Biotech have come up with a way to create biosurfactants from strains of bacteria that act like soap and help to emulsify a variety of liquids.

These can be manufactured in a lab and are said to be fully biodegradable, with minimal impact on the environment. They also have anti-microbial and anti-ageing properties, making them suitable for cosmetic products and biotherapeutics.

Contact: www.teegene.co.uk

Cambridge-based XO1 Ltd snapped up by Janssen Pharmaceuticals

Johnson & Johnson’s subsidiary Janssen Pharmaceuticals acquired Cambridge-based **XO1 Ltd**, which was set up in April 2013 with an \$11m investment from Index Ventures, to develop the anti-thrombin antibody ichorcumab, for an undisclosed sum.

XO1 products, a virtual biopharmaceutical company behind a potentially ground-breaking new antibodies, were initially developed by **Cambridge University Hospitals** and **Cambridge University** with support from Cambridge Enterprise, the university’s commercialization arm.

One is ‘**Ichorcumab**’ – a recombinant human antibody developed to mimic the activity of a human antibody – which appears to produce an anti-coagulated state without predisposition to bleeding.

XO1 chief scientific officer **David Grainger** said “Ichorcumab is one of the most exciting drug candidates out there, with enormous potential to improve clinical outcomes in common cardiovascular diseases.”

Peter DiBattiste, global development head of cardiovascular for Janssen Research & Development, added: “Ichorcumab provides an excellent complement to the Janssen cardiovascular portfolio. Given Janssen’s leadership in the fields of anticoagulation and biologics, we are well positioned to explore the potential of this next generation anticoagulant.”

Contact: www.xo1.co.uk

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Unilever names digital firm Glimr winner of its international Scale Up competition

At the Digital Shoreditch festival in London **Tech City** startup Glimr, whose technology aims to help brands build a one-to-one relationship with consumers using offline data collected from iBeacons, was up against two other finalists: **Little Bird** from the US and **Wobe** from Indonesia.

Its technology will enable Unilever to serve customers targeted ads as they walk around stores selling its products. Glimr was awarded the \$50,000 prize and the opportunity to pilot with the advertising giant. Judges from Unilever, startup accelerator **Collider** and software firm **Kite**, decided it had the most potential to work with Unilever's brands, which include Lynx, Magnum and Surf.

Glimr chief executive **Robert Hedberg** said: "We are hoping to bring an actual understating of who you are as an individual based on what stores you visit and help Unilever understand their target audience in a much better way – so for the first time bridging the offline and online gap."

In addition to the prize money and the pilot, Glimr will also be given the opportunity to pitch potential customers and investors at the **Cannes Lion Innovation Festival** – which claims to be the world's biggest annual awards show and festival for professionals in the creative communications industry.

It's worth noting that UK retailer **John Lewis** is also working with a startup focusing on how beacon technology can be used to sell and promote products.

Jan Harley, investment director at Unilever Ventures and a judge on the panel said: "Glimr is bridging the physical and non-physical world big, which is an area where big companies like Unilever struggle. We chose the winner based on the team, the technology and the area they're working in."

Jeremy Basset, the director of Unilever Foundry, said: "They [Glimr] enable us to connect with consumers through beacon technology in more of a pull way than a push way, which I think is unique for beacons. I think in that way it has a lot of relevance to Unilever, not only in the UK but in many countries around the world."

Basset said that Glimr's technology has the potential to be used across several Unilever brands but the strongest use case is probably in the company's out-of-home business, which includes ice creams and refreshments.

Contact: www.glimr.io

Gaist Solutions wins KTP accolade for project with the University of York

A partnership between York University and Gaist Solutions Ltd – who are experts in highway asset management – is helping to extend the life of the UK's public infrastructure – was recognised as "outstanding" by the government. It is an accolade afforded to only 5% of all KTPs.

Innovate UK awarded the pair's KTP a certificate of excellence for a project that uses sophisticated deterioration and financial modelling techniques to help local authorities to ensure more effective maintenance of roads, pavements, and other publicly owned assets such as street furniture, parkland and drainage.

Researchers from the **York Centre for Complex Systems Analysis** (YCCSA) working with specialists from Gaist Solutions Ltd developed computerised information management and decision support systems,

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they use geo-located condition data to achieve more effective strategic and operational planning of public assets.

Combining condition and maintenance data from a wide range of sources and using an unprecedented level of accuracy and a real-time update mechanism, the system helps the effective targeting of scarce resources.

Conventional methodology, data interpretation and national reporting in UK road surveying led to 'short-termism' in maintenance and financial planning. The York/Gaist KTP system simulates the long term effects (25 years +) of any particular maintenance strategy under consideration by a local authority and also calculates the optimal long-term maintenance regime that will cost the least to deliver and return the best network performance.

Gaist's MD **Steve Birdsall** said "I would like to thank **Dr Stephen Remde** and **Professor Peter Cowling** who produced outputs of the highest standards. I am pleased to say we are involved with another KTP with the same team which is also producing exciting outputs."

Contact: www.gaist.co.uk

Manchester mobile app firm Degree 53 starts work with Business Growth Hub

It claims to be an 'omni-channel' digital strategy, design and build agency with a heritage in designing and developing for mobile devices. In 2015 the Manchester-based digital agency **Degree 53** began working with **Business Growth Hub** to help the company diversify into new markets. Best of all, the company, which is backed by **Betfred** founder **Fred Done**, started life in September 2013 and recorded turnover of £2.8m in the 12 months to 31 March 2015.

Degree 53, based in The Sharp Project, Newton Heath, delivered underlying pre-tax profits of £204,000, which has led to it accelerating a recruitment drive that has seen headcount grow to more than 50, said its MD **Andrew Daniels**.

It specialises in the design and development of mobile apps and websites for clients primarily in the gambling industry, with big names including **Betfred**, **Kerching**, **Totesport** and **888**.

The business is now looking to enter new markets and extend its product offering to clients operating in the financial services and sports club sectors, and has already secured a contract with the **Co-op Bank** in recent months.

Contact: www.degree53.com

TVSquared enables clients to 'understand the ROI of TV in near-real time'

Founded in 2012, **TVSquared** helps clients bring insight into the performance of TV advertising campaigns and increasing volumes of data. Agencies, brand advertisers and direct response advertisers search for accurate data when it comes to understanding the true value of TV and attribution. With a background in analytics and big data, the team at TVSquared created the **ADvantage** platform to enable clients to understand the ROI of TV in near-real time – and influence a campaign in-flight to drive increased sales.

Calum Smeaton founded TVSquared in 2012 with co-founder **Hew Bruce-Gardyne**. Before TVSquared, Calum was the CEO of **Sumerian**, a provider of big data analytics for retail and investment banks. He was also the co-founder and CTO of **Orbital Software**, which was listed on the London Stock Exchange and merged with **Sopheon plc** in 2001.

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In 2015 its latest customer **FanDuel**, a leader in one-day fantasy sport leagues. FanDuel's CMO, **Mark Irace** said: "TVSquared is leveraging the most effective media-buying strategy to drive sports fans to FanDuel's one-day fantasy leagues. TVSquared's platform has given us spot-by-spot response data from local network up to national cable level to accurately measure conversion."

Based in **Edinburgh**, with offices in New York and California, TV Squared is privately owned. Mr Bruce-Gardyne leads TVSquared's technology development and roadmap. Hew has spent the majority of his career finding new and innovative ways of making data analytics transformative for businesses that span industries.

Contact: www.tvsquared.com

Start-up Trillenum demonstrates virtual reality shopping, dubbed 'V-commerce'

The company is beginning to create virtual stores for brands wanting to revolutionise the shopping experience, one of which is the UK's biggest independent online fashion retailer **ASOS**, who hold a 9% stake in the company.

Lead by CEO **Hrvoje Prpic**, Trillenum is taking advantage of the current heightened interest in virtual reality, in particular aided by the release of VR headsets **Oculus Rift**, **Sony Morpheus**, **Google Cardboard**, **Samsung Gear VR**, and **HTC Vive** – all of which Trillenum is compatible with. Trillenum is working on a demo for ASOS, and hope to achieve at least half of the site's '88 million monthly visitors' trying out the virtual service.

It seems that the convenience of online shopping and the practicality of real world shops are close to merging. Beyond the possibility for shoppers to move around a virtual store and see items in 360 degrees, **Trillenum** has also added a social aspect with a chat feature, allowing consumers to ask for friends' opinions on items before purchasing.

The company stated: "We've been working on the idea of uniting 3D gaming and online shopping for a long time now. Knowing how people are fed up with online buying in catalogue-style stores, we wanted to create a real-time shopping experience, and let them browse through shops in the way they do it in real life. There is also a social component as twenty-somethings want to shop with their friends. They see shopping as a social adventure rather than a task to be done."

So far, the company raised £335,000 via the crowdfunding platform Seedrs, with the help of tennis star **Andy Murray** and several angel investors. With a forecasted '£71.2 billion to be made via online shopping between 2015 and 2020' according to research company **Mintel**, developing online shopping innovations, including virtual reality, seems timely.

Contact: www.trillenum.com

UWE Innovation4Growth (I4G) programme calls for SME applicants

SMEs across the **West of England** are being encouraged to apply to a £4m fund that aims to help them develop new products and services and create jobs. The UWE Innovation4Growth (I4G) programme part funds research and development projects with grants of between £25,000 and £150,000 to cover up to 35% of the project's total cost.

Financed through the **Regional Growth Fund**, the I4G programme aims to support businesses to create new, and safeguard existing, jobs through the development of innovative products, technologies, processes and services.

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One of the businesses to benefit from I4G in 2015 was Bristol-based games developer **Opposable Games**, which has developed *Salvaged*, a real-time tactical sci-fi action game.

MD **Ben Trehella** said: “Our I4G grant has enabled us to take on four new members of staff and to protect the jobs of five existing colleagues. It is really exciting to see the intended results of the funded project coming to fruition – to be launching the game demo and to be preparing to take the full version into the marketplace.”

Another I4G grant recipient, Matthew Lloyd, MD at award-winning Bristol lighting manufacturer **Global Design Solutions**, said: “The I4G Team was very engaged with SMEs and with the challenges that faced us as a growing company.”

Contact: innovation4growth@uwe.ac.uk

FINTECH SMEs

The first ‘fintech’ successes in the insurance industry start to emerge

The London insurance industry is starting to give some SME success stories after 2013.

Slowly but surely, companies such as **The Floop**, **BoughtByMany** and **QuanTemplate** are demonstrating that technology can validly and successfully disrupt the insurance industry. The insurance industry, typically old-fashioned in its practice, is heading for an unprecedented overhaul as the emerging influence of social media takes hold.

For example, **QuanTemplate** helps re-insurers to perform complex analytics, to share insights across their organisation and to become truly data-driven by using underwriting, claims and reserving data to drive financial performance.

Against a backdrop of rapid technological change, record low fixed-income yields and perpetually softening insurance rates, it’s no wonder that many insurance businesses are considering a change in strategy. Barely a week goes by without some new report warning of threats to traditional insurance business models and competitive pressures on the established insurance market hubs.

QuanTemplate are proud to be supported by **Anthemis Group**, the leading digital financial services investment and advisory firm. CEO **Adrian Rands** co-founded QuanTemplate with his friend **Marek Nelken** in 2012, having spent most of his career as a Lloyd’s reinsurance broker. At **Howden**, where he worked from 2004, he established a reinsurance treaty desk specialising in emerging markets, and developed a suite of stochastic loss-forecasting models.

Adrian left Howden in 2010 to set up an equities trading strategy with Marek, establishing a working relationship that would come to full fruition with QuanTemplate. Adrian oversees all aspects of the QuanTemplate product and manages client relations across the business.

CIO Marek Nelken, a specialist in high-performance databases, is applying his advanced computational skills far and wide. At **Oxford University**, he specialised in artificial intelligence and aeronautics.

Contact: www.quantemplate.com

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London-based ad-tech startup Wayve wins £300,000 in seed funding

Wayve is the latest startup to receive seed capital from **Mercia Fund Management's** newest hybrid SEIS & EIS fund. Wayve, a 360 degree advertising platform, received a £300,000 investment which will be used to implement and extend its expansion strategy.

Founded by **Jamie Evans-Parker**, a leading computer science and digital marketing specialist, Wayve provides an “end-to-end” solution to simplify advertising in the multi-platform era. The business is supported by ad tech heavyweights including **James Booth**, CEO of **Scoota** and founder of **Tangozebra**, which was sold to **DoubleClick/Google**; and **Stuart Colman**, International VP at **AudienceScience** and founder of **Colman Media**.

Wayve provides a solution to the issues of cross-platform advertising, allowing creative advertisements to be distributed seamlessly across multiple devices and screen sizes. The platform empowers creative agencies, publishers and media agencies to create, distribute and monitor campaigns, utilising its product suite that includes wayve.builder, wayve.trafficker and ad.aptive.

By offering a simplified media buying process, Wayve allows effective multi-platform ad placements and audience monetisation, alongside the tools to develop engaging and creative HTML5 ads. The platform is being used by leading firms including **The Financial Times**, **Bloomberg**, **Business Insider**, **Wall Street Journal** and **News UK**.

Contact: www.wayveapp.com

Media accelerator MediaCityUK invests £25,000 into five promising start-ups

After undergoing a 75-day programme to improve product development, management and marketing skills, the five fledgling firms are on the lookout for second round investment.

Representatives from **Shout**, **Follogro**, **NOVP**, **Uproar!** and **U Music TV** presented their business plans to potential investors during a demo day at the newly opened **University Technical College at Salford Quays**.

Launched in Edinburgh in 2012, by **Danny Meaney**, Uproar! chose the North West for its second base, said MD **Denise McQuaid**. The businesses include an online platform for musicians, a company dedicated to growing your Twitter following and a remote control robot unit controlled over the internet.

Uproar! was launched to teach musicians how to make a business out of what they love. It consists of two core platforms, a learning suite of business content and a tools platform aimed at helping them monetise their music.

Jack Thorogood of NOVP said his business idea evolved during his time at UP to include the much anticipated ‘Nobot’. He said: “Our focus on outsourcing has led us to fast-track the development of our Nobot unit which brings remote working to geographically tied tasks.

Startup **Follogro** claims it can save the creative industries millions of hours a year. The **Twitter** growing platform will initially be targeted at PR firms according to co-founder **Dan Sodergren**.

He said: “It is predicted that using Follogro could save more than an hour a day. Which when you think there are 50,000 PR people in the UK alone – could save the creative industries millions of hours a year.”

Contact: www.mediacityuk.co.uk

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BoughtByMany Ltd labelled ‘smart new way to buy insurance’

Nominated Fintech Innovation of the Year 2015 the company is beginning to make its mark in the insurance industry – typically old-fashioned in its practice. Helping to drive the revolution is financial services expert, **Steven Mendel**. The former head of wealth management for **Close Brothers Group**, Mr Mendel is now chief executive and co-founder of Bought By Many.

The firm helps communities use their collective power to buy insurance on better terms than they could get as individuals. Examples of Bought By Many insurance buying groups include: parents of children who play rugby; plumbers starting their own business; horse riding insurance for children, and residents of **Yeovil**, Somerset. Bought By Many recently secured a cut of 12.5 per cent from **Legal & General’s** “Extra or Essentials” home insurance for people living in postcodes, BA20 and BA21.

Mr Mendel, 45, said “The insurance industry is completely overdue a major overhaul. “It has never had any innovation, with two notable exceptions: about 20 years ago, you were able to buy your insurance not just from brokers but from companies such as **Direct Line**; and 10 years ago, aggregates came along and took on the direct businesses, with the growth of confused.com and moneysupermarket.com, but actually that hasn’t done very much for what consumers buy or for the prices.

“It hasn’t done anything in terms of what consumers buy. The product is exactly the same. For instance, your car insurance or contents insurance is exactly the same as what it would have been 25 years ago. It is unchanged.” He adds: “There are very few businesses implementing change in financial businesses, period, and especially when it comes to insurance.

The site struck its first “deal” at the end of 2014, securing personal accident insurance for rugby-playing children. Others have followed – the site’s fastest-growing group is travel insurance for those with diabetes, which, set up in December 2012, now has over 250 members. There are plans to roll out several more such as a travel insurance group for over 65s. So, how has the concept been received by the insurance industry? “Slightly shockingly, they love it,” says Mr Mendel.

Contact: <https://boughtbymany.com>

UNIVERSITY NEWS

University of Southampton selected to help operate a new UAV centre in the US

The only UK partner for the new **National Center of Excellence for Unmanned Aircraft Systems** (COE UAS) in the US will be Southampton. “Our involvement in the ASSURE team reflects our global reputation for unmanned systems research and development,” said **Professor Jim Scanlan**, who is leading the Southampton team.

“We have the capabilities and resources to help address the demands of this challenging technology and launch a new era of commercial unmanned aircraft research, development and integration.” The COE will be able to begin research by September 2015 and be fully operational and engaged in a robust research agenda by January 2016.

The main operator, the **Alliance for System Safety of UAS through Research Excellence** (ASSURE), was chosen by the **Federal Aviation Administration** (FAA) to run the centre. It is intended to “help to maximize the potential of commercial unmanned systems and address both government and commercial UAS challenges”, in Southampton’s words.

It involves a coalition of universities from three countries and more than 100 government and industry

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partners and will focus on commercial unmanned aircraft research, and how it could develop and be integrated into US airspace.

Research areas are expected to include: detect and avoid technology; low-altitude operations safety; control and communications; spectrum management; human factors; compatibility with air traffic control operations; and training and certification of UAS pilots and other crew members, in addition to other areas.

Contact: www.southampton.ac.uk/engineering

Brunel wins sizeable award to help innovations achieve commercialisation

A £15 million government award to Brunel University London is set to unlock a further £62m of private sector support to span the 'valley of death' that currently prevents lab-based innovations becoming casting industry practice.

The funding will allow a second phase of the new **Advanced Metal Casting Centre (AMCC)** to scale-up processes and innovations that work in the laboratory, but fail to achieve their potential on the factory floor.

Brunel's **Prof Zhongyun Fan's** devised a proposal aims to speed up industrial implementation by providing evidence of successful transition to the demands of factory-scale production.

A Brunel University statement said: "The size of the new award underlines how important cutting edge casting technology is to the competitive position of every sector of UK manufacturing across automotive, aerospace, defence, energy and general engineering."

The funding will complete the **AMCC's** range of factory-level metal casting/processing facilities and establish critical supporting research facilities for developing advanced metallic materials, as well as underpin component performance testing and create a suite for process modelling and simulation.

The new centre will conduct research on nucleation, liquid metal engineering, the development of advanced materials and more efficient casting/processing technologies.

The long-term intention is to establish a **National Metals Research Park** on Brunel's campus.

Contact: www.brunel.ac.uk

Orthopaedics firm Orthonika formed using tech from Imperial and Sierra MedTech

In the autumn of 2015 **Orthonika** was developing a full replacement for damaged knee menisci. The technology has been developed to replicate the natural meniscus a fibro-cartilaginous structure that supports the mechanical integrity of the knee and helps to distribute impact.

Design work began in 2009 and was done in collaboration with **Sierra MedTech**, benefiting from the company's expertise in medically safe materials. Knee replacement surgeries are one of the common orthopaedic procedures undertaken today. Meniscal tearing, which occurs most commonly in athletes and the elderly, often leads to severe pain, restricted movement, and osteoarthritis.

Current treatment options are inefficient and can lead to further damage. Orthonika's offering, therefore, addresses a large gap in the market. Meniscus injuries are extremely common and can be very debilitating.

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A team of Imperial scientists, led by **Professors Andrew Amis** (Mechanical Engineering) and **Justin Cobb** (Surgery & Cancer) have collaborated with Sierra MedTech to design a full substitution system for the knee meniscus. To do this, the scientists studied the structure and function of healthy menisci and applied unique manufacturing technologies to replicate the native structure and organisation of the tissue.

Prof Andrew Amis said “The meniscus has an extremely complex structure and is subject to high stresses. It needs to be both elastic and strong, capable of adapting to an individual’s movement. Our team has studied the structure – we have also designed a surgical insertion procedure and a secure means of fixation to the bone.”

Design work began in 2009 and has gone through several prototypes. Orthonika was formed in order to combine design and development expertise to further the advancement of the meniscus substitute into a product and obtain regulatory approval and clinical application.

Contact: <http://orthonika.com>

University of Sheffield opens £3m advanced nuclear materials research facility

In September 2015 it official opened the facility, **Materials for Innovative Disposition from Advanced Separations** (MIDAS), established as part of a national network of facilities to deliver the UK spent nuclear fuel research programme.

MIDAS is jointly funded by the University and the Department of Energy and Climate Change (**DECC**). The centre will be developing new technologies and robust, efficient and environmentally sound strategies for the safe treatment and disposal of radioactive wastes.

More than 120 research experts were given a tour of the new facility and a demonstration of the state-of-the-art laboratory equipment. Visitors included representatives from the **Nuclear Decommissioning Forum – Japan, Idaho National Laboratory – USA**, and **Areva – France**, as well as the Foreign & Commonwealth Office.

Facility director **Professor Neil Hyatt** said: “Our mission with this facility is to provide a high quality environment for research on radioactive waste and disposal, supported by the world-class expertise we have here in the **Department of Materials Science and Engineering** at Sheffield. We are already working in collaboration with leading academics in the field and industrial users on a range of national and international research projects.” Over £2.6m of new funding has been secured for project research at the facility, including collaborations with **Pohang University** in South Korea.

Contact: www.sheffield.ac.uk/faculty/engineering

Queen’s Belfast spinout EventMAP creates 10 highly skilled jobs in the city

For better planning and usage of institutional space, event scheduling and exam timetabling, EventMAP offer consultancy, services and software. Queen’s University spinout company EventMAP has developed a range of software products and services that optimise timetabling and resource management within universities, and has already enabled many large institutions to realise significant annual financial savings. The business has been developed by **Dr Barry McCollum** and **Dr Paul McMullan** from QUB’s **Department of Computer Science**, in association with a specialist mathematical research group from the **University of Nottingham**. It has recently secured a six figure contract in Oman, supplying its timetabling software to **Sultan Qaboos University**. EventMAP expects sales to grow to around £1 million by 2017.

EventMAP’s CEO, **Dr Barry McCollum** said: “Opportunities are opening up for us not only in the

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education sector but also within many areas of the public sector and in large-scale manufacturing – in fact, we see possibilities for our technology anywhere where very complex organisations can be made more efficient. Recent success in Oman reflects this potential and is an important stepping stone for us in leveraging additional business in the Middle East.”

George McKinney, Invest NI’s Director of Technology & Services, said: “The company’s software and services have been adopted by four of the UK’s Russell Group universities and a further five of the top 100 universities in the world. We are supporting EventMAP in a significant expansion that will create 10 quality jobs and help it to substantially grow sales, primarily in export markets.”

Contact: www.eventmap-uk.com

AND FINALLY...

>> UK motorists’ use of **dash cams** has more than doubled in past 12 months, according to research carried out by the **RAC**. Placing it at the top of this year’s Christmas car tech wish-list, especially as **Insurance Premium Tax** (IPT) will rise to from 6% to 9.5% on 1 November, the results indicate that 63% think insurance companies should encourage the use of dash cams, especially if it guarantees a reduction to the cost of their policy.

>> Canada geese skimming on to the lake at a Dewsbury park could herald a tough winter ahead. The birds were spotted in Dewsbury’s **Crow Nest Park** in recent days. They stayed for about 40 minutes before heading off south. Their arrival coincides with doom and gloom predictions of freezing times ahead – reinforced by the sighting of **Bewick swans** from **Russia** making their ‘earliest ever journey’ to the UK. Escaping bitter conditions elsewhere in Europe, the birds are here unusually early. Huddersfield weather expert **Paul Stevens** said: “The geese are reacting to changes in the weather over Europe. Their presence does not necessarily mean it will be a harsh winter but if this is a pattern setting up for winter a 15% chance of extreme cold could rise to 25% or 30%. We are starting to see this seasonal effect of high pressure dragging colder winds in. If this continues, it could be game on for something unusual.”

>> More than **18,000 motorists fined** for speeding on the **M62** motorway between J18 at Simister Island and J20 at **Rochdale**. Fines totalling £1.8m have been dished out to motorists trapped by speed cameras on one stretch of the M62 in just eight months. It means about 73 drivers are caught every day on that stretch of the M62. Temporary speed restrictions have been in place on a 17-mile stretch of motorway between Sale and Rochdale for nearly a year while a £207m upgrade continues.

>> Sitting is as bad for health as smoking, claim **Queen’s University** researchers. Sitting for long periods of time is linked to increased risk of heart disease, obesity, diabetes, and even early death, and could be just as big a threat to public health, if not more so, than smoking. **Dr Mark Tully**, from the **UKCRC Centre of Excellence for Public Health** at Queen’s, said “Levels of sedentary behaviour increase as we age, which poses a significant threat to the health of our population, especially as **Northern Ireland** is set to face the largest increase in the number of older adults, than other UK countries. One of the biggest threats to health is the amount of time spent sitting. On average people spend over nine hours, or up to 80 per cent of their waking day, sitting down.”

>> **Chiltern Railways** opened the first new rail line between a major British city and **London** on 26th October. The line is the first new rail link between a major British city and London for over 100 years and will bring significant social, economic and environmental benefits to those living and working in Oxfordshire and commuting to London. Tickets between **Oxford Parkway** and **London Marylebone** start from as little £6 and the journey time from Oxford Parkway to London Marylebone will be from under an hour. The new Oxford Parkway to London line is a historic moment for Oxfordshire.

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>> Investing heavily in school computers and classroom technology does *not* improve pupils' performance, states a global study from the **OECD**. The think-tank says frequent use of computers in schools is more likely to be associated with lower results.

The OECD's education director **Andreas Schleicher** says school technology had raised "too many false hopes". **Tom Bennett**, the government's expert on pupil behaviour, said teachers had been "dazzled" by school computers.

The report examines the impact of school technology on international test results, such as the Pisa tests taken in more than 70 countries and tests measuring digital skills. "If you look at the best-performing education systems, such as those in **East Asia**, they've been very cautious about using technology in their classrooms," said Mr Schleicher. "Those students who use tablets and computers very often tend to do worse than those who use them moderately."

Annual global spending on educational technology in schools has been valued at £17.5bn, by technology analysts **Gartner**. In the UK, the spending on technology in schools is £900m. **The British Educational Suppliers Association (BESA)** says schools have £619m in budgets for ICT, with £95m spent on software and digital content. But Mr Schleicher says the "impact on student performance is mixed at best".

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