

ALSO INSIDE**SUPER BOWLED OVER**

vStream's answer to that age old problem of how to productise a tech service

BORDEAUX FOR BUSINESS

A look at one of Europe's leading hubs for aerospace and more

'DOING DIGITAL' OR DIGITAL INNOVATOR?

How to set digital transformation in train and self-diagnose your business

BEYOND BIM

What's next for BIM in building markets?

GROWTH DIAGNOSIS FOR ASIAN HEALTHCARE MARKETS

Asia-Pacific on the prescription list for medtech

THE MARKET

DEALING
WITH
STERLING
FX RISKS
AS BREXIT
DEBATE
HOTS UP



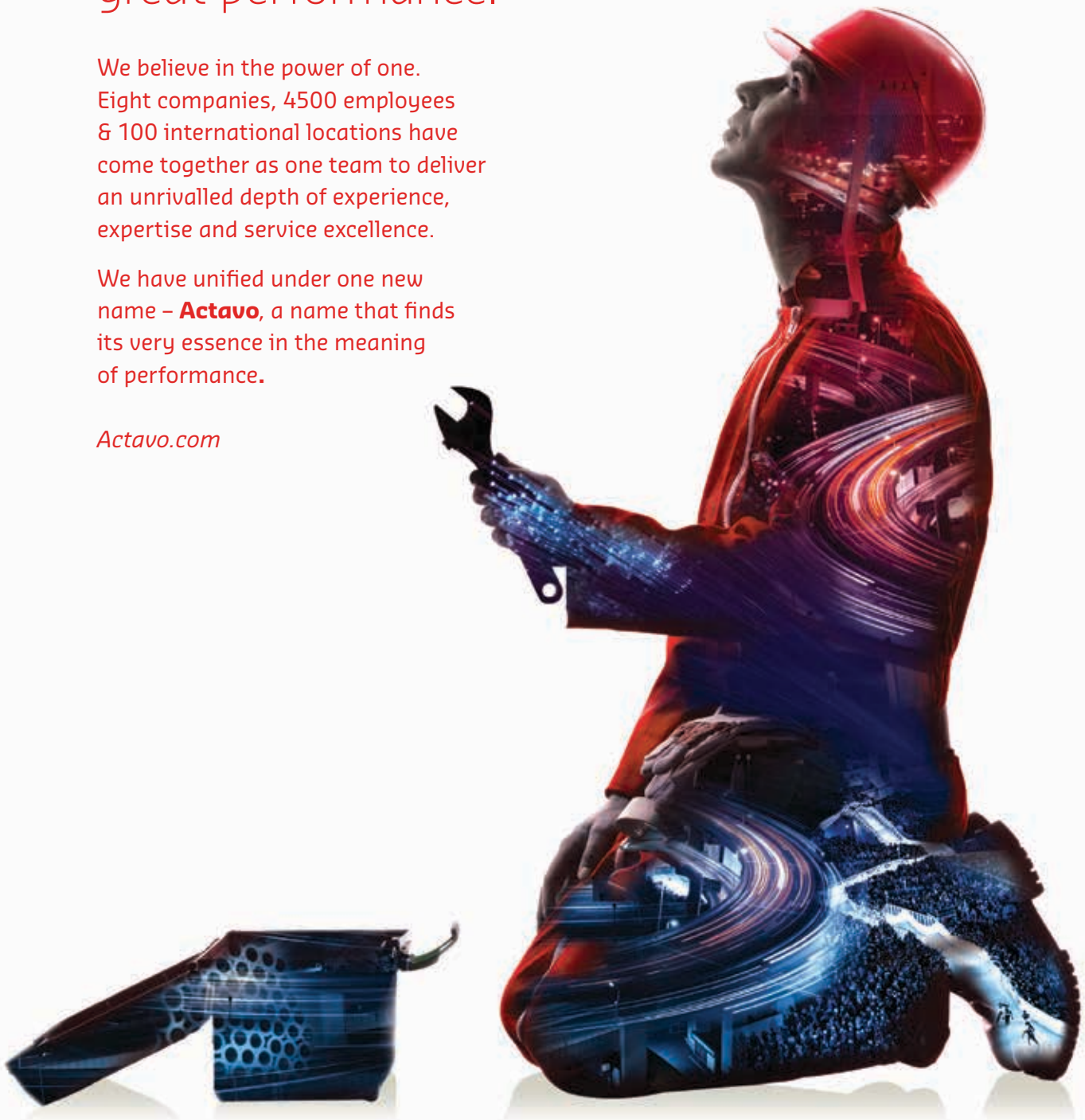


At the heart of great performance.

We believe in the power of one. Eight companies, 4500 employees & 100 international locations have come together as one team to deliver an unrivalled depth of experience, expertise and service excellence.

We have unified under one new name – **Actavo**, a name that finds its very essence in the meaning of performance.

Actavo.com



Contents

THE MARKET

Enterprise Ireland
The Plaza
East Point Business Park
Dublin 3
T: +353 1 727 2954/2000

PUBLICATIONS MANAGER

Duncan Black
E: duncan.black@enterprise-ireland.com

EDITOR

Mary Sweetman
E: mary.sweetman@enterprise-ireland.com

PROOF READER

Mary McCauley

DESIGN & PRODUCTION

Boyle Design Group

PRINTED BY

Turner Print Group

*The Market is sold by subscription
(+353 1 727 2970)*

*Readers may email comments and
suggestions to the.market@enterprise-
ireland.com*

*The views and opinions expressed in
The Market are not necessarily those of
Enterprise Ireland. Published by
Enterprise Ireland Corporate Marketing
Team.*

**www.enterprise-ireland.com/en/
publications**



Enterprise Ireland is funded by the Irish Government and part-financed by the European Union under the National Development Plan 2007-2013.



COVER STORY

013 Is your FX strategy Brexit proof?

Why now is a good time to consider your strategy for managing FX risk

REGIONS AND SECTORS

022 Beyond BIM

What's next for BIM building markets and applications?

027 Growth diagnosis for Asian healthcare markets

Asia-Pacific markets on the prescription list for medtech

PEOPLE AND COMPANIES

010 Bowled over

vStream's answer to that age-old problem of how to productise a tech service

018 Foundations for UK growth

How a start-up has tapped into Enterprise Ireland resources to build a UK customer base

034 Bordeaux for business

A look at one of Europe's leading hubs for aerospace and more

039 Welcome to manufacturing central

Europe's great internal manufacturing migration to Poland, the Czech Republic, Slovakia and beyond

BUSINESS

045 How to embrace the digital transformation

How to set a real digital transformation in train

049 'Doing digital' or digital innovator?

Self-diagnosis test to determine how well your business is positioned

REGULARS

002 Noticeboard

News for and from the export community

052 Gadgetry

Gadgets head into the cloud

056 Good Reading

Books worth reading

058 Market Intelligence

Recently published market research

058 Trade Regulations

Trade regulation and negotiation update

059 Travel News

Flights and travel update

060 City Guide

Kuala Lumpur

Irish company leads with First Zika Virus Antigens

With the World Health Organization (WHO) declaring the Zika virus an international public health emergency this February, Irish company Aalto Bio Reagents has announced the availability of its new Zika virus monoclonal antibodies for diagnostic test manufacturers and researchers globally.

The mosquito-borne Zika virus, which is linked to severe birth defects such as microcephaly in babies whose mothers have been exposed to the virus during pregnancy, is spreading rapidly through the Americas, with the outbreak being documented in 30 countries to date.

While there is no commercially available serology test for Zika virus at present, Aalto Bio Reagents is one of the leaders in supporting development of such assays through supply of its recombinant Zika virus NS1 and Envelope proteins.

Following the overwhelming positive response to these products, Aalto Bio Reagents has developed the first mouse monoclonal antibodies to Zika NS1 protein and Envelope protein and is first to market in offering a unique raw material to fast track the development of Zika diagnostic tests, thus aiding faster diagnosis and better treatment, according to CEO Philip Noone.

The Zika virus was first identified in rhesus monkeys during sylvatic yellow fever surveillance in the Zika Forest in Uganda in 1947 and was later reported in humans in 1952. Following Brazil reporting an outbreak in the city of Bahia in 2014, Aalto Bio Reagents became the first company to launch antigens for use in developing in vitro diagnostics tests at Medica in Germany last November. "The product is exploding right now with the recent outbreak of the previously little known virus," says Aalto Bio Reagents' development adviser at Enterprise Ireland, Ryan Murphy. "This is a great story showcasing Irish ingenuity, being ahead of the curve, and coming through with solutions in a time of need."



CHANELLE FOUNDER AND CEO MICHAEL H. BURKE

Chanelle Pharmaceuticals to double production with €70m investment

Loughrea-based Chanelle Pharmaceuticals, which specialises in generic animal pharmaceutical products, has announced plans to create 175 new jobs over the next five years with an expansion in manufacturing capacity and new investment in R&D. Founded by CEO Michael H. Burke in 1985, the Chanelle Group currently employs 375 people in Ireland, the UK, Jordan and India.

"In the past five years, revenue has grown 100 per cent and employment has increased by over 200 people," Burke said. "Today's investment programme will double production capacity at our Loughrea manufacturing facility to ensure we can meet the global demand for both our market-leading pharmaceuticals and the new products in development."

He added that Chanelle Group will be expanding into new markets, including the United States, Central and South America, with revenues expected to increase by 65 per cent over the next five years.

Kinesis Health Technologies to Participate in NHS Innovation 'Test Beds' Initiative

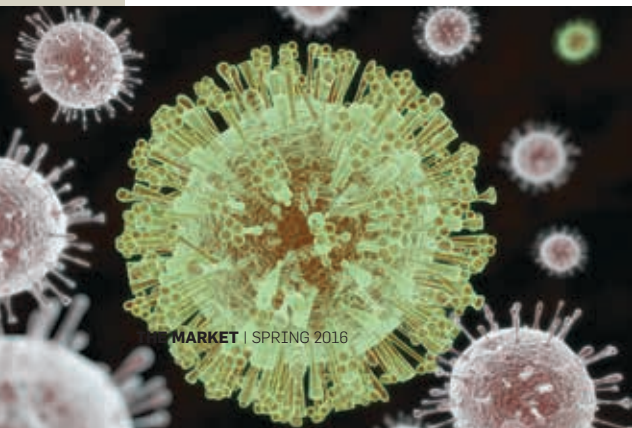
Kinesis Health Technologies has been selected as an industry partner to participate in a new NHS Innovation 'Test Beds' initiative to improve patient care in the UK. This major initiative, to modernise how the NHS delivers care, was launched by Simon Stevens, Chief Executive, NHS England at the World Economic Forum, Davos, in January.

The collaboration between the NHS and innovators such as Verily (formerly Google Life Sciences), IBM, Philips and SMEs such as Kinesis Health Technologies, aim to harness technology to address some of the most complex issues facing patients and the health service in the UK.

Frontline health and care workers in seven 'test bed' areas will pioneer and evaluate the use of novel combinations of interconnected devices such as wearable monitors, data analysis and ways of

working, which will help patients stay well and self-monitor at home. Successful innovations will then be available for other parts of the UK to adopt and adapt to the particular needs of their local populations.

Kinesis Health Technologies has been selected to participate in two of the seven 'test beds'. The company will be deploying its QTUG mobility and falls risk assessment technology at scale in the Care City Health and Care Test Bed in North East London and the Perfect Patient Pathway Test Bed in the Sheffield City Region. The QTUG technology aims to reduce incidences of falls in older adults and combines advanced technology, including body-worn sensors, with the clinical standard Timed Up and Go procedure into a solution that can be used to assess falls risk and mobility impairment in older adults.



Fleming Medical secures US\$1m deal in UAE

When medical equipment and supplier Fleming Medical recently announced a three-year, US\$1m distribution agreement with City Pharmacy Group in the United Arab Emirates (UAE), it marked the culmination of a number of years' investment in the market. One of the UAE's leading medical products and equipment distributors, City Pharmacy Group is part of a larger business with a presence across the Middle East and Africa.

Details of the agreement were announced at Arab Health in Dubai, one of the Middle East's most important annual healthcare events, where Fleming Medical participated under the Enterprise Ireland banner.

Describing the deal as "considerable", Mark Fleming, Managing Director, Fleming

Medical explained that it will give the Limerick company access to the group's extensive network of pharmacy trade business partners. "City Pharmacy has 2,500 customers around the region, and a presence in countries such as Qatar, Saudi Arabia, Iran, so this opens up a lot of opportunities for us."

Concerted focus on the region by the company followed recognition of a niche opportunity there. "Our established European competitors weren't targeting these markets, so it meant there was more of a level playing field for a smaller company," Fleming says. Gaining traction was, he explains, largely the classic story of building relationships over time, with participation in Arab Health over a number of years central to that. "The first time,

people want to just kick the tyres with you, but by the third year they see you as a player. So it's very important to have a presence, and to persist with it."

Some 300 Irish companies are currently exporting into the Gulf States, with the UAE the gateway for many to the region. However, economic challenges over the last year have made it a more price competitive region and those looking for quick wins should look elsewhere, Fleming cautions.

The importance of interpersonal relationships was brought home to Fleming when he discovered a family connection linked the two businesses. "It was a distant one but it meant a personal connection with the key decision maker. It removed impediments and became a major focus for the agreement," he told *The Market*.

ICON to support large-scale genome sequencing project for cancer and rare diseases

ICON plc, the Irish-headquartered global provider of drug development solutions and services to the life science industries, has been selected by Genomics England as data management partner for the 100,000 Genomes Project.

A groundbreaking project announced by the British Prime Minister David Cameron in 2012, the 100,000 Genomes Project is sequencing 100,000 whole genomes from 70,000 NHS cancer and rare disease patients and their families. It aims to demonstrate a new genomic medicine service for the NHS to support better diagnosis and more personalised treatments for patients.

De-identified data from the 100,000 Genomes Project will also be made available to approved researchers from industry to help accelerate the development of new treatments and diagnostic tests that are targeted at the genetic characteristics of individual patients.

As Genomics England's data management partner, ICON will use its data management capabilities and understanding of the growing role genomics data will have in clinical trials, to validate clinical data from the 70,000 participating patients and their families. The work will take place within the secure Genomics England data environment.

APC to open new R&D facility with 100 jobs

The Irish pharma and biologics processing research company APC has opened a new headquarters at Cherrywood Business Park, Dublin, as part of plans to more than double its workforce to meet client demand. A UCD chemical engineering spin out, which started out as a cautious experiment between CEO Mark Barrett, then a postdoctoral student, and his professor Brian Glennon, APC has turned into a multi-million euro enterprise in the space of just four years.

"Turning a wonder molecule into a mass-produced medicine presents serious scientific and technological challenges even for some of the largest companies in the world. In our research, Brian and I saw an opportunity," Barrett commented at the official opening of the new facility, where pharmaceutical processing will be married with manufacturing optimisation to help global clients develop manufacturing processes for new medicines.

APC now partners with eight of the top 10 pharma and five of the top 10 biotech firms in the world. Some 80 per cent of its services are export-driven and the company aims to reach revenues of €50m by 2020. As part of this expansion, the company is planning to create 100 new jobs.

APC'S NEW R&D FACILITY IN CHERRYWOOD, DUBLIN



Crua Outdoors pitches up in the US, aiming for happy campers



Coming up with a new brand name wasn't hard for Kerry camping supplies company Crua Outdoors.

The company has developed a new type of tent that uses patented technology involving specialist materials and quilted fabrics to provide insulation against spikes in temperature. MD Derek O'Sullivan had the Eureka moment while camping in Killarney in 2011, when he woke up shivering from the cold. "The interior of the tents stay warm at night and don't overheat with the sun rise," he says. "Plus they insulate against sound, so you are not disturbed by the couple in the tent next door!"

After producing Thermo-Tent prototypes with the help of a Kickstarter campaign, the firm secured investment to go into full production. Components are manufactured in the Far East, Slovenia and the Netherlands, with final assembly in Tralee, where the company has

five employees

Enterprise Ireland US construction market specialist Randy Bounds in Austin, Texas, read about the Thermo-Tents and immediately saw their potential. "These tents can cost 1,800 bucks – that is expensive – but there is a market for that product. Here in Texas, hunting is a big part of our culture, and, in the construction industry, companies will host hunting outings in the same way that elsewhere companies host golf trips. This corporate market will pay top dollar for the best – for example, YETI coolers sell for US\$900 or more. I brought Derek O'Sullivan over, introduced him to this market and helped organise a product photo-shoot on the ranch of one of my colleagues."

Not only that, Randy was enlisted as a model in the publicity material, a possible first for an EI overseas office staffer.

Enterprise Ireland also helped Thermo-

Tent avail of branding consultancy services in New York. "As well as the Thermo-Tents, we also offer a range of other innovative camping equipment, such as a tent that doubles as a hammock and things like folding chairs and sleeping bags. We needed an all-encompassing brand," O'Sullivan told *The Market*. "We suggested the name 'Crua Outdoors', and the branding guys really liked it, especially that it was the Irish for 'hard' and that there was a story behind the brand name.

"One of the differences between Europe and the US is that in Europe, we can sell on the product specification alone, but in the US they like a bit of a story."

And do the Americans find 'Crua' hard to pronounce? Not at all, there is a resonance with the whole military thing where the Army goes Hoohah!, the Navy goes Hooyah! and the Marines go Hoorah!

Start-up targets cutting legal costs for business

Software packages like Sage, Big Red Book and STAS have really helped cut SMEs bookkeeping and accountancy overheads. Now a new Irish website www.lawonline.ie aims to do the same with legal costs.

Company founder Oliver O'Shea hit upon the idea after he became involved in the family courts and was aghast at the costs involved. "All the paperwork, no matter how mundane, was being handled by a solicitor who was charging an hourly rate," he says. "I thought there has got to be a better way of doing this. I came across a technology genre called 'document assembly' and have it applied to standard legal forms, letters and other documents. We now have more than 150 different legal documents that you can generate on our website.

"When filling out a form – say an employment contract or a district court claim notice for a debt – you essentially follow a Q&A format, with accompanying guidance notes and links to other relevant websites where necessary.

"Traditionally, when solicitors fill out new documents, they go through a cut and paste process, and errors can occur quite easily. Our system prevents simple mistakes because there are up to five types of validation built into each document assembly process. If something is wrong, it won't let you proceed until the problem is fixed."

O'Shea sees three different markets for the website: personal users, businesses and solicitors. "No solicitor can be expert on all areas of law, so for them it's like having a senior partner on hand to help with unfamiliar documents or forms. It's a productivity tool."

Lay users, personal or business, pay on a document by document basis, but solicitors can avail of unlimited access for a subscription starting at €49 a month. There are two levels of service for lay users: a go-it-alone service and a service that includes validation by solicitors William J Brennan & Co, LawOnline's partner law firm.

"Typically, a business will ask for the supervised service the first time they use LawOnline, but after that they have the confidence to go it alone when producing their next claim for debt or whatever," O'Shea says. "If anything does go wrong, we have professional indemnity insurance up to €14m in total, so users should feel confident."



FOUNDER OLIVER O'SHEA

Health-conscious Londoners get a taste for Wyldsson's subscription box



CO-FOUNDER AND CEO DAVE MCGEADY

A bridge between Ireland's newest and oldest industries, Wyldsson is an Irish ecommerce company that offers consumer access to a range of premium health food products. Employing five people and operating its own manufacturing facility in Tallaght, Co Dublin, the company has gained markets in 10 countries since it was established in 2012.

Co-founder and CEO, Dave McGeady says the company emerged from recognition that finding genuinely healthy food that also tasted good was more difficult than it should be. "The market for healthy snacks in the UK and Ireland is worth up to €1.5bn annually, but most of what's available in supermarkets isn't good and contains a lot of added sugar."

The e-commerce route initially emerged for pragmatic reasons, he adds. "We use ingredients that are quite expensive, so by the time retailers added their margin, the products weren't going to be competitive. By selling online, we were cutting out the middle man, allowing us to sell better products at a better price."

A former investment banker, McGeady became focused on entrepreneurship after doing an MBA in Tel Aviv, while experience in the Kellogg School of Management in the US led him to hone in on the opportunity around food.

The orders were soon coming in,

but there were plenty of learnings as the company got up and running. The subscription box is a relatively recent development that has proved particularly successful for the company. "Our customers were asking for it, so in a sense they brought it to us. We've had a huge amount of people sign up and it's really driven our sales in a big way. However, people want the flexibility to pause the box and change it, so we spent a lot of time making sure we got it right."

Wyldsson has been 100 per cent focused on exports from day one, with the UK accounting for 35 per cent of its business and London, in particular, the target for further growth this year.

McGeady says the company's decision to manufacture rather than outsource went against prevailing wisdom but has been pivotal to its success. "We have complete control over the quality of the product. We can make small batches, test new products and change quickly when we get feedback."

The marketing strategy makes skilful use of influencers such as nutritionists and sports stars. A favourable tweet from golfer Lee Westwood, for example, got the company a huge amount of attention among a prime audience.

With a year of strong growth ahead of it, McGeady says "we are getting close to taking the company as far as we want to be investor ready".

Ocuco eyes up Nordic market

Irish software company Ocuco has expanded into the Nordic market after another successful acquisition. Ocuco is number one in Europe and the world in providing software for opticians in retail and for lens manufacturers. It is growing at 35 per cent a year.

Key markets are Ireland and the UK, as well as Italy, but it also has offices in Spain, China and now Denmark, Sweden and Norway. Last June, it acquired Acumenex, an ecommerce platform in Canada. "Our business is growing superfast in Canada and the US especially," says Eric Huet, managing director of the firm's French subsidiary. "But we are also number one in Europe in terms of market share."

The company achieved €21m in annualised revenues for 2015, but its ambition is to reach €50m in four years. Its bread-and-butter products are practice management systems (PMS), which help manage retail stores and have been deployed by Specsavers, Vision Express, Optique (France), Salmoiraghi & Viagnò (Italy) and Hans Anders (the Netherlands). It also offers lab management systems for design and manufacture machines of lens labs, as well as an eCommerce portfolio that offers software for web diaries, online bookings and mobile apps.

A key strategy is to acquire local IT companies when entering a new market. The German market – the second largest in Europe – will be targeted over the next two or three years by the company, with acquisitions the likely route in.

"In the last five years, we have expanded greatly in the US, where we have done three acquisitions and we plan another three or four over the next few years," Huet adds. Ocuco has also begun targeting Asia, particularly China, which has thousands of labs that manufacture lens, but this is a long-term strategy and the hurdles are greater than those faced in North America.



LEO MAC CANNA, OCUCO CEO

Google to work with Movidius to enhance deep learning capabilities in next-generation devices

Dublin-headquartered Movidius, a leader in low-power machine vision for connected devices, is working with Google to accelerate the adoption of deep learning within mobile devices. As part of the agreement, Google will license Movidius processors alongside the entire Movidius software development environment. In turn, Google will contribute to Movidius' neural network technology roadmap.

"What Google has been able to achieve with neural networks is providing us with the building blocks for machine intelligence, laying the groundwork for the next decade of how technology will enhance the way people interact with the world," said Blaise AgDera y Arcas, head of Google's machine intelligence group in Seattle. "By working with Movidius, we're able to expand this technology beyond the data centre and out into the real world, giving people the benefits of machine intelligence on their personal devices."

Google will use Movidius' latest flagship chip – the MA2450 – the only commercial solution on the market today with the performance and power-efficiency to perform complex neural network computations in ultra-compact form factors.

"The technological advances Google has made in machine intelligence and neural networks are astounding. The challenge in embedding this technology into consumer devices boils down to the need for extreme power efficiency, and this is where a deep synthesis between the underlying hardware architecture and the neural compute comes in," explained Remi El-Ouazzane, CEO, Movidius. "Movidius' mission is to bring visual intelligence to devices so that they can understand the world in a more natural way. This partnership with Google will allow us to accelerate that vision in a tangible way."

REMI EL-OUAZZANE, CEO, MOVIDIUS



Argentina removes long standing trade barriers

European trade analysts are upbeat about the impact of new moves in Argentina to terminate or reduce the impact of several measures that had a strong negative effect on exporting from Europe. These measures include a system of importer declarations for goods, which were found to be incompatible with WTO rules, export taxes, a luxury tax for vehicles and access to foreign currencies. The moves, which follow the election of new Argentinian president Mauricio Macri late last year, are being seen as a signal towards establishing a more liberalised economy and international trade. Previously, Argentina had been ranked 121th in the World Bank 2015 Ease of Doing Business Ranking, even behind Brazil on 116th.

One of the first measures of the new Argentine administration was to lift most of the currency controls and to allow the peso to trade freely on the markets in mid-December 2015. The peso devalued immediately by about 30 per cent to the rate of the parallel market. The operators are now free to transfer their benefits and pay for their imports (and accumulated debt

from past importations that would not yet have been paid). This measure is aimed at increasing inflows of foreign currency and investments, with the objective of bolstering reserves and allowing importers to pay suppliers without delays.

The system of prior sworn importer declarations (DJAI's) for goods also ended in December 2015. This termination followed the ruling of a related WTO dispute settlement case initiated by the EU, USA and Japan. However, DJAS for importation of services remain in place. DJAI's for goods were replaced in December 2015 by the introduction of a new Import Monitoring System and of licences for all product imports (automatic for majority of them and of non-automatic licences for around 1,500 tariff lines).

Decrees issued in December 2015 have also revised almost all export taxes and eliminated or reduced export tariffs on agricultural and industrial products. These export taxes were a long standing issue for the EU in terms of open and secure access to raw materials.

Four Irish firms funded under latest Horizon 2020 SME round

Three different projects involving four SMEs from Tralee, Dundalk, Navan and Dublin will receive funding of between €0.5 and €2.5 million to bring products from pilot-phase to the market under the SME Instrument of Europe's Horizon 2020 programme.

The funding will allow the companies to invest in commercialisation activities such as demonstration, testing, scaling up and miniaturisation, in addition to developing a mature business plan for their product.

Paul Mullions from Brandon Bioscience said the support would allow his company to accelerate the commercialisation of a novel biotech solution to reduce yield losses in oil-seed crops using native Irish seaweed. The Kerry-based company currently manufactures marine-derived biostimulant products used in crop production in over 40 countries worldwide.

A second project, led by GM Steel in Dundalk, will focus on developing an automatic, non-invasive machine, aimed initially at the European market, for determining the lean meat yield in pig carcasses using the inductive properties of magnetic fields.

The third supported project, involving NVP Energy in Dublin and Galway, Hydro International in Navan and JK Fabrications in Belfast, will receive EU funding of €1.7m. "NVP Energy has developed a unique technology that cleans wastewater to a very high standard whilst generating valuable high-quality biogas that is 100% available for reuse to generate heat and/or electricity on customer sites," explained NVP commercial manager Fergus McMahon. "We will be closely collaborating with our project partners JK Fabrications and Hydro International to successfully deliver a full-scale, low-temperature anaerobic digester on a dairy customer site."

Over 60,000 companies on a waiting list for Facebook at Work

An enterprise version of Facebook that lets businesses build their own secure social networks is now being rolled out in select offices across the world along with complementary iOS and Android apps called 'Work'. A desktop version of the new service is also available and can be accessed via a user's main Facebook account.

Facebook at Work will mirror regular Facebook in terms of appearance and functionality. It will have profiles, a newsfeed, events hub, messaging, and groups. However, it won't serve ads or track data. It will remain a private, closed ecosystem only accessible to those inside a company.

According to TechCrunch, Facebook at Work has racked up over 60,000 companies on a waiting list while still in closed beta. There are now more than 450 enterprises using Facebook at Work, with new additions being announced regularly.



Global Shares reaches one million users

Cork headquartered Global Shares, a global provider of employee share-plan software, administration services and financial reporting, has reached a key milestone in servicing over one million users on its new equity plan management software platform. This achievement is attributed to the launch of the company's industry-leading share plan administration technology in early 2015.

Global Shares equity plan solutions provide real-time trading through FIX electronic messaging, allowing users direct market access to exchanges all over the world.

Frost & Sullivan identifies 16 for 2016

In 2016, the world becomes more 'uberised', augmented reality goes mainstream, cognitive technology is on the rise and the focus is on women in leadership. This is according to Frost & Sullivan's top 16 trends for 2016.

One of the most interesting trends identified by Frost & Sullivan's analysts is money. "We have labelled this trend 'fintech revolution' a transformation that is taking place within the finance industry," explains Frost & Sullivan team leader Archana Vidyasekar. "This disruption is initiated by the demand for more flexible banking as well as payment services. Bitcoin introduces new exchange systems and pricing mechanisms."

Women will also continue to be in the limelight in 2016. Today, one in five executives is a woman. This will increase in the future, Frost & Sullivan predicts. Similarly, millennials are being recognised as a powerful driving force for change in the way business is conducted.

"We are also witnessing the decline in the number of middle skilled jobs in the US that are expected to deteriorate further as well as a continued shift towards the sharing economy and uberization," says Vidyasekar, alluding to the trend for more to be shared.

F&S is also predicting augmented reality applications for e-learning will gain prominence and could completely change the way people learn and empower themselves.



**APRIL***04–07 April***MIPTV 2016**

MIPTV brings top TV and digital dealmakers and content creators together for partnerships, deals and networking.

V: Cannes

E: eileen.bell@
enterprise-ireland.com

*04–07 April***Market Visit: Money 20/20**

Money 20/20 is the largest North American fintech event that comes to Europe, covering payment services, trends and buyers.

V: Copenhagen

E: tom.holgersson@
enterprise-ireland.com

*05 April–19 May***Technology Centres Regional Roadshows**

Roadshows promoting the Technology Centres for market-focused, collaborative industrial research.

V: Waterford, Cork, Limerick, Galway and Athlone

W: <http://tinyurl.com/96x88zk>
E: liam.brown@
enterprise-ireland.com

*12 April–16 November***Lean Transform Network Summits**

Events for lean practitioners to meet and discuss effective implementation.

V: East Point, Dublin 3

E: richard.keegan@
enterprise-ireland.com

*12–14 April***Workshop: Driving Company Strategy**

Part of the Finance4Growth series for CFOs, this workshop focuses on successfully driving your strategy throughout the company.

V: Cork (12th) and Dublin (14th)

E: tom.early@
enterprise-ireland.com

*13–16 April***Higher Education Fair: Saudi Arabia**

The IECHE higher education fair offers an opportunity to promote Ireland as a destination to scholarship and self-funded third level students.

V: Riyadh

E: terry.mcparland@
enterprise-ireland.com

*17–21 April***Medtech Market Visit: China**

Study visit to the China International Medicinal Equipment Fair – the largest exhibition of medical equipment services in the Asia-Pacific region.

V: Shanghai, China

E: angela.zhang@
enterprise-ireland.com

*18–20 April***Higher Education Exhibition: Oman**

GHEDEX Oman offers an opportunity to promote Ireland as a destination to study abroad students.

V: Muscat

E: terry.mcparland@
enterprise-ireland.com

*20–21 April***European BioPharma Construction & Engineering Partnering Conference**

This event takes place in partnership with ISPE Ireland Affiliate.

V: Cork

E: david.corcoran@
enterprise-ireland.com

*26–29 April***German Animation and Visual Effects Expo**

The FMX conference and trade fair on animation and visual effects is a key networking event for the industry.

V: Stuttgart, Germany

E: daniel.starkey@
enterprise-ireland.com

MAY*01–26 May***German BIM and Smart Building Networking Event**

Event networking Irish companies with German planners and architects to showcase their competencies in the areas of BIM, the built environment and smart-home technologies.

V: Stuttgart, Germany

E: nicol.hoppe@
enterprise-ireland.com

*09–12 May***Market Visit: IoT USA**

Internet of Things market study visit to the US.

V: San Francisco, US

E: cameron.lilly@
enterprise-ireland.com

09–13 May

African Market Visit: Aviation

Market study visit to explore opportunities in Africa's aviation sector.

V: Johannesburg, Lagos, Nairobi

09 May

Technology Gateway Networking Event

Annual networking event to foster industry collaboration.

V: Dublin

E: mark.whelan@enterprise-ireland.com

09–10 May

Automotive Sub-Supply: Central and Eastern Europe

Opportunity to meet representatives of major vehicle manufacturers, such as Volkswagen Group, GM, PSA Peugeot Citroën, Toyota, Honda Motor, Solaris Bus & Coach and Polaris, together with tier 1 suppliers, based in Central and Eastern Europe.

V: Kraków, Poland

E: adam.jaszczur@enterprise-ireland.com

16–18 May

Market Visit: Oman ICT

Opportunity for companies to visit Oman, showcase their innovative solutions and to meet with potential Omani buyers.

V: Muscat, Oman

E: abdull.ali@enterprise-ireland.com

17–19 May

Rapid 3D Conference, USA

Leading event for 3D printing, scanning and additive manufacturing.

V: Orlando, USA

E: catie.riordan@enterprise-ireland.com

17 and 18 May

Workshop: Accessing Growth Funding

Part of the Finance4Growth workshop series for CFOs.

V: Galway (17th) & Dublin (18th)

E: tom.early@enterprise-ireland.com

18 May

Market Study Visit: Biomass, Scotland

Visit to Scotland's leading biomass plants in conjunction with Herriot Watt's energy academy to explore commercial and R&D partnership opportunities.

V: Edinburgh

E: maureen.barry@enterprise-ireland.com

19–20 May

Workshop: US Hospital Procurement

Focused on explaining how US healthcare providers operate and engage with vendors.

V: Dublin

E: doreen.mckeown@enterprise-ireland.com

26 May

Workshop: Selling to OEMs in Central Europe

Event focused on the automotive and electronics industry, providing an opportunity for one-to-one meetings with selected buyers and market advisers.

V: Dublin

E: ladislav.muller@enterprise-ireland.com

26–29 May

National Stand: Interzoo 2016

Irish national pavilion at Interzoo 2016, the international trade fair for pet supplies.

V: Nuremberg, Germany

E: garrett.dee@enterprise-ireland.com

29 May–03 June

International Conference on Education, USA

NAFSA 2016—the world's largest international conference on education.

V: Denver, USA

E: karole.egan@enterprise-ireland.com

JUNE

01 June

London Network Dinner: Aviation and Aerospace

Coinciding with the APM/MRO event in the London Olympia, this networking dinner at the Irish Embassy in London will include a keynote speech from a minister.

V: London, UK

E: seanmichael.long@enterprise-ireland.com

W: www.apmexpo.com

12–20 June

Education Market Visit: Indonesia

Market study visit to Indonesia for Irish higher education institutions.

V: Jakarta, Indonesia

E: terry.mcparland@enterprise-ireland.com

14 and 15 June

Workshop: Product Innovation

Part of the Finance4Growth series for CFOs, workshop focused on product innovation and project appraisal.

V: Cork (14th) and Dublin (15th)

E: tom.early@enterprise-ireland.com

15–18 June

Agricultural Equipment Expo: New Zealand

Enterprise Ireland will host a national stand at Mystery Creek Fieldays – New Zealand's launch platform for agri-business solutions.

V: Hamilton, New Zealand

E: hannah.fraser@enterprise-ireland.com

16 June

Digital Strategies for International Markets

Developing and enhancing companies' online presence to promote new business opportunities in overseas markets.

V: Galway

E: eoin.osiochru@enterprise-ireland.com

20–24 June

Medical Devices Study Visit: Asia

Market study visit to Japan and Korea.

E: patrick.oriordan@enterprise-ireland.com

20–21 June

Construction Study Visit: Toronto

Market study visit focusing on opportunities in Canada's largest metropolitan area.

V: Toronto, Canada

E: brian.whelan@enterprise-ireland.com

22 June

Medtech Business Mission: France

Coinciding with TechDays, in St Etienne, this business mission to the Rhone-Alps area of France will focus on medtech and medical devices.

V: Lyon and St Etienne, France

E: sinead.lonergan@enterprise-ireland.com

28–30 June

Quarry, Construction and Recycling Expo, UK

Join the Irish pavilion at Hillhead 2016 – the UK's largest quarry, construction and recycling expo.

V: Hillhead, Derbyshire, UK

E: seanmichael.long@enterprise-ireland.com

JULY

04–05 July

Internet of Things UK: Study Visit

Focused on industrial automation and building relationships with system integrators and larger technology vendors.

V: London and South East, UK

E: gavin.mcwhirter@enterprise-ireland.com

08–11 July

Irish National Stand: German Agri-Business Show

National stand at Tarmstedter Exhibition, a regional agricultural Show, targeting farmers in the northwest of Germany.

V: Tarmstedt, Germany

E: john.heike@enterprise-ireland.com

11–17 July

Farnborough Airshow 2016

The Enterprise Ireland stand at the Farnborough International provides an opportunity to meet some of the 56 anticipated civil delegations from 23 countries.

V: Farnborough, UK

E: seanmichael.long@enterprise-ireland.com

For dates and venues around the country, see www.enterprise-ireland.com/en/events/

Unveiled at Levi's Stadium in San Francisco during Super Bowl 2016, the Cube is vStream's answer to that age-old problem for tech companies of how to productise what they do. Ian Campbell tells the story to date.

BOWLED OVER

At a time when the genes of entrepreneurialism seem inextricably linked to computer skills or accountancy, creative types might take some encouragement from the vStream story. One of the two founders, Niall O'Driscoll, is a filmmaker and painter. His business partner, Andrew Jenkinson, provides the software engineering skills that are almost a pre-requisite for a tech start-up, but it's the differences between them that have fuelled the company's success.

The long-time friends, who first bonded when they were eight over a Tayto crisp sandwich on their school steps, wanted to see if they could combine their different skills and set up in business together. The vStream Group is the result.

Opened for business in 2007, the initial focus was on making online videos, a market opportunity that took off as firms looked to supplement websites with more engaging content. The idea was good but the timing was bad as their launch coincided with the onset of the recession. It turned out to be the making of them.

"We set up at the worst time possible but it taught us how to run a company efficiently and that the most important thing was to innovate," explains Andrew Jenkinson. "Those that innovate get market share and get to survive and grow."

With 3D videos and green screen effects, they won high

profile local business with clients like Jameson and Aviva Stadium. The company formed two different divisions, a creative advertising agency called Vocal and a video production business with its own green screen and studio facilities, called Visual.

Notching up awards and an impressive client base was not enough for the two men who had an eye on a bigger prize, an international company that could scale. They had already hit the low ceiling that restricts an Irish-only business and were increasingly frustrated at the lack of budget and enthusiasm for their more innovative ideas.

To succeed outside of Ireland, they knew they needed something extra. With this in mind, they applied and won an Enterprise Ireland research grant to develop wearable augmented reality technology that would provide users with a more immersive experience.

TURNING POINT

This was a turning point, where the combined creative and technological skillsets began to intermingle and morph into something new and tangible. "Because we combine backgrounds in film and software development, we see things differently," explains Jenkinson. "We come up with creative technology solutions that other people would find difficult to grasp because they don't speak that language."

Here, at last, was a target audience that was prepared to innovate, and vStream was soon catching the attention of major sporting bodies like Formula 1, the Premier League and the NFL.



NIAL O'DRISCOLL AND ANDREW JENKINSON
LAUNCHED THE CUBE AT LEVI'S STADIUM, SAN
FRANCISCO, DURING SUPER BOWL 2016.

What sparks their ideas may be different from most tech companies but their strategy to scale is quite familiar. To grow outside of Ireland, they had to productise what they do. High-profile client commissions were successful but they were one-off projects: bespoke work that was complex and customised, not very repeatable and with no long-term revenue stream.

The wearable augmented reality device had shown the way forward and introduced them to a market that would prove pivotal to vStream, sports and sponsorship. Here, at last, was a target audience that was prepared to innovate, and vStream was soon catching the attention of major sporting bodies like Formula 1, the Premier League and the NFL.

"The UK and the US had the budgets and the appetite for what we were developing, and thanks to Enterprise Ireland investment we were starting to win multimillion pound projects," says Jenkinson.

vStream had found itself centre stage in state-of-the-art experiential marketing space, combining content creation capabilities and digital signage with innovative technologies. It wanted to build on the momentum and look at getting further into overseas markets.

Niall O'Driscoll takes up the story: "We took all the knowledge and experience we had built up and matched it with market research we carried out in the US. We ended up looking at ways that sports stadiums connect with their fan base and found a real gap in the market," he says. "Then we bought in consultants who identified a product as the best way to get into the US and realise our entrepreneurial ambitions."

With the help of a second Enterprise Ireland R&D grant, the Cube was born. Described by vStream as a "sculptured installation", it's a brushed steel frame containing transparent OLED screens that broadcast content to audiences in public spaces, typically sports stadia and shopping centres. Intelligent programming software schedules content to run across one or multiple installations and various screen configurations. Passers-by interact with touch or gesture or via smartphones.

On the back of its development, vStream opened offices in New York and unveiled the Cube at the Super Bowl 2016 in the Levi's Stadium in San Francisco. Major deal announcements are expected soon.

ORGANIC GROWTH

While most start-up stories involve chapters on seed money and investors, vStream has relied solely on Enterprise Ireland to co-fund research and advance its international footprint. This self-sufficiency is down to the three-company strategy with Vocal

and Visual providing steady revenue streams that have financed the more ambitious vStream projects.

There have been offers of venture capital but the business remains self-financed with its ownership undiluted. Only now, as the company looks to scale the Cube quickly, are the two entrepreneurs starting to look at outside investment.

So how did they get to where they are? "Hard work and a lot of networking," says Jenkinson. "We target football clubs and other sporting organisations where information about their sponsors is publicly available. We use LinkedIn a lot."

Initially, it was a hard sell. Although there is always interest in innovative ideas around sponsorship, no one wants to be first. The upside is that once somebody takes the first step and everyone sees the impact, others quickly follow.

Part of the challenge is demonstrating what they do – while its three offices can run demos of the Aviva 3D experience, the Cube really needs to be seen in situ. The Super Bowl launch has certainly helped, where a demo of the product featured content made by vStream as well as other media agencies.

"We want to create immersive interactive experiences and make the platform a permanent fixture in stadiums," explains Jenkinson. "It would move us to a model where revenue wasn't just based on hardware costs. Agencies would pay us a license fee to develop content for the Cube."

The company is clearly building momentum. "We are fortunate and find it increasingly easy to get meetings," he says. "In the early days it was banging on doors, but now they are a little bit more ajar."



DUNDRUM TOWN CENTRE, CHRISTMAS 2015:
SCREENED ON A DIGITAL WATER CURTAIN, VSTREAM'S
SANTA AND THE STARKEEPER ALLOWED THE
CHILDREN IN THE AUDIENCE TO STAR IN THE STORY.

"We want to create immersive interactive experiences and make the platform a permanent fixture in stadiums. It would move us to a model where revenue wasn't just based on hardware costs..."

With the Brexit vote looming and volatility predicted in sterling rates until at least June, now is a good time to review your policy on managing FX risk. Mary Sweetman reports.

WHAT'S YOUR POLICY ON MANAGING STERLING FX RISK?





The role of the financial director is to minimise risks and losses, not to make a profit off FX.



The battle lines have been drawn. Cameron has got his deal, but Boris says it's not enough. In a reversal of the conventional wisdom 'It's the economy, stupid', the Brexit debate seems, so far at least, to be about almost everything else, and it's even odds at this stage which way the great British public will vote.

However, as John Finn, MD of Treasury Solutions, points out, "A vote to exit will not result in a big bang. It requires a lot of legislative changes, and it will be 2018 to 2020 before it becomes a reality."

In the meantime, as uncertainty reigns, one of the first casualties has been the value of the pound. If the trend continues, it's going to make British imports cheaper for Irish buyers. So companies here need to watch competitiveness to protect home market share. But even more so, they will need to watch sterling movements and pricing on UK deals if they are to avoid straying into loss-making territory.

"Just to put figures on it: based on the 2016 year-to-date average EUR/GBP rate, £1m sterling is now worth €63,500 less than it was based on the 2015 average rate," Finn says.

With sterling predicted to deteriorate further in Q2, this figure could worsen. "In simple terms, exporters are losing the equivalent of the cost of employing two people for every £1m sales compared to last year."

TIME TO DUST DOWN YOUR FX STRATEGY

Over a third of all exports by Enterprise Ireland client companies are destined for Britain. And with further volatility in the value of sterling expected in the run up to the June referendum, now would seem like a good time for Irish companies to dust down and review their strategy for managing foreign exchange risk.

So what is your policy? If you're like one of three groups of companies encountered by Conor Haugh at Bank of Ireland Global Markets, congratulations. You have a well-documented – and adhered to – policy, and you understand the risks you are facing into. A second group of companies, Haugh says, have a well-thought-out approach to managing forex risk: it just might not be encapsulated in a formal policy on paper. Most vulnerable to the current market volatility is the third group, though, who are basically winging it and relying predominately on spot trading.



CONOR HAUGH
BANK OF IRELAND
GLOBAL MARKETS

Brian Colgan, Head of the Export Hub at the Irish Exporters Association, is fearful that too many Irish SMEs could be in this third category. "Sterling is shooting all over the place right now," he says. "We have had a movement from 0.6992 to 0.7760 [from the end of 2015 to the time of going to press]. That's a massive 12 per cent swing – straight off the bottom line." Clearly in businesses where margins can be as tight as 3 per cent, profitability could easily be eroded.



Common wisdom is that a Brexit would weaken sterling, but no one really knows. It is impossible to predict currency movements.



“A lot of SMEs watch the rates. BOI has an app, and AIB has the FX centre,” Colgan adds. “But they need to look at hedging policy. My experience is that even if they do have an FX risk policy, they don’t actively pursue it.”

John Finn puts it more bluntly: “Companies are making it up as they go along; very few have a formal policy. The bigger guys generally have, which is ironic because they can take the hit if it all goes wrong; an SME can’t.”

DOING NOTHING EQUATES TO GAMBLING

Part of the reason for procrastination is probably because the ebb and flow of forex rates have been kind to Irish exporters in recent times. Given that the UK and USA are Ireland’s main export markets, and with the relatively strong position of the dollar and sterling compared with euro, companies that did nothing in the recent past probably fared better than companies that hedged. But Finn reckons that this has largely been a matter of luck rather than any particular foresight. “Doing nothing has been a default position rather than a strategy,” he argues.

Unfortunately, as markets are increasingly pricing in the impact of a possible Brexit and the tide has already turned on sterling, Finn reckons that reluctance may be compounded for companies that hadn’t moved to hedge by the end of 2015, “because nobody wants to admit to having made a mistake”.

Tom Early, Senior Manager - Growth Capital and Banking Relations at Enterprise Ireland, agrees that hedging can be a thankless job for the finance officer. If the foreign currency movement would have been favourable to the company, you’re seen

as having lost it money. Whereas if the movement is unfavourable, and you have potentially saved the business from losing its shirt, then don’t expect any thanks: “you were just doing your job.”

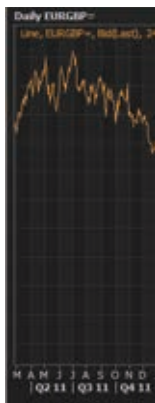
But, of course, this misses the point entirely. The role of the financial director is to minimise risks and losses, not to make a profit off FX. Companies exist to focus on their core business, Early points out, and that core business is not about gambling on or even playing the forex market. Pale and tired FX bankers regularly quip that if this were an easy thing to do, they would all be relaxing on sunny beaches, cocktail in hand.

BACKDROP OF UNCERTAINTY

The potential Brexit is a case in point. “Common wisdom is that a Brexit would weaken sterling, but no one really knows,” Colgan says. Prior to his current role at the Irish Exporters Association, Colgan was head of commercial treasury at AIB, where he worked for 33 years. “I’ve been in global markets for decades, and I can tell you that it is impossible to predict currency movements,” he says.

While bearish about sterling in the immediate term, Finn adds that heaped on top of Greece’s economic woes and Europe’s continuing migrant crisis, a Brexit could spell trouble for the euro also. Conversely, a ‘stay’ vote would be likely to boost both the euro and sterling, making the impact on exchange rates between the two currencies less clear.

Against a backdrop of uncertainty, the key point of strategies like hedging is to protect the core business by enabling companies to price a contract in foreign currency with the certainty that even if there is FX movement, the margin is protected.



Of course, that's not to say that companies should be hedging 100 per cent of their exposure, 100 per cent of the time. It is possible to allow for some upside.

"Larger companies will sometimes decide to deviate [from their FX policy] if a particular currency is favourable for them," Colgan explains. "But they are very aware that they are deviating and the reasons why, and, even then, they may still hedge a portion or leave instructions with their bank if a certain point is breached. Plus, they have the cushion to take a hit. SMEs don't."

NOT A FINANCE-ONLY ISSUE

The important point is that the CEO and board are aware that a punt is being taken. Finn suggests that finance should gain clarity by asking: "What is an acceptable risk for our company?"

Early agrees that CFOs shouldn't shoulder all the responsibility. "If there is no formal policy or documentation in place, and something goes wrong, then finance is typically held accountable. The policy should be agreed and responsibility shared at board level."

He adds that if you don't hedge, you are in effect gambling, so it is important for the board to regularly review the FX policy. Yet FX performance is rarely mentioned in management reports. In fact, approximately just 10 per cent of Irish companies have

a formal board policy on risk management versus 30 per cent in the UK.

ELEMENTS OF A FX RISK-MANAGEMENT POLICY

So beyond making FX risk a board issue, what other steps are recommended? Haugh says that companies need, first and foremost, to recognise they have a risk. They then should document a policy that gives clarity around what controls and procedures are in place for managing the risk. Thirdly, they need to create ownership for that policy.

"Use the knowledge that resides within the four walls of your bank," he urges. "We have a team of 17 treasury specialists. We can work with your company to identify risks you might not have even considered. Then it's about managing those risks; you will never eliminate risk, but you can manage it."

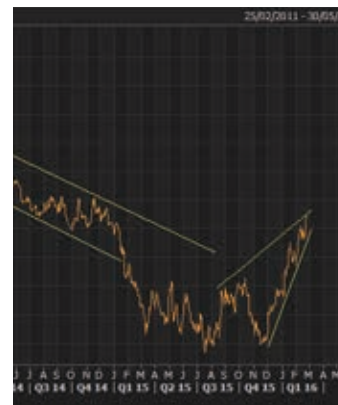
As a minimum starting point, Colgan says that companies should know what the break-even sterling rate point is for every UK contract entered into.

As part of this, Early adds that FX management and payments should be part of the sales process. "Consider setting the sales teams' metrics based on local currency and have finance work with the sales team when tendering or quoting for new business," he advises.





FX should be part of the sales process. Consider setting the sales teams' metrics based on local currency and have finance work with the sales team when tendering or quoting for new business.



“To convince other areas of the business of the importance of hedging, use historical foreign exchange movements to emphasise the point. For example, in 2010, there was a difference of 22.8 per cent between the high and low EUR/USD rate. If a company is operating on a 5 per cent net margin, it cannot absorb a negative movement in the current year’s profits.”

NATURAL HEDGING

Natural hedging methods such as operating a sterling bank account and matching currencies by, for example, buying raw materials in sterling can take some of the sting out of negative movements. “Companies should match currencies when they can and be aware of their net exposure and within what timeframe,” Coughlan advises.

Other textbook approaches like invoicing in euro and asking the buyer to absorb the risk are good in theory, but depending on negotiating power, could be a deal breaker. And given that many SMEs are price takers rather than makers, it can sometimes be hard to negotiate a better deal from buyers, as the euro strengthens.

Regardless, Finn says that they should note currency movements in dealings with suppliers outside the eurozone. “Say you ask for a discount on the basis of a stronger euro, but the supplier tells you it can’t be done because they have hedged forward for three months, make a note of it. If the currency swings the other way, and they are looking for a price hike, at least you can remind them that they have hedged, which may buy you a little negotiation space.”

HEDGING AND OPTIONS

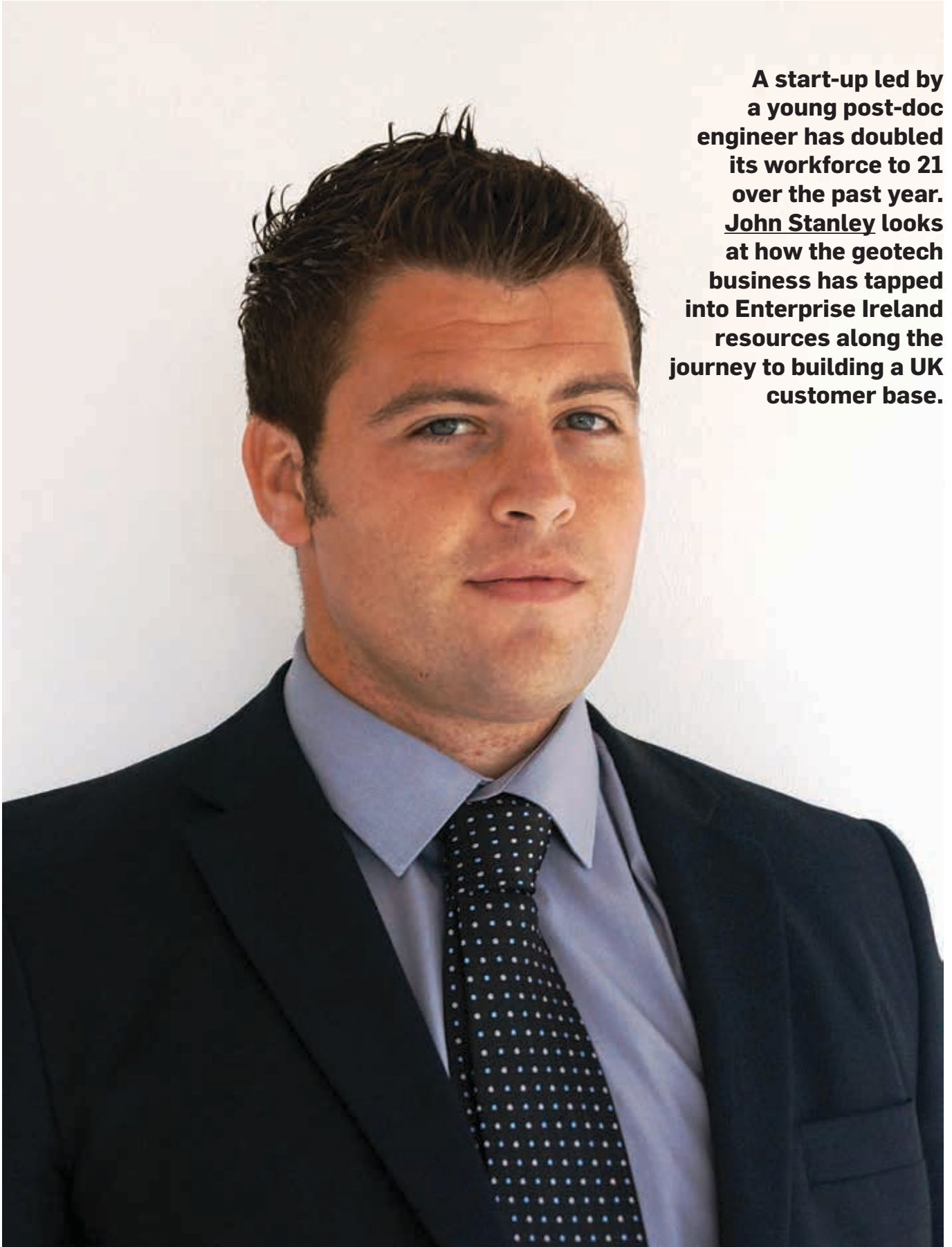
In terms of dealing with the uncertainty in the months ahead, he reckons that, while seeking appropriate advice, companies selling to the UK should consider hedging forward until June and buying options for the rest of the year.

The advantage of a forward contract is that it locks in the exchange rate at which the currency transaction will occur. Therefore, it provides certainty and protects margin.

In contrast, paying a premium for a foreign-exchange option gives the business the right, but not the obligation, to exchange currency at a pre-agreed exchange rate on a specified date. If on that date, the company can benefit from more positive currency movements, it can decide not to take the option. “If you spend money on options, the worst-case scenario is just that you lose that money,” Finn explains.

However, Colgan cautions that companies using options should keep things simple. “The concept is simple: you have the right, not the obligation. But in some cases, the mathematics can become so blindingly complex, very few people really understand them.

“People should only enter into products they understand and that they are comfortable with. This shouldn’t be about importing in extra risk,” he adds. “Have total clarity on any products you buy. Lots of banks and lots of providers offer this service. They will be happy to explain it to you, and, if they aren’t, go elsewhere.”



A start-up led by a young post-doc engineer has doubled its workforce to 21 over the past year. John Stanley looks at how the geotech business has tapped into Enterprise Ireland resources along the journey to building a UK customer base.

BUILDING FOUNDATIONS FOR UK GROWTH

In 2010, Paul Doherty was reaching the end of his Irish Research Council funded doctoral programme at University College Dublin and pondering his next move. As part of his research, Doherty and his supervisor, Ken Gavin, had already undertaken a number of practical “case studies” for developers and contractors.

Now they hoped to undertake more work for these clients – this time being paid for their efforts. They established their new geotechnical design consultancy, Gavin and Doherty Geotechnical or GDG, in 2010. It quickly became a full-time job for Doherty, while Gavin has been involved part-time so far, also remaining on the UCD staff.

From the outset, GDG has engaged in European supported research projects under Horizon 2020 and FP7. These provide a dual purpose for GDG, enhancing their expertise from a practical perspective and building image.

A connection with UCD has also been retained. “The geotechnical group there is very strong,” Doherty points out. “They represent our talent pool for the future, and we see potential for collaboration on research projects of relevance to the industry.”

Over the past 12 months, GDG has doubled in size to a staff of 21. Doherty expects that number to increase to 30 by the end of this year and to around 45 by the end of 2017. The vast majority will be based in Dublin, where the design team and its ongoing research activities are located.

PLOTTING A COURSE

But, as with most start-ups, things haven’t been all plain sailing. Unfortunately, the timing of GDG’s launch was poor. “Although everyone was very positive about what we were offering, it wasn’t generating work,” Doherty says.

GDG changed tack in mid-2012 when Doherty identified a project in Toronto that had run into difficulty and needed geotechnical specialist support. Having got a foot in the door, GDG began picking up specialist work in such faraway places as the Persian Gulf, Myanmar and Tunisia. This helped to spread the company’s name as a leading-edge geotechnical troubleshooter and provided a number of good reference sites.

“We cut our teeth on tricky projects,” Doherty says, “but that approach was simply not sustainable. We were constantly chasing one-off jobs. We had to refocus in order to become a sustainable business and to grow our team.”

By focusing primarily on opportunities in Ireland, the business started to win repeat business. “But once again, we realised that if we wanted to grow and to maintain our reputation as a specialised, research-driven consultancy, we would need to go further afield,” Doherty says.

The obvious place was the UK, which has a high volume of infrastructural work underway and planned. Another advantage was that it could be easily served from Ireland. “You can do a lot of detailed design work remotely.

For example, for our type of work, you could have nine people working on a complex UK project in Dublin and just one on the ground in London.”

ADVOCATE ONBOARD

The decision was not made overnight, however. “We were still thinking of Canada as an option,” Doherty says. What clinched it was their development adviser suggesting they take advantage of the Advocate programme. Run as part of Enterprise Ireland’s Get Export Ready initiative, the programme teams up companies with mentor-style advocates to tackle the UK market.

Gavin and Doherty quickly seized the opportunity to have an advocate onboard and selected John Bowen, a highly experienced business consultant and chartered engineer who had run his own construction firm for many years.

Over the space of three visits, Bowen helped the promoters develop a robust business plan, which could be revisited, revalidated and revised after six months.

“They got the idea and the merit of a strategic business plan from day one,” Bowen says. “Paul has excellent geotechnical engineering skills, but he’s also very entrepreneurial, so he wasn’t looking at this as building a professional practice but as building a business.”

“John [Bowen] has brought a lot to the company in terms of commercial activity, HR and developing new business. So when the programme came to an end, we were very keen to retain that connection,” Doherty says. The founders were delighted, therefore, when Bowen recently accepted an invitation to become the chairman of GDG. “He’s a great guy to have on board,” Doherty says. “He’s a huge support, especially as we’re now looking at more complex and bigger projects.”

About 18 months ago, with the benefit of Bowen’s help, Doherty’s next port of call was EI Market Adviser Maureen Barry, a member of the New Market Entrants Team in London. “Maureen gave us an enormous amount of support on the ground. She helped us with access to markets and logistics and really helped us understand how to identify and approach the right people,” Doherty says.

For her part, Barry was immediately impressed by the young engineer. “Paul had a real appetite for engaging with us. He really listened during our initial two-hour ‘deep dive’ session. We ask a series of questions to sense-check a client’s ambition and ability to penetrate the UK market effectively. It was clear Paul had done a lot of homework and had a clear medium- to long-term strategy for engaging in offshore wind projects. But he was less clear about the immediate term.”

We cut our teeth on tricky projects, but that approach was simply not sustainable. We were constantly chasing one-off jobs. We had to refocus in order to become a sustainable business and to grow our team.



RETAINING WALL DESIGN



MOUNT LUCAS ONSHORE WIND FARM FOUNDATION ANALYSIS

GENERATING LEADS

Doherty and Barry quickly developed a strong working relationship and worked on a short-term plan to identify opportunities in and around London, with Barry helping to generate leads and identify key influencers and decision-makers for Doherty to hunt down. The approach was well structured, with quarterly reviews.

“With all our clients, it’s a partnership,” Barry explains. “There has to be accountability and a clarity on who’s going to do what within a realistic time scale. Paul now has a business plan appropriate to GDG’s size and stage of growth. And in his engagement with us, he’s brought enthusiasm, professionalism and attention to detail. He’s methodical and he wants to learn; he’s not dismissive of new ideas or directions. When the engagement is that strong, things begin to happen serendipitously.”

“You start by identifying who you want to work for and then finding the right person to approach. To date, nearly 100 per cent of our business has come from direct contact, often by word-of-mouth,” Doherty says.

They got to the right people eventually, he adds, by ringing enough of the wrong people to start with.

Letting people know you exist is one thing, demonstrating capability by way of your portfolio is another. GDG has spread the message in a variety of ways. Last November, for example, rather than making a direct sales pitch, the company hosted a CPD-qualifying evening seminar for selected

engineers at EI’s offices in Shaftesbury Avenue, which showcased GDG’s expertise in pile design and design optimisation. A series of follow-up breakfast seminars are now planned.

GDG’s clients are companies with significant requirements for groundwork. Another approach that has worked well is to offer initial pro bono evaluations and proposals on difficult projects, demonstrating that GDG knows what it’s talking about, can add real value and is offering far more than an off-the-shelf solution.

To help drive momentum in the UK, GDG has recently recruited a UK director, based in Scotland. Originally from Cork, consulting engineer Gerry O’Sullivan brings 30 years of experience in everything from wind farms to wastewater to local authority projects and has worked in Scotland for the past six years.

Although GDG’s business plan covers the whole of the UK, Doherty has been careful not to spread resources too thin. Most of the work to date has been secured either inside the M25 around London or in Scotland, where O’Sullivan is based. “We haven’t chased business in cities like Newcastle, Manchester or Liverpool yet. I expect we will in years to come,” Doherty says, but that really depends on resources.”

Contact the Get Export Ready helpdesk on tel. 01 727 2325, email getexportready@enterprise-ireland.com, or visit www.enterprise-ireland.com/en/Export-Assistance/Get-Export-Ready/

DAQRI'S SMART HELMET, CLAIMED TO
BE WORLD'S FIRST WEARABLE HUMAN-
MACHINE INTERFACE

BEYOND BIM



For the last four years, Enterprise Ireland has been helping Irish construction and engineering businesses to prepare for the UK's building information modelling (BIM) mandate, which goes live this April. Cian Molloy looks at what's next in terms of markets and applications.

When the UK government announced four years ago that it was going to work to make building information modelling (BIM) a standard practice in the British construction industry, part of its strategy was aimed at putting the UK's architects and engineers at the leading edge of construction innovation so they could win the most valuable overseas contracts.

The immediate advantage of BIM is that it helps identify problems early in the design stage rather than after construction has begun, so resolving clashes is far less expensive. The British Government reckons that in 2013 to 2014, BIM 'Level 2' saved it £840m on public projects and that ramping up to BIM 'Level 3' (see panel on page 25) has the potential to save even more in the short and long term.

Wakeup call for global construction

"The UK decision was in many ways a wakeup call for the global construction industry and a catalyst for many other governments and industry groups to follow suit," says John Hunt, a senior construction industry adviser with Enterprise Ireland's UK team. "The opportunities of adoption – and the threats of non-adoption – have been made abundantly clear with BIM maturing across four continents, Europe, North America, Asia and Oceania, and with central government support growing in South America and in the Middle East and Africa. The Dubai Municipality, for example, recently expanded its 2013 BIM mandate to include a far greater number of buildings."

While Ireland has no national standards for BIM and there is no BIM mandate in operation in this country, Irish construction companies operating overseas have followed the UK lead and put steps in place to comply with British Publicly Available Specifications (PAS). These are set by industry rather than the British Standards Institute.

"Within mainland Europe there would be resistance to complying with anything that was labelled BS or British Standard," says Hunt. "But work has already started to harmonise BIM processes across Europe, and they are likely to follow the British lead. Once the standards have ISO in front of them, instead of BS, you will see them adopted more readily."

That said, it appears that some countries are culturally more flexible about new ways of working. Alan Hore, assistant head of the DIT School of Surveying and Construction Management, is a founder director of the Construction IT Alliance, which has been promoting BIM within the Irish construction industry.

"BIM adoption is at its most advanced in Scandinavian countries – Norway, Sweden and Finland," he says. "After that, it would be US, Canada, the UK and Australia. BIM usage is very low in France and Germany, and there are only a few pockets in Italy where it is used."

The Germans are very conservative and reluctant to move to new ways of working and the industry does not have a collaborative culture. In contrast, in the Middle East, there is much greater use of very sophisticated BIM on some major projects. This is partly because you have much more liberal planning regimes. There isn't a culture of strict planning control, and you have principalities dictating that they want the world's tallest building or the world's smartest city."

Mercury Engineering was able to extend the working season in Sweden into the Arctic winter by using off-site modularised construction on a data centre project where the temperature was -20°C outdoors.



MURPHY SURVEYS PROVIDED EMERGENCY-RESPONSE HYDROGRAPHIC SURVEYING AND MONITORING AT THE COLLAPSED MALAHIDE RAIL BRIDGE

Irish capability

In Ireland, many of the major mechanical and electrical (M&E) engineering companies became adept at BIM through working on the IBM facility in Leixlip, though contractually they are not allowed name the IT giant as a client. Working with BIM models has facilitated off-site prefabrication of M&E components, which are then assembled on site. Most of the large Irish M&E firms now have their own cleanroom environments with CNC machinery, linked to a BIM model, used to produce lengths of pipe, cable housings, junctions, etc., to order. The result is reduced wastage (cut right, cut once), greater cost control, just-in-time manufacture and greater control over quality assurance.

Recently, Mercury Engineering was able to extend the working season in Sweden into the Arctic winter by using off-site modularised construction on a data centre project where the temperature was -20°C outdoors. By having ready-to-assemble modules, the company made significant savings on on-site heating and lighting costs.

Mercury's head of innovation Gary Widger said: "Leveraging BIM, we now manufacture and modularise a significant scope of work off-site in our fabrication facility in Newbridge. This is giving us improvements in safety, in quality and our ability to deliver to schedule. For example, when working on the Kerry Group Innovation Centre, we used off-site modularisation successfully to manufacture a 40-metre long riser that was then moved onto site and placed in position in one morning."

Although BIM has yet to gain traction in Germany, Anne Fletcher, managing director at Coady Architects, says having BIM expertise is a great way to have doors open for you. "We've been exploring the German market for just over a year now and are in talks with several potential partners," she said. "Hopefully, we will be announcing a deal before the end of the year. They are waking up to the possibilities of BIM and are increasingly interested in learning about its potential through working with a company like ours. It helps that we are currently involved in the delivery of a tranche of school buildings in Belgium. That increases our credibility."

Hoping to prise open the door further and showcase Irish capability, in May this year, Enterprise Ireland is hosting a BIM showcase in Stuttgart in conjunction with the Fraunhofer Institute and is looking for up to eight Irish companies to participate. In addition, Enterprise

Ireland is hosting a networking event on 16 March at the Light + Building trade fair in Frankfurt.

Big data to reduce lifecycle costs

Another potential advantage of BIM, particularly fully implemented Level 3 BIM, is its role in optimising the ongoing operation of a building in terms of maintenance, energy use and comfort levels.

"In Ireland, our work includes PPP projects, where the successful bidder for a tender will have to operate or manage a facility for several years after it has been constructed," Coady explains. "The data from a BIM model can make these operations far more efficient, and there is growing interest in this element of building information modelling."

However, Dr Claire Penny of IBM Analytics says there is some way to go to get stakeholders to understand that good quality data generated during the design phase can reduce total lifecycle costs.

"There is a wealth of data, both structured and unstructured, that is unexploited throughout the lifecycle of a building, for example the adoption of a condition-based maintenance strategy using data feeds from meters and sensors coupled with external data feeds, such as weather information. This would mean equipment is only maintained when required, but before it fails." However, she adds that "managers generally have an incomplete understanding of all the data available in the facilities they manage".

Hunt agrees: "It's like having a car that can give you 80 miles to the gallon, but in the hands of a bad driver, you are only getting 20mpg." Both believe there are new opportunities emerging for tools that enable facilities managers to harness big data to reduce building operation costs.

Refurbishment and renovation

Another application for big data analysis is in surveying, where laser scanning is now used to create a 'point cloud' that can be manipulated to provide a 3D model of a building or a landscape, potentially so detailed that individual leaves on a tree can be captured in the virtual model. Almost by definition, building information modelling that includes 'as is' data needs to be done using cloud computing and specialist software such as Revit.

Murphy Surveys were early adopters of laser scanning in Ireland. At present, the company is

surveying more than 250 TK Maxx stores across Europe to create a BIM model for each store's refurbishment and renovation programme.

"Since we were founded in 1982, we have had an ethos of continual progression," says MD Ray Murphy. "Recently, we have started using UAVs, or drones as they used to be called, to get scanners into place, but we also have a Google Street View type vehicle and use hand-held scanners. We have an exclusive 3D surveying and CAD/Revit modelling department for retrofit, refurbishment and renovation projects so we can support the BIM process from project outset.

"Our tools include ground penetrating radar, which we use on walls and floors to accurately survey the location of reinforcement and existing services. We survey to the BIM model, and we then have bespoke software that makes viewing and interpreting the data easier for the non-technical person – usually the person paying the bills. We can give them a Google Street View-style view of the project."

Augmented and virtual reality up next

Augmented reality (AR) is the next step-up in viewing a site, where computer generated virtual reality (VR) imagery is superimposed on a real-world view to create a composite image. The AR VR Innovate conference in Croke Park on April 28 aims to explore the business case for AR and VR in a number of vertical markets. Organiser Alex Gibson says that at present the technology is largely being used for marketing via smartphones, but it does have construction industry applications. US company DAQRI, which has European headquarters in Dublin, claims to have developed the world's first wearable human-machine interface.

"They demonstrated their smart helmet at our last conference," Gibson says. "In construction, its applications would include viewing where existing underground services were buried or what a new construction might look like from different angles."

Already, BIM is proving a life saver – the New York Fire Department now has access to a BIM database that gives fire crews vital information about the layouts of buildings, all accessed via an in-cab PDA as they rush to a fire scene. How long it will be before insurance companies start giving rebates to customers who have BIMs for their properties is anybody's guess. But that will certainly be another driver towards making BIM mainstream.



UK to ramp up from Level 2 to Level 3 BIM

Level 2 BIM, which will be mandatory on UK public contracts from this April onwards, involves managed 3D environments created in separate discipline-based models (architect, structural engineer, mechanical and electrical engineer, etc.) These separate models are capable of being assembled to form a single federated model, but each model does not lose its identity or integrity.

Level 3 BIM involves all parties working with a single collaborative, online, project model, which typically will include data on construction sequencing (4D), costing (5D) and project lifecycle information (6D). When 4D, 5D and 6D information is added to a BIM Level 3 model, it can be referred to as integrated BIM or iBIM. Fully implemented Level 3 BIM includes data relevant to the whole lifecycle of a building – from how to manage HVAC systems and schedule maintenance programmes to how to dispose of the fabric of the building when it is decommissioned many years or decades from now.

In the UK, a Government think-tank is already looking at how soon a Level 3 BIM mandate can be introduced.

Murphy Surveys is surveying more than 250 TK Maxx stores across Europe to create a BIM model for each store's refurbishment and renovation programme.

MEASURED BUILDING SURVEY OF THE RECORD TOWER, CHAPEL ROYAL AND ADJOINING STATE APARTMENTS OF DUBLIN CASTLE BY MURPHY SURVEYS

GROWTH DIAGNOSIS FOR ASIAN HEALTHCARE MARKETS

Gordon Smith finds out which Asia-Pacific markets should be on the prescription list for Irish companies targeting healthcare industry buyers.

It's no surprise to find market watchers forecasting strong growth for healthcare throughout the Asia-Pacific region. It has some of the world's most populated countries, and rising incomes are creating a middle class that's willing to spend more on high-quality healthcare. A less welcome effect of greater affluence is increased exposure to western-style illnesses such as heart disease and diabetes. What's more, many governments are keen to introduce universal health insurance schemes, which would swell the number of people availing of healthcare and related services.

Frost & Sullivan estimates the Asia-Pacific healthcare market will grow at more than twice the global rate by 2018 (12.8 per cent compared to less than 6 per cent), and forecasts healthcare expenditure across the region will almost double by then.

This is a view shared by Graham Reeves, VP and general manager for Asia with Creganna. "If you look at the healthcare industry as a whole, the US and Europe are pretty flat in terms of growth, prices are coming down, all the payers and providers are looking to cut costs, and there aren't a lot of new people entering the healthcare system," he told *The Market*. "But in Asia, you have markets that are growing, governments trying to incentivise better healthcare, and people moving into median wage rates. This is where you need to be from a growth perspective."

Creganna has been supplying customers in Asia for more than a decade, and the region now brings in just under 10 per cent of its global turnover, which was close to €220 million in 2015. "We see an opportunity to double our current revenue here in the next three to four years. We see massive growth opportunities across the region," says Reeves.

PERSPECTIVE

John Shiel, a technology development adviser in Enterprise Ireland's life sciences division, says there are three main areas

of opportunity across Asia for Irish healthcare and medical technology providers. The first involves finished medical devices such as minimally invasive devices like balloon catheters to treat vascular diseases or reduce blockages around various areas of the body. The end market for these devices could be clinics, hospitals or physicians.

The second area is diagnostics, in particular point-of-care testing that can be done very quickly at a patient's bedside to check blood sugar levels.

The third area involves Irish companies that can provide products or components to multinationals in those markets or to domestic manufacturers. China in particular has a number of the latter group. Irish companies like Aerogen, Trinity Biotech and Megazyme are already using this model, either supplying a component of a finished unit or providing a complementary product that is bundled with the manufacturer's own offering. Precision-machined components for orthopaedic implants like artificial hips or knees are also in demand.

Shiel cautions that some expanding Asia-Pacific markets are the result of starting from a low base, so growth rates alone aren't enough to determine if there's an opportunity. "You need to know who pays – whether it's the government or the patient. You've got to be prepared to spend some time researching and analysing your market to make sure the people you're targeting can afford to pay for it. Some countries don't have a very established healthcare insurance sector and the state sector may be under resourced, so price might be an issue," he says.

PERSEVERANCE

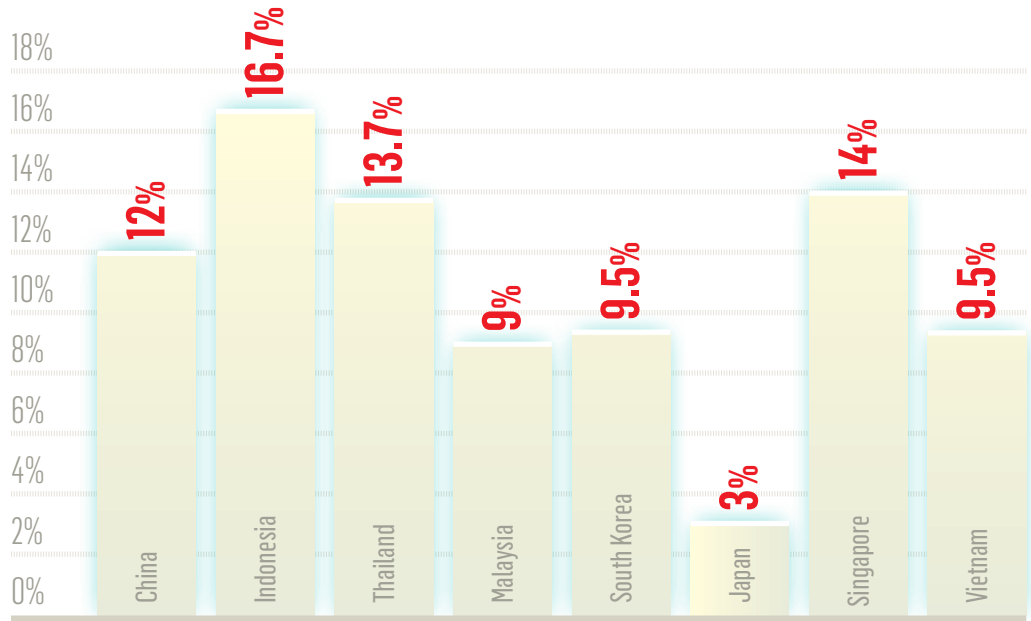
Just because markets are growing, doesn't mean they make decisions quickly. Reeves estimates it took four or five years of "slow and steady progress" in Asia before a big lift with some leading companies in China and Japan boosted Creganna's

THE US AND EUROPE ARE PRETTY FLAT. BUT IN ASIA, YOU HAVE MARKETS THAT ARE GROWING, GOVERNMENTS TRYING TO INCENTIVISE BETTER HEALTHCARE, AND PEOPLE MOVING INTO MEDIAN WAGE RATES. THIS IS WHERE YOU NEED TO BE FROM A GROWTH PERSPECTIVE.

GRAHAM REEVES, VP AND GENERAL MANAGER FOR ASIA, CREGANNA



YEAR-ON-YEAR HEALTHCARE MARKET GROWTH IN ASIA



Source: Enterprise Ireland overseas offices.

annual growth there to between 50-70 per cent for the next three years.

Creganna's experience contains two valuable lessons for other exporters eyeing new opportunities: patience and presence. Long-term planning is essential when setting expectations. "In our market, the time you meet a customer to the time you commercialise could be three to four years. Those customers have then got to win tenders or sales. It's a very long cycle, and that would be true of any company operating there. Also, these companies take time making decisions – it's not like in the US or Europe. Asian people think quite a lot and assess their options. That's a cultural thing, and it is something Irish companies need to be aware of," Reeves says. As for presence, he adds: "In both the Chinese and Japanese markets, having a significant presence with someone on the ground who's consistently building relationships, and who can act as your ambassador, is critical. If you don't have that, it takes much longer to gain traction."

PARTNERING

In terms of its partnering strategy, Creganna originally worked with an agent who represented several medical technology companies in Japan, China and Korea. As business grew in those markets, the company then built up local relationships with 'advisers'. These were typically former senior executives either of multinationals with locations in Asia, or of local companies Creganna had already done business with, or ex-staffers of government agencies and development boards.

"Advisers were crucial to us. An agent is very transactional, whereas an adviser is a consultative-based model. You identify a senior physician or business leader with very strong networks across the clinical segment, who will advise you as to the right model with customers and [who] will also open the door to senior decision-makers. We used an adviser across all those spheres.

They were very different to an agent or consultant," says Reeves.

Many companies encounter regulatory hurdles when selling into Asia, with requirements especially strict in markets like China and Japan. "You might have a medical device that's FDA-approved and has the CE mark, but a new regulatory process may take up to 18 months. The company may even need to produce clinical data so that could lengthen the time needed," Shiel says. He adds there are some positive signs that Japan, for example, could soon soften its stance and accept clinical trial data from other countries. This would make market entry considerably more easy, though he recommends starting the process of working with a local partner to introduce the company and its products even before seeking regulatory approval.

Other perceived barriers may turn out to be less of an issue in Asia. A big fear for some manufacturers selling to China is that their product could be copied. Shiel says the risk itself is not sufficient reason to avoid the market. "If you make sure your product is patented and that patent is registered in China, the patent protection system works. You have a legal remedy and the legal system is quite robust in protecting patents."

Reeves also believes that selling manufactured goods to the world's home of low-cost manufacturing shouldn't hold any unnecessary fears for Irish companies. He recommends they should focus on well-developed markets like China, South Korea and Japan when starting in Asia.

"If you're a very technology-led business with good technology that's innovative, Japan is a great market because they will pay high prices for technology. It takes a long time to get approved but you get much better pricing power. If you have products that maybe aren't as technologically advanced but you have a good cost base and good quality, you will be able to compete effectively in a market like China."

WHAT THE BUYERS SAY

VIEW FROM SINGAPORE

Lloyd Soong is CEO of Pasture Group, whose divisions include a core business in wholesale and procuring vaccines and oncology products, and a healthcare mask and respirator supplier.

What were your impressions of the companies you saw at MedInIreland?

I went there with an open mind, and I was pleasantly surprised. I saw one Irish manufacturer, and I visited one of their facilities. Now they're visiting at the end of the month, and we may work on a project together. In this industry, we know all the big pharmaceutical companies have big facilities in Ireland, like they have in Singapore. It's like an Asian twin and a European twin, so to speak. Ireland is highly regarded, and in Asia, we look up to things that come from Europe and America. If you're European, there are a lot of opportunities. Irish companies should take advantage of this.

What's the best route to market?

A lot of companies in Singapore would like to go into Europe, and maybe Ireland could be their platform. So there is potential for Irish companies to help us to get through to EU markets, and in turn, for Singaporean partners to help Irish companies win business in Asia. Here, we speak Chinese; there are Indians here; I speak Indonesian and Malay. With the government support – and I'm not just talking about financial, but assurance and backing you up – that may help Irish companies move outwards in the market. Irish companies should use the platform here to understand the market a little better.

Pasture recently signed a contract under NDA with a Government agency to supply hospitals in a Chinese province with a population of more than 38 million people, and that's one of the smallest provinces! That gives you an idea of the size of the opportunity. India has kind of plateaued but Japan is a high-value market. Also, the Chinese market is continuing to grow, and I would point out that Chinese people who can afford more don't want 'made in China' products. They want to pay a premium, so the market is changing. People want high-quality products, and they are willing and able to pay, so this is where the opportunity is."

What's the key to convincing buyers?

"If you're talking about a medical product, I want to know who you are and if you're credible. We're not selling stationery; we're selling something that saves lives. It speaks volumes if you have a local presence – a local address or local representative. People are happy to know that you can be found when you need to be found and that they can meet you."

SINGAPORE



VIEW FROM CHINA

Rong Hui Gao is a life sciences consultant and president of G-Med Consulting, which supports biomedical SMEs from the West to develop their business in the Chinese market.

Do you believe there are opportunities in China for the companies you saw at MedInIreland?

"Yes, I think so. The Irish medtech sector has been well established throughout the supply chain, starting from OEM design, components supply and OEM and own-brand companies, whereas the peer group in China mainly run their business independently and are not really integrated. Most of Chinese companies mainly target the low-end segment in their specific sector and find it challenging to move up to the higher-end segment due to the weakness of the quality of manufacturing and R&D capability.



What do buyers in China look for?

Companies in China are looking for innovative technology or products with strong market potential. They are interested in technology transfer, manufacturing and self control. Currently, acquisition, licensing and distribution are the major areas of interest for local Chinese companies. Irish companies first need to evaluate if there is a good market potential for their products. If yes, they could structure a feasible business approach, which could enable them to maximise their commercial potential by teaming up with a local expert.

What are the challenges?

One of the challenges is to understand the regulatory approval pathway. Another is the multiple distribution system and pricing/reimbursement process, which is highly complex. I suggest Irish companies consider seeking a local partner to manage their commercial activities. Also, although the IP protection environment is getting better now, companies still face challenges from some local copycats. To reduce the risk, I would recommend finding an experienced local IP attorney and seeking advice on local IP issues. Let the local partner have incentives to partially share and take responsibility for protecting the IP – for example, to sell a percentage for the equity. Also, be aware of the legal actions when any infringement occurs.





VIEW FROM SOUTH KOREA

Jinwoo Lee is a sales manager for the medical sales department with Seoil Pacific, which imports and distributes respiratory devices such as ventilators and pulse oximeters.

What's your opinion of Irish medtech companies?

Their strength is that Irish companies, especially those producing components or consumables, have good technical skills and well-made products. A weakness is that in the case of finished products or units, they are more expensive than other countries. If they are component manufacturing companies or OEMs, and they make a contract with Korean manufacturing companies, there can be success in the Korean market.

What are the top three sales opportunities?

The top sales opportunities are in the areas of respiratory, emergency and homecare products. Buyers are, in particular, looking for hi-tech electro-medical products.

What are the challenges?

Registration of medical device costs a lot, and it takes a long time – normally one to two years – so Irish companies have to launch their products in the Korean market with a long-term perspective. Secondly, Korea has different registration standards and classes than Europe. Class I Korean medical device can be categorised as Class II or even as medicines in Europe. Also, Koreans tend to purchase from companies in Germany, France, and Britain rather than other European countries. So Irish companies entering the Korean market might do so through a joint venture with a Korean partner.

THE TOP SALES OPPORTUNITIES ARE IN THE AREAS OF RESPIRATORY, EMERGENCY AND HOMECARE PRODUCTS. BUYERS ARE, IN PARTICULAR, LOOKING FOR HI-TECH ELECTRO-MEDICAL PRODUCTS.

ANZ BUYERS LOOK TOWARDS THE SOFT SELL

In Australia and New Zealand, Irish software solutions, rather than devices, have been winning healthcare customers.

As in Asia, conditions in Australia's healthcare market look promising: healthcare spending is increasing, due to factors like a growing and ageing population, advances in medical technology and treatments, and consumers' increasing interest in health-related issues. Deloitte estimates that healthcare spending in Australia will increase from €110 billion in 2013 to \$119.6 billion by 2018.

Hannah Fraser, a market adviser based at Enterprise Ireland's Sydney office, points to three trends: a shift to home and community care, increased access to patient data and personalised health.

"The increasing demand for services threatens to outstrip the ability of the state to supply them, prompting healthcare organisations to rethink the way services are provided," she says. "This creates opportunities for Irish companies with solutions that improve efficiency and reduce costs associated with the delivery of healthcare services."

Innovative solutions that enable enhanced delivery of care in the home and community settings will be an area of great opportunity," Fraser adds. From February 2017, funding for home-care packages will follow the Australian consumer, allowing

them to choose a provider that is suited to them and to direct the funding to that provider.

"Many Irish companies offer excellent solutions to increase the efficiency of the existing healthcare economy via workflow solutions, paperless systems and mobile systems," Fraser says. Irish companies offering cloud-based technology for monitoring and measuring personal health could also tap into the growing consumer awareness of this area."

Irish companies already on the scene include Oneview Healthcare, which scored a win for its patient engagement and clinical workflow technology – first at Epworth Eastern in January 2015, and then across the parent company's group-wide point of care programme.

As *The Market* went to press, news emerged that ATSR had won a significant contract to supply its emergency vehicle control systems technology to the Byron group in Australia, which designs and manufactures emergency vehicles. The deal gives the Tullamore company access to an estimated 75 per cent of the country's ambulance market.

Meanwhile, Sláinte Healthcare has won a contract to supply its Vitro digital medical record software to Bendigo Health, a 653-bed teaching hospital in Regional Victoria that conducts more than 300,000 treatments a year. This was the company's fourth contract win in Australia. Having identified strong opportunities in Australia from meetings held during a ministerial trade mission back in 2012, the company set up a full subsidiary in Sydney a year later, which now employs 12 people.

The company set up a permanent office 'down under' before signing any deals, as CEO

Andrew Murphy explains. "It's a very risky strategy to say, 'we'll do that once we sign a contract'. "If you're in a relatively small company in global terms and you're looking to do business on the other side of world, a conservative buyer – like most health systems are – will want to see commitment. You've got to accept that from a client's point of view, they're already taking a bit of a risk in working with you. You've got to show you're matching them or pre-empting that.

"We make the visits and get a sense of who could be the early movers, move them along a little bit and then invest for a two-year period minimum. Assuming we start converting, that will be the best money we've ever spent. Once you can budget for that, it shows decisiveness and commitment on your part to your potential market. That could save you so much time and get over the barriers to deals," says Murphy.

The move paid off. Murphy says that Australia will account for 30-40 per cent of Sláinte's revenues this year, and sales are growing by at least 30 per cent per annum. The Sydney office will also be a base from which to target sales in New Zealand and large population centres like Indonesia and Vietnam.

Lessons from Sláinte's experience include the importance of getting a first reference site in a market where buyers don't take risks and all talk to each other. If that means making a reduced profit on the initial deal, it's a price worth paying, he believes. "Trying to revenue maximise your first client is a pretty stupid way to enter the market. Any hit you take on your list price, you have to look at as a marketing cost."



MAJOR DRIVERS INCLUDE A SHIFT TO HOME AND COMMUNITY CARE, INCREASED ACCESS TO PATIENT DATA AND PERSONALISED HEALTH.



ANDREW MURPHY
CEO, SLÁINTE HEALTHCARE



Murphy's advice is for companies to vet potential buyers to ensure the point of contact has either sufficient clout or information to help get that first deal in place. Another valuable lesson was the importance of building personal credibility with decision-makers. "Be very clear what you can and can't deliver. Australian buyers are open to innovation and doing things differently, but if you promise something and don't deliver, the entire market could be lost to you pretty quickly," he warns.

DIFFERENT MARKET DRIVERS IN NEW ZEALAND

The market drivers are somewhat different in New Zealand, where universal healthcare provision led to a doubling in spend between 2000 and 2010. Now, the Government is now trying to rein in costs where possible. BMI research shows that the medical device market, for example, is expected to shrink by 0.6 per cent CAGR to 2019. Nevertheless, the situation is similar to Australia as far as Irish companies are concerned: there's a clear demand for solutions that deliver efficiency and meet cost-reduction agendas.

Irish company Valentia Technologies is helping to transform how healthcare is provided across New Zealand. Homecare Medical was the successful bidder for the national telehealth services provider for New Zealand, and it will implement Valentia's Spectrum Suite as the healthcare CRM system across all of the services.

Valentia's general counsel Cian Crosbie explains the importance of software

to meet the needs of care services organisations, which often involve telephone advice and face-to-face consultations in after-hours, multi-location settings.

"You can't pick up a newspaper now without hearing about primary care taking away from secondary care, and the only way that will happen is through technology. It's about delivering efficiencies and accountability, and the telehealth provider Homecare Medical is a really good example of that. The systems we offer provide accountability and transparency: who's doing what work, how they are doing it, and updating all of the key stakeholders across the board, from the patient's relatives and family members, right through to the health authority that might be funding that treatment," he says.

By now, Valentia has become well entrenched in New Zealand's healthcare market, having earlier won a significant deal to supply its CareMonX response management system to the St John Ambulance service. The company's co-founder and president of technology, Dr Ahmad Javad, is based there. This shows the scale of the opportunity for the company, which employs more than 15 people in Auckland to handle local customer support. "If you deliver something well and it works, word of mouth travels and you build up trust. People see the systems running first hand, they talk to their contemporaries. We've been fortunate that it's spread like wildfire. The fact is that we did well in St John to begin with, and it's gone from there," says Crosbie.



BORDEAUX FOR BUSINESS



It's got more than a lot of bottle.
Anthony King takes the lid off one of
Europe's leading hubs for aerospace as
well as a centre for chemicals and the
equine market.



This January, President François Hollande's long-mooted consolidation plans to redraw the map of France became a reality when the country's 22 existing regions were rolled into 13 super-regions. With the move, Aquitaine in the southwest, already one of the country's largest regions, absorbed neighbouring Limousin and Poitou-Charentes, making it what is now France's largest administrative super-region.

With Bordeaux as its capital, to the west Aquitaine's Atlantic coastline runs from the Dordogne River Valley, with its picturesque villages, on down to the Basque country and inland to the city of Pau, nestled at the foot of the Pyrenees. Visitors may think of vineyards and the estates of Medoc, Graves and Margaux. But, in fact, the number one industry for exports in Aquitaine is aerospace, not wine.

Other key industries include chemicals, renewable energy, materials, and of interest from an Irish perspective, a large equine market.

For now, Bordeaux is three-and-a-half hour trip by train from Paris, but this will be cut to two hours in July 2017, when a new high-speed train connection will be in place. What's more, with Aquitaine's larger area comes increased budgets for public procurement and improved clout to attract FDI.

As Irish fans travel to see Ireland playing Belgium in Bordeaux in the Euro finals on 18 June this year, it could be an opportunity to take a closer look at what the new super-region has to offer not just from a leisure, but also from business point of view.



AEROSPACE TAKES OFF HERE

The region is home to the consortium developing Ariane rocket launchers for the European space industry, and an Airbus subsidiary's facilities based near Pau will build a new family of electric aircraft.

History led the southwest region of France to be chosen as a military stronghold for aerospace after World War II. Today, €4bn in turnover is cited for the aerospace industry, and an estimated 700 specialised businesses are at work in Aquitaine.

The aerospace cluster is centred round the Bordeaux Aeroparc, which sits to the west of the city and close to Bordeaux Airport. The technology park sprawls through 1,500 hectares and is home to heavyweights like Dassault, Thales, Airbus and Sabena, representing 15,000 jobs.

The region is also now home to RPAS & Services Aquitaine Cluster with CESA Drones, the first French civilian drone test area.

"Bordeaux is a central place for military jet engine maintenance for helicopters and airplanes, with 50 per cent of the maintenance expenditures performed by private companies," explains Florent Gemehl, inward investment advisor with the region's development authority. "The Ministry of Defence's aeronautics organisation for maintenance and repair is based in Bordeaux and is responsible for tendering €1.8bn purchasing orders each year."

Dassault Aviation, which is historically strong in both civil and military aircraft, recently broke ground on a major maintenance facility in the Bordeaux area. This will do heavy maintenance checks for civilian Falcon jets, with the new facility capable of accommodating six at any one time.

The region is also a leader in turbines for helicopters, high-tech batteries and aircraft cabin

interiors. Turbomeca, a world leader in helicopter turbines, is upgrading its facilities near Pau. Meanwhile, Thales will host an industrial facility in Merignac, close to Bordeaux Airport, that by 2017 will host 2,300 employees in a complex covering 16 hectares. This Thales site will specialise in embedded radar and cockpits.

The region is also home to the consortium developing Ariane rocket launchers for the European space industry, involving Airbus and Safran. And an Airbus subsidiary's facilities based near Pau will build a new family of electric aircraft, E-Fan, which is looking to be the first of its kind certified to European standards.

"We've tried to develop innovative and skilled industries in this region, so aerospace, defence, photonics, digital activities, green chemistry and robotics, for example," explains Marc Etcheverry, an adviser at Invest in Bordeaux.

In the aerospace sector, companies are always looking for new partners to develop their activities, trying to diversify their markets and clients and not be so dependent on giants like Airbus and Dassault.

But is there space for Irish companies to get involved? "Definitely for companies offering very innovative solutions," says Gemehl. "I cannot guarantee that an Irish company can easily create a relationship with a French company [in the aerospace sector], but when there is real added value and innovation is strong, then they will be interested. It's a competitive environment."

R&D AND OTHER ATTRACTIONS

The high-tech aerospace industry in Aquitaine sits beside another industry with its seeds in the 1950s. The Lacq gas field was discovered in 1951 and became an engine of growth for the gas and chemical sector in France, with peak production of gas achieved in the 1970s. Total and other companies worked to reconfigure the area towards green chemicals, renewables and material development.

The Total oil company has its R&D headquarters in Pau – Centre Scientifique et Technique Jean Feger – in the shadow of the Pyrenees. Today it employs a staff of some 2,500. Tens of millions of euro were spent on upgrading labs here in an effort to better understand the geology of oil deposits, and the centre hosts a giant supercomputer.

Aquitaine's industrial strengths are complemented by what it can offer in quality of life. "We have direct access from here to the ocean, which is just 30 minutes from Bordeaux, where you can go surfing or relax, enjoy the beach. And in just over two hours, you can drive down to the Pyrenees mountains, so we have a fantastic location, and it's proved very attractive for bringing young, skilled workers to locate in this area," says Etcheverry.

Irish headquartered Ocuco specialises in software for opticians and optical labs and is number one in the world in this area. The firm's

French subsidiary is based in Bordeaux and has 18 staff. It serves a €6bn market, spread over 12,000 optician stores, and is number three in this market.

"There are many benefits of working in Bordeaux," says Eric Huet, managing director of Ocuco France. The way of life is more attractive than busy Paris, and it is easy to hire IT staff, given the region's strengths in all areas of engineering. However, most of his big clients are headquartered in Paris, and France remains a centralised country, he adds.

Regional air connections in France are expensive, but Bordeaux is well served with TGV train links to Paris and Toulouse, and the growing regional airport provides easy travel to Paris, Amsterdam and London, says Huet. There are flights between Dublin and Bordeaux during the summer months.

In any case, 90 per cent of Huet's meetings are now of the virtual kind, done remotely, and France, and Bordeaux especially, have excellent broadband connections and good bandwidth. "There are many start-ups in Bordeaux, especially in electronics and robotics, though of course wine remains big business here," he adds. "It remains a very attractive destination for tourists, with its green countryside, forests and vineyards, and the sea nearby, so it's a super attractive region for people to work."

The way of life is more attractive than busy Paris, and it is easy to hire IT staff, given the region's strengths in all areas of engineering.



TOTAL HAS ITS R&D HEADQUARTERS IN PAU

COURSES FOR HORSES

The French thoroughbred industry is in rude health, with funding from internet betting supporting the industry.

The Aquitaine region has long-time links with Ireland and Britain; the Pau Golf Club was founded by two Scotsmen in 1856, the oldest club in continental Europe. Another major sporting interest today is rooted in this history – equine sports. The area around Pau became known by British and Irish soldiers quartered there during the Napoleonic wars and the Battle of Orthez in 1814. “When they retired from the army, they came back here,” explains Babette Schily, business development official and coordinator of a local equine industry cluster.

There are nearly one million horses in France, with the French equine federation the third largest sporting federation in the country, after football and tennis. “There is a huge number of people, 2.2 million, riding horses in France and the federation has more female members than any other,” says Schily. “Which means a huge amount of equipment and materials are needed.”

She recently took an Irish delegation on a tour of the equestrian facilities around Pau, including its hippodrome. Pau is a centre for the region's horse lovers and hosts international events in racing and eventing.

Six Irish companies visited as guests of the SO Horse Alliance. On the trip were Equilume, which offers blue light therapy to boost reproductive efficiency and performance; Nortev, which offers an award-winning nebulisation device for horses; EasyFix, which offers hurdles, fencing and rubber matting products; and Agri Health, which provides equine health products. Also present was a distributor for TRM, which provides equine nutritional products, and Red Mills, a specialist feed company that has been

active in the French market since 1996. A return visit by a French delegation is now being organised, with a trip to Punchestown at the end of April on the cards.

For Kilkenny-based Red Mills, France represents its number-two export market, just behind the UK. French buyers are receptive to newcomers, so long as innovative products or services are being offered. “The market in France is extremely mature and well developed,” says Michael Connolly, business development manager at Red Mills. “But the French do perceive Ireland as having a particular advantage when it comes to horses, particularly in racehorses and thoroughbreds.” Half of the top 50 flat thoroughbred trainers in France now use Red Mills feeds, and it holds around 30 per cent share of the flat thoroughbred market.

“We work on highly technical business relationships. We have a four-stage process in sales, which is customer driven,” says Connolly. The company's products are cooked uniquely using steam, tested and packaged using technology developed at Red Mills.

The equine market in France splinters into around twenty-something sub-disciplines, but Connolly reckons it can be reduced down to three categories – leisure, semi-pro and professional. “The Irish would find their natural place in the professional industry, as expertise is more transferable there.”

The French thoroughbred industry is in rude health, with funding from internet betting supporting the industry. Areas around Pau can boast year-round training facilities, with a mild climate. The ‘4 Stars of Pau’, which combines eventing and horse trials and a carriage competition every year in October, is one of only six horse trials at this level in the world.

Connolly recommends that Irish SMEs considering dipping their toes in the French market be cautious in the initial approach. “The first thing to do is to find the right people. And unlike in Germany or some other parts of Europe where English will do well, in France you really need to speak the language. It was not until we hired our own French nationals that we made significant progress,” he recalls.

“Selecting, finding the right partner is crucially important for long-term success,” he adds. “Starting out with the wrong partner who does not present your products in the right way could set you back for years. That can be said for many markets, but it is particularly true for France.”



WELCOME TO MANUFACTURING CENTRAL

Mike Hogan puts the spotlight on Europe's great internal manufacturing migration to Poland, the Czech Republic, Slovakia and beyond and **Charlie Taylor** looks at some of the Irish companies supplying these production giants.



The globalised world in which we live has dampened our notions of where products and services emanate. Volkswagen may be a German brand, but not all Volkswagens are made in Germany. And while Boeing is clearly American, most of its newer aircraft are assembled in the US via 'risk sharing' arrangements Boeing has with suppliers around the world.

In a European context, the 'Made in the EU' label has further minimised our notions of where exactly European products are made. In parallel, the transplantation of manufacturing to low-cost-labour economies often gives the impression that the majority of production has moved to locations such as China or Vietnam.

One trend that often gets missed is the migration of European manufacturing to EU member countries in Central Europe and to the Eastern European countries they border. This is driven by a number of factors, but largely because these countries offer a long history of manufacturing and well-educated workforces, with average wages somewhat off EU averages, yet they are within or border the EU.

RECOGNISING A TREND

Many in Ireland first became aware of Central Europe as an emerging manufacturing centre with the transition of Dell's computer production from Limerick to Lodz in Poland and the migration of Waterford Crystal glass manufacturing to the Czech Republic. However, the range of products that are now produced in Central Europe may surprise. For example, Fry's Turkish Delight, Cadbury's Crunchie and Curly Wurly as well as Patak's Indian sauces are all made in Poland.

As a general trend, manufacturing jobs in many advanced Western European economies have become increasingly highly skilled, while those parts of production for which high skill levels are not needed have been shifted to regions with lower labour costs such as Central Europe. An exception is Germany, which has maintained Europe's largest manufacturing base through high rates of productivity. It is no coincidence that Central Europe's manufacturing base is highly integrated with Germany.

WHY CENTRAL EUROPE?

The main Central European manufacturing hub now includes large portions of the Czech Republic, Hungary, Poland, Romania and Slovakia. Key to their success has been the ease by which existing supply chains into Western Europe countries, such as France and Germany, can be extended into Central Europe.

Coupled with this has been the trend to pull back from production in China due to increasing wage costs and the wish to contract supply chains to geographically closer locations. This has been greatly aided by substantial capital flows from the EU to Central Europe to fund the build-out of transportation infrastructure such as motorways and rail.

Manufacturing companies relocating to Central Europe are now well served by both multinational and local third-party logistics providers, and there has been a strong build-out of modern warehousing space by the private sector.

MACB, GLANMIRE, CO CORK

Founded in 1992, MacB is a Glanmire-based company that supplies a range of mechanical fasteners, electronic hardware and innovative engineered products. It has been doing business in Poland and the Czech Republic for about 10 years.

"Poland came about because we were supplying Tractech in Sligo (owned by Eaton Corporation) for many years until they transferred production to the Eaton plant near Gdansk in 2006," says John McCarthy, managing director. "After this we continued to supply them from Ireland, and, after achieving the ISO/TS 16949 automotive quality standard, we began expanding our business with Eaton Poland."

"Our business in Czech Republic started with a recommendation from Thermo King Galway that we pursue opportunities with their sister Ingersoll Rand plant in Kolin. The success of this venture led us to concentrate on developing other opportunities in Czech Republic."

Looking to the future, McCarthy believes there are substantial opportunities in Central/Eastern Europe. "About 25 per cent of our business is currently in the region," he says, "and we see strong potential to grow that in the coming years."

CZECH REPUBLIC

The most industrialised country in the EU. Industry accounts for 47.3 per cent of its economy.

POLAND

The third largest producer of TV LCD screens in the world and Europe's biggest producer of domestic appliances such as washing machines and tumble driers.

LITHUANIA

The world's biggest producer of pico/ industrial lasers.

HUNGARY

The largest electronics producer in the Central European region, providing 26 per cent of total regional production.

SLOVAKIA

Remains the world leader in car production per capita, with the production of 183 cars per 1,000 citizens. It's likely to keep this position with planned new investments, including Britain's Jaguar Land Rover.

There continues to be a significant cost advantage for relocation, with blue-collar labour costing 50–75 per cent less than in Western Europe and industrial rents costing 30–50 per cent less. A high-profile example of the trend was the transfer of large portions of Amazon's German business to Poland in 2015, with the construction of two huge distribution and processing centres in Wrocław and Poznań.

The numbers speak for themselves: in 2014 FDI to Central Europe soared by 44 per cent overall. Yet the progress is far from uniform. FDI flows into the Czech Republic leapt 61 per cent in 2014 to €4.45bn. Poland was close behind with a 40 per cent jump to €10.5bn. Slovakia, on the other hand, slumped, with its total of just €361m representing a drop of 19 per cent.

All of the countries in Central Europe are now in competition with each other to attract FDI and are highly motivated to win projects. Central Europe has also learnt that investments can never be taken for granted. Nokia, the Finnish mobile phone maker, closed its factory in Bochum, Germany, transferring some of the production to a new factory in Cluj, Romania in 2008. Just three years later, Nokia shut the Cluj plant and shifted production to China.

As well as attracting FDI, Central Europe must evolve its manufacturing base to move to knowledge-orientated activities based on more indigenous technology and innovation. The 'copy and paste' model of industrial development for Central Europe has worked very well, but now these countries face the next step, and that will depend on investment in research and development, on improving the business environment, on universities and education.

POLAND AND DOMESTIC APPLIANCES

Poland became the largest producer of major appliances in Europe in 2011, overtaking heavyweights Italy and Germany. In 2010, production of major appliances in Poland already accounted for about one-third of total Western and Eastern European production combined, reaching 15 million units, and a year later, it had grown by a further 23 per cent.

Poland's emergence as a production powerhouse in consumer appliances comes as a result of the gradual relocation of the manufacturing plants of Western European players to the East. In 2005, for example, BSH started to move its production of home laundry appliances and dishwashers from Germany to Poland and was followed in 2007 by Electrolux moving production of dryers from Italy. In 2009, the Italian player Indesit transferred its production of automatic washing machines from its plant in Wales to the city of Radomsko.

As a consequence of all this, Poland is developing niches of global manufacturing leadership. Production of automatic tumble dryers, for example, largely outperformed regional growth, making Poland the world's biggest exporter in this niche, ahead of Germany and perhaps even more strikingly given its export dominance, China.

It is not just in the kitchen that Polish production is evident, however. Poland is now the leading European producer of the new

ID TECHNOLOGY, DROGHEDA, CO LOUTH

Established in 1999, ID Technology is a manufacturer of printed and fabricated components such as labels, overlays, control panels, insulators and shields. "We've been exporting to Eastern Europe since 2003. The dominant countries that we support are Hungary and Poland in terms of turnover, but we are operating in other countries as well," says managing director John Clark.

"It became clear to me over time," he recalls, "that there were a lot of risks for us generally because the key business was in Ireland, but it was clear to anyone who had their eyes open that much of it was shifting eastwards. While we continued to grow in the UK, we started looking at Eastern Europe with the support of Enterprise Ireland. We concluded that Hungary offered the best opportunities at that time."

"The key thing I've learnt over the years is that when people are looking for leads in other countries, the first thing they need to do is try to understand the culture and everything follows on from there.

"We don't target the market in a general fashion; we are very specific. We've learnt that things work best when we do thorough research so that we go into the market understanding what opportunities are there and knowing which ones we want."

Poland is the largest producer of major appliances in Europe.

The Czech Republic and Slovakia produce more than five times their levels of domestic automotive demand.

KERRY ABRASIVES, LISTOWEL, CO KERRY

Founded in 2009, Kerry Abrasives is a precision engineering company specialising in the manufacture of customised abrasive solutions. "At the moment we're selling into Bulgaria, Croatia, Hungary, Poland, Romania, Russia, Slovakia and Slovenia," says managing director Liam Brosnan.

"The Russian market has collapsed because of the sanctions. We're probably only doing between 10 and 20 per cent of the business we were doing in 2014. Our product line in Russia is in aerospace and automotive and these were badly hit sanctions-wise. This was upsetting because we put a lot of effort into the market in terms of trials, visits and so on."

Fortunately, Brosnan expects to see growth in Slovakia, Slovenia, Hungary and Poland over the coming years. "We've very focused in what we do and are targeting certain industries. In these places, we recognise that there may only be a few factories that could use our products so we're going full on for them."

"Most of the companies we sell to in Central and Eastern Europe are typically ones that have relocated from Germany, Austria and Switzerland.

"In Poland a lot of the work we're doing there is new and is specifically with local companies. This is because, with the support of Enterprise Ireland, we've targeted companies in certain industries in which we're particularly known for, like the bearing industry, for example. Those firms would have heard of us and so it has made it easier to make inroads there."

generation LCD and plasma TV sets through companies such as LG and Samsung. In 2014, the number of Polish manufactured TV sets reached 19.6 million, of which 13.7 million were flat screen receivers.

THE ASIAN ANGLE

In parallel to migration of FDI from Western to Central Europe, firms from Japan, South Korea and latterly China have targeted Central Europe. Samsung, with the aim of transferring its entire European production to Poland, acquired the washing machine and refrigeration production plants from the Polish company Amica, increasing its local production output by 500 per cent to reach 3 million units.

Its Korean competitor LG also chose Poland for a new washing machine production line, with an annual capacity of 700,000 units. It now produces over 1.4 million refrigerators for European and North African markets.

A NEW AUTOMOTIVE HUB

At the same time, the Czech Republic and Slovakia have emerged as Europe's new automotive hub. The two countries together produce more than five times their levels of domestic automotive demand. It is now unlikely that any major automotive producer would build a new export-orientated automotive plant elsewhere in Europe.

Throughout Central Europe, production and productivity continues to grow, especially as one considers that hourly labour costs in the German automotive sector range from €40-€52. Those costs decrease to €13 per hour in Hungary and to below €5 per hour in Romania and Bulgaria.

Last year, the Czech Republic and Poland overtook Italy in terms of vehicle output, ranking fifth and sixth, respectively, in Europe. Vehicles, likewise, account for a fifth of Slovakia's manufactured exports.

The Italian carmaker Fiat's single factory in Poland makes about as many cars as its five Italian factories combined, with a smaller total workforce. However, production has moved far beyond car assembly. A huge number of small and medium-sized businesses you may never have heard of are producing car parts for German production. The cars have a stamp saying 'Made in Germany', but hundreds of the parts are made here throughout the Central European region.

CONTINUING MIGRATION

The rapid evolution of Central and Eastern Europe's manufacturing facilities, with countries at different stages in their transformation and developing at varying speeds, means that the economic picture could look very different in a few years' time.

Poland, the Czech Republic, Hungary and Slovakia will do well for the next 10 years. However, lower cost Bulgaria and Romania are starting to win FDI projects away from locations such as Poland and Czech. No one country can rest on their FDI 'laurels' as the relentless course of industrial migration continues to move to the boundary of the Central Europe and beyond.



Dos and Don'ts for Winning Business with Central and Eastern European Manufacturers

- Do ask existing customers with affiliates in Central Europe if they have a process whereby you can be classified as an approved supplier, or have a process to become one.
- Do ask existing customers for contacts in the purchasing department of their Central Europe affiliates, or failing same any relevant contacts.
- Do ask for letters of recommendation or satisfaction from existing buyers.
- Do contact the Enterprise Ireland offices in Warsaw and Prague, as they may have contacts within your target company and/or similar companies in the region. If not, they will seek them out for you.
- Do not neglect to translate your company materials into the local language were an affiliate is located. (Top managers may speak and understand English, but your company information may travel within an affiliate and be read by staff hired for their technical rather than linguistic skills.)
- Do remember to check your existing personnel for linguistic skills such as Polish, Czech, Hungarian, Slovakian or Romanian that may be useful in developing relationships with the target company.
- Do ask Enterprise Ireland to check if there are any additional local certification issues aside from usual EU ones, such as endorsements from local industry bodies and/or chambers.
- Do not neglect to visit the affiliate in Central Europe. They will want to see your face, even if you already supply the company in Ireland.
- Do not forget to keep visiting the client on a regular basis, as out of sight is often out of mind.

Enterprise Ireland will be hosting a workshop on Central Europe, including meetings with buyers from the region, on 2 June 2016, at Enterprise Ireland HQ in East Point, Dublin.

Contact

**mike.hogan@enterprise-ireland.com or
ladislav.muller@enterprise-ireland.com for details.**

PPI ADHESIVE PRODUCTS, WATERFORD AND SLOVAKIA

Established in 1970, PPI is a Waterford-based manufacturer of technical self-adhesive tapes for a wide range of applications in many sectors, including the electrical, electronic, aerospace, photographic and audio/video areas.

"We have our headquarters in Ireland and also have a sister company based in Slovakia and are currently exploring new countries to expand in," says Radoslav Markov, Central European head of sales. We have sales people working in Hungary, Poland and the Czech Republic and also cover a number of other countries such as Russia from the Slovakian office. We started in January 2001 so we've been here for 15 years now.

"In the beginning, PPI was completely unknown, so it was definitely a challenge early on but it has gotten easier over the years and now we would be well known in the region.

"The central European region is very strong for the automotive sector which is the key industry that we're focusing on right now. Last year, we appointed a new European automotive specialist to help us develop this side of the business and we would be optimistic about the chances of more deals."

In an era when businesses need to stop merely tinkering at the edges in areas like marketing or internal operations and truly go digital across all interactions, Niall Byrne looks at what's holding companies back and how they can start to set a meaningful digital transformation in train.

HOW TO EMBRACE THE DIGITAL TRANSFORMATION



Think of a digital company, and you'll most likely think of a small, innovative start-up employing a high percentage of under-35s, with activity focused on internet-based products and services.

You'll think of a company that has been digital from day one, whose digital strategy is their whole strategy.

But today all companies need to be digital companies. Whether it's mining, fashion, banking, energy, retail, media, utilities, pharmaceuticals, insurance, telecoms, hospitality or agriculture, large-scale disruption is taking place due to technological change.

THE NEXT STAGE

In recent years, the most effective players have already moved beyond using digital simply for marketing and e-commerce, progressing to harnessing technology to transform their internal operations and processes. However, the next stage is for companies to stretch their boundaries to leverage a broader ecosystem of digital businesses and partners that can help them shape the next generation of products, services and business models.

As some companies rise to the challenge, while others sit it out, a divide is emerging. Capgemini's 2012 report *The Digital Advantage: How Digital Leaders Are Outperforming Their Peers in Every Industry* showed that among traditional companies, those that embraced a digital technology strategy performed better across a range of metrics, including revenue generation, profitability and market valuation.

Beyond this, Accenture's 2015 report *Technology Vision 2015: Stretching Your Boundaries in The Digital Era* outlines how progressive, established non-tech companies are using technology to drive their growth, and with deeper financial resources than their newer tech counterparts, they will become technology leaders in their own right, not just followers.

What's interesting in Ireland is that while traditional companies might struggle with the idea of a full digital transformation, a core of hi-tech 'digital transformers' founded and headquartered here are working across the globe to enable the digital transformation of some of the world's biggest companies.

Their presence was part of what persuaded Steve Muylle, Professor of Marketing and Digital Strategy at Vlerick Business School, to choose Dublin for a recent international digital strategy event. Vlerick Business School, which

has campuses in Belgium and Russia, joined up with Enterprise Ireland to host the event, which was aimed at the financial services sector – an industry grappling with the challenge of truly going digital yet under pressure like never before to do so.

IMPEDIMENTS

Muylle identifies complacency as a major impediment, particularly if a company has remained profitable throughout the digital era so far without embracing it. "Many established companies have a winning formula that's stood to them for decades so their attitude is why should they change it," he told *The Market*.

"When the disruption that is taking place in the market is just taking small pieces of business off them, senior management can overlook the threat. It's death by a thousand cuts. At first you don't realise what's happening, then when the bleeding becomes really bad, you can't stop it."

Paul Prior, director of the Dublin-headquartered management consulting and technology firm Vision Consulting, adds that the existing culture within established companies is an impediment. "If we take the utilities sector, for example, those who run the organisation have usually come up through it in a particular fashion, typically through either process operations or sales," he notes. "They haven't been exposed to digital, and, by the time they get to the top, there's a lack of knowledge and therefore a lack of willingness to take on the challenge of implementing a digital strategy."

Muylle concurs. "Digital transformation requires an organisation to forget a lot about its DNA, which is a hard thing to do. It requires challenging your established systems, structures and processes. It involves taking a new look at not only your organisation, but at the whole ecosystem you have, your value system, your channels, how you interact with upstream partners, how you interact with downstream customers." It's a more open, agile and experimental mindset than traditional companies have historically condoned.

Prior points out that traditional organisations are so used to working in a particular bubble that they are cautious about the types of conversations they can now be having with their client base, conversations that historically wouldn't have happened.

"Take fund administrators, for example, who are engaged in a typical paper-pushing kind of process," he says. "They speak primarily

NOW, TECHNOLOGY IS SO FAST AND EASY TO ADOPT AND TEST THAT IF AN ORGANISATION IS MORE OPEN AND AGILE AND COMFORTABLE WITH EXPERIMENTING, THEY'RE GOING TO FIND THE RIGHT TOOL MORE QUICKLY AT A MUCH LOWER COST.



with their clients on the phone. They're nervous about giving their client any insight into their operation because their commission and fee base operates on the basis they are an efficient organisation and they can meet their clients' needs within particular timescales. They create a power-distance relationship between the process and the customer. A lot of the conversations they have are in a very risk-averse kind of environment."

OPEN AND EXPERIMENTAL ENVIRONMENT

He says this approach is becoming obsolete. "If you think about how you develop a digital strategy, the types of conversations you need to have in order to really understand the functionality that's going to create real traction for your customers is very different. You have to understand you're in an environment where you can be quite candid, you can ask what you really want, and it's a very different conversation to one where you're in a support role and speaking to a client or an internal customer."

He says companies interested in digital transformation have to set up an environment that allows that level of candidness. "A lot of the time digital strategies are based on creating cross-functional, high-performing teams between the customer and the technology expert."

"When people get outside their comfort zone, that's when real advantages accrue," agrees Maeve Kneafsey, CEO, Marketfinder. The Dublin-based software service provider offers cloud-

based tools to help companies increase their online sales and quickly monitor performance and spot opportunities. Kneafsey says that a huge part of the mind-set that underpins any successful digital strategy is a willingness to experiment.

"It used to be the case that when you were making the decision to use a new management tool or build up an information repository, it was a big decision that took a long time. Now, technology is so fast and easy to adopt and test that if an organisation is more open and agile and comfortable with experimenting, they're going to find the right tool more quickly at a much lower cost."

She cites an example of a large mobile operator that decided to hive off a decent chunk of its budget each year to test new tools and try different things internally. The outcome was new ways of doing things with new digital tools that really worked at low cost and no risk.

"Now, you can get three or four employees to test the solutions and find out the one that suits the company best before you commit to the tools," she says. "The experimental phase becomes part of strategy."

FEARS OVER SECURITY AND FRAUD

Headquartered in Cork, Trustev provides technology that scans online transactions in real time to prevent fraud. Diarmuid Thoma, Trustev's VP of Fraud and Data, cites fears over security, data privacy and fraud as other major

concerns for established companies.

“There are regular reports in the media of organisations getting hacked. These aren’t ‘mom-and-pop stores’ either, they’re some of the biggest organisations in the world. If you’re an institution with a good reputation for security in the high street environment, making the leap to digital can seem like a big risk.”

Delaying making the transition for reasons such as this is a mistake, however, believes Thoma. “The reality is a lot of companies are getting dragged into it whether they like it or not. The consumer demographic today wants to do everything online – banking, shopping, communicating. Understanding the customer need is the one thing that’s really going to drive digital. If you don’t have that presence online, you’re going to fail.”

“Fear of fraud can actually cost you more than the fraud itself,” he adds. “When some companies set up an e-commerce site for the first time, they decide to be cautious and take only the safest transactions. It isn’t unheard of for some of these companies to be turning away 25-50 per cent of their transactions. In e-commerce, you’re talking about a fraud attempt rate of about 5 per cent. With fear of fraud, you could be rejecting 25 per cent of your business, so the fear and reality don’t equate.”

Muylle argues that there are two drivers for change. “One is when the industry is really feeling the heat and being disrupted, such as the newspaper industry or the energy sector, and there’s no choice but to adapt. The other driver is visionary leadership, where someone senior in the organisation acknowledges this disruption going on in the market and decides they’re not going to wait until it hits them.”

FEAR OF FRAUD CAN ACTUALLY COST YOU MORE THAN THE FRAUD ITSELF.



HOW TO LEAD THE PROCESS

Companies that take this proactive approach before they’re at the cliff edge have a huge advantage, and Muylle says they can take one of three routes to manage and lead the process.

The first is to establish a digital team within the existing organisation structure. The second is to launch a new spinout business independent of the core business. The third, and the one Muylle says yields the most benefits, is a hybrid approach between the first two.

“If you’re going to keep digital within the boundaries of the established company, it’s crucial to make it a new department that reports directly to the CEO. It’s important not to silo it off in another department, such as marketing, ICT or innovation. The digital department should have a mandate for change and be at the same level as the other departments to be taken seriously.”

A wholly separate digital spinout business will have advantages similar to other start-ups – it will be small, flexible, have greater freedom to act, can match the size of the opportunity in the market – but Muylle warns it won’t have any significant advantage over any other start-up in the space if it doesn’t leverage the scale and expertise the parent company can provide.

For this reason, he extols the virtues of the third option, the hybrid approach. “With the hybrid model, you start in the core business, launch a separate disruptive business, then look at the backend between the two and see how you can exchange resources and expertise.”

In the 1990s, the *New York Times* was an example of an established organisation setting up a new digital business and nearly losing out because of properly failing to integrate the two from the start.

“When existing customers said they wanted to buy digital advertising, the salespeople would offer to sweeten the deal for paper ads by throwing in digital as an add-in. This is not what you want as it dilutes the value of online advertising. The CEO had to step in and tell them to sell online advertising at the market rate and not to include it as a freebie. While at the time online might have been 1 per cent of the business, in years to come he saw it was going to grow to 10 per cent, then 20 per cent, and so on.”

It’s an example that reinforces the point that an effective digital strategy is a long-term strategy that needs to be driven from the top. Ultimately, disruption is coming, and those not surfing the digital wave will be swept under.

Niall McKeown,
a digital
transformation
strategist with
Lonology, provides
a self-diagnosis
test to help
determine how well
your business is
positioned for digital
transformation.

'DOING DIGITAL' OR DIGITAL INNOVATOR?

We hear stories of rapidly growing Irish businesses making it big on the international stage. Some are in financial services; others in pharma. Some are in online retail and others in distribution. There seems to be no common thread to the success.

The industry hype points to the use of better technology and the web as an accelerator to business success. But everyone has access to the vast majority of the same technology, talent and communications. So why do some businesses grow rapidly while others don't?

In my 18 years of helping businesses succeed in a digital world, those businesses that accelerate their growth and achieve more have a different style of leadership, culture and approach to technology than those that simply 'do digital'.

The chart on page 51 outlines the characteristics that separate slow-growing business that are simply 'doing digital' from those digital innovators that experience rapid growth. These characteristics apply to organisations of all sizes. Use it to see how well you score.

- If you share 8 or more of the characteristics of the digital innovator, well done. You're either accelerating your growth in the digital world or you're a few short stops away from doing so.
- If you scored between 5 and 8, then there's work to be done but opportunity is within sight.
- If you scored below 5, stop doing what you're doing. More of the same will not create exceptional growth. The organisation likely needs a digital transformation programme.

CASE STUDY

This is a real world example of a project we worked on last year in the UK. Both businesses A and B principally serve the hospitality industry.

Business A

- Had a turnover of £12m. Within 10 years, their turnover was £230m, most of it coming from online and a profit margin of around 10 per cent on its web sales.
- It was traditionally a catalogue-based business, used telesales and had no sales reps on the road.
- It dealt with both consumers and businesses and set out its stall to be the lowest-cost operator with the highest inventory selection and next-day delivery.

Business B

- Had a turnover of £30m. Within 10 years, it had grown its turnover to £36m with only a small percentage of its sales online and a margin of -2 per cent.
- It had a salesforce on the road and built long-term relationships with hotel managers, helping them make important selections on non-food item goods and services.
- It was strictly a business-to-business concern. Its own fleet of vans travelled the country every week for deliveries and focused on service rather than cost.

COMPANY A



COMPANY B



Both businesses sold similar products, had identical technology infrastructure, access to the same pool of people and they both had skilled digital marketing teams. Both had the same ambitions for growth. So why did Business A succeed way beyond business B? The answer is actually visible on the website of Business A.

If you think it has something to do with web design, the price of special offers or the call-to-action triggers, you'd be mistaken. Those drivers were tested and made no significant difference to business success. So what did?

The answer can be found at the top of Website A. Business A focused on having an encyclopaedic stock, ensuring that no matter what your need they had it covered. Business B could get you what you wanted, but it helped if you knew what it was you wanted first.

Business A tackled 'channel conflict' early. They made a decision to work with both B2C and B2B customers at the same time, allowing them to reach a new customer base. Business B were strictly trade only.

Business A has a simple pick-pack-post goods outward and inwards system, allowing for low cost return-to-stock items. Business B discouraged returns of any nature, never mind FREE returns.

Business A disbanded its fleet of trucks in favour of a more efficient outsourced model, allowing for next-day delivery anywhere in the country. Business B kept its fleet of trucks and asked customers to accept two or three-day delivery times.

Both businesses claimed "Low Price Guarantee". It did nothing but harm to both businesses.

Business A gave a full refund for any unused goods returned within 90 days. Business B found this unimaginable.

These are simply symptoms of what was going on within both businesses. The reality is that business A became a digital innovator early. It innovated, used data-driven decision-making, resourced new ideas, had clarity in direction and knew how it wanted to shape the market. Business A had a different leadership approach to business B.

The story doesn't end there. Business B has started its own programme of digital transformation. They don't now compete head-to-head with business A. Instead they are innovating around new business models that help utilise their home advantage of having a highly qualified sales force. Business B is now growing faster than Business A because its innovations around customer purchasing habits and product utilisation are helping it win tenders it wouldn't have normally won.

Everyone has access to the vast majority of the same technology, talent and communications. So why do some businesses grow rapidly while others don't?

DIGITAL INNOVATOR OR DOING DIGITAL?

Put a tick in the box that best represents your business characteristic, and see how well you score.

DIGITAL INNOVATORS		'DOING DIGITAL'	
Set the organisation's vision and work hard to diagnose (but not solve) the near-term challenges.	<input type="radio"/>	Leaders don't provide a clearly articulated vision or purpose beyond making money. They set targets rather than diagnose challenges.	<input type="radio"/>
Business strategy contains no mention of technology. It assumes that the technology will be there when required, in every corner of what they do.	<input type="radio"/>	Mistakes the use of technology as giving competitive advantage when it often only creates operational efficacy.	<input type="radio"/>
Have a single strategy called a "business strategy". The business strategy has many plans of action to achieve desired outcomes. The business uses modern digital/data driven frameworks to create the strategy.	<input type="radio"/>	Every plan is called "a strategy" in order to elevate its importance. Most strategy documents are complex operational plans. When you ask a team member; "What's the strategy" they reply "Which one? We've loads of strategies!"	<input type="radio"/>
Reimagine how things could be.	<input type="radio"/>	Digitise the existing product or service.	<input type="radio"/>
The organisational leaders change their entire business to ensure they have a unique value proposition that out-performs competitors or doesn't compete at all.	<input type="radio"/>	The organisational leaders hire a digital marketing person, give them a laptop and encouragement and ask them to promote the value proposition that already exists.	<input type="radio"/>
The organisational leaders build formal, measured, deliberate cycles of testable innovation and implement the most promising.	<input type="radio"/>	The organisational leaders, at best, will listen to new ideas but have no structured approach to innovation.	<input type="radio"/>
Co-create and innovate with customers.	<input type="radio"/>	Claim to be 'customer focused' and service the customer well.	<input type="radio"/>
Use data-driven decision-making at every opportunity.	<input type="radio"/>	Use subjective decision-making.	<input type="radio"/>
Work hard to diagnose capability gaps within the organisation – in particular their own knowledge gaps – and then seek to fill them.	<input type="radio"/>	The leadership team ignore personal training and self-improvement, and staff education plans aren't linked to the future state of the organisation.	<input type="radio"/>
Marketing leaders strive to have their organisation referenced for its innovations. Their plans examine their market position, competitor threats and new market opportunities, and they use evidence to validate customer behaviour.	<input type="radio"/>	Marketers constantly strive for more 'Likes'. Their plans revolve around social media, video streaming, content management systems, advertising, Pinterest and the latest technology trends.	<input type="radio"/>

Ionology helps complex businesses seeking rapid growth in new markets go through digital transformation. For its Digital Transformation Gap Analysis, see www.ionology.com.

New gadgets show a shift to cloud services and the dawning of the age of virtual reality. Ian Campbell reports

GADGETS HEAD TO THE CLOUD



Toshiba Chromebook 2 €290

Toshiba has revamped its 13-inch Chromebook, adding a full 1080p HD screen, a bright and vivid display that's a huge improvement over the 720p predecessor. It also soups up the performance with an Intel Celeron 3215U processor and 4GB of RAM, giving it more punch that makes light work of keeping multiple tabs open at the same time. Battery life still comes in at around eight hours.

Thin, light (1.3kg) and silver, it could be mistaken for a MacBook at a distance, but closer inspection reveals a flimsy plastic body that starts to explain the low price point. That and the fact that the whole point of Google's Chromebook is to have a web-based operating system with a modest 16GB hard drive that avoids the clunky start-up and ever-decreasing performance of a traditional laptop.

Having lived with the first model for over a year

with no change in performance, I consider it a major selling point. Plus the fact that if you do lose or break a sub €300 device, it's a lot less painful than it would be with a €1,000 laptop.

Some will struggle with the idea of laptop that doesn't store their favourite photos and music, and the absence of Skype and iTunes is annoying, but there is still much to admire in the Chromebook concept. With the Tosh 2 it's even faster to use, as long as you have a decent internet connection. I do most of my work in Google Docs and Office 365, only downloading documents when I know I'm going to be offline. When you get a connection back, simply upload and away you go.

The Chrome App Store give you access to other applications in a smartphone-kind-of-way, but its real purpose is to support no-nonsense connectivity to the web and cloud-based services. It does the job effortlessly.

Canon PIXMA MG6851 all-in-one printer

€190

The all-in-one inkjet has become so commoditised that manufacturers make the bulk of their money back on subsequent cartridge sales rather than the upfront cost of the printer. They just hope that you won't ditch their own brand of consumables for cheaper copies. Canon strengthens its case by adding a sixth colour, grey, to supplement the usual five, with the promise of a better dynamic range.

To be fair, the results are good – the PIXMA MG6851 delivers excellent quality photographic prints with subtle blacks and dynamic colours. You get high-resolution 9600dpi all the way up to A4 size. A replacement inkjet pack for the Canon PIXMA MG6851 will cost around €55 but it's a price worth paying if you plan to use it for printing photographs.

Design-wise, Canon brings Apple-style aesthetics to a device that is never going to win a beauty contest. Print, copy and scan functionality has been integrated into a low slung design with minimal buttons. An 8.8cm colour touchscreen lets you set up printing options without a PC or separate connected device.

WiFi functionality is a strong selling point. Compatible with Apple AirPrint and Google Cloud Print, it enables you to print directly from your iPhone, iPad or Android device. Canon apps are available for mobiles to make the task easier. Multiple card slots are also available, enabling photographers to take their pictures straight from their cameras, bypassing the need for a computer.

There are much cheaper sub €100 printers available – including other members of the PIXMA range – but the premium you pay for the MG6851 is worth it in terms of features and performance. And yes, a printer can look cool.



Peering into the future at GSMA Barcelona



Along with the CES expos in Las Vegas in January, GSMA Mobile World Congress is one of the great shop windows for new gadgets coming down the track. Held last month in Barcelona, virtual reality was the talk of the show.

..... Samsung set the ball rolling by handing out its Gear VR headsets to delegates. Facebook owns Oculus which helped develop the Samsung Gear VR, giving CEO Mark Zuckerberg the excuse to take to the stage and showcase the technology. You can click on a screen image and drag yourself around a 360-degree video view, or use a VR headset for the full experience.

..... While the immersive quality of VR images was generally well received, the big question remains about people's willingness to wear the headsets. Gamers perhaps, but the failure of 3D TV suggests a wider audience may be harder to convince.

..... For a massive event that's been fuelled for a decade by the explosion in mobile devices, there was a sense that smartphones may have peaked in terms of innovation and new form factors.

Sony was there with new Xperias that were "reimagined" rather than redesigned, small tweaks and some more personalisation but nothing radically different. Smart power management that promises up to two days' battery life was the most eye-catching upgrade.

..... Samsung unveiled the S7 which had punters trying to spot the difference with the S6. In fairness, there's a larger 5.5-inch screen, bigger tiles on the touch screen, and a microSD card slot has been added for extra storage options.

..... Windows Phone has a perilously low market share (1.7 per cent according to Gartner), but that hasn't stopped HP launching the HP Elite x3. The most interesting Windows device on show at Barcelona, it has a 5.96-inch AMOLED screen, 64Gb of internal storage and a fingerprint and iris scanner.

..... HP is pitching it as part of a Microsoft-based ecosystem for business users that spans mobile, phablets, laptops and the desktop. Microsoft's Surface tablet continues to gain transaction and will be further helped by Huawei, which unveiled a 12-inch version that's cheaper than Microsoft's and adds a fingerprint sensor.

Lucille Redmond's
roundup of good
business reading.

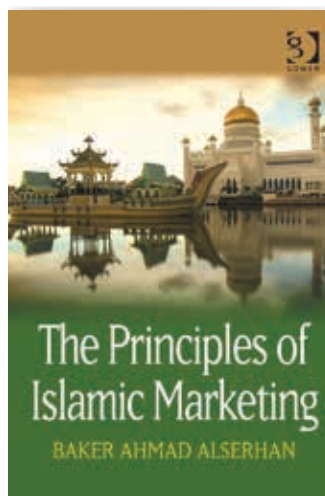
DIG IN FOR A DEEP READ

Don't put women in your TV ads if you want to sell to Muslims, advises Baker Ahmad Alserhan's *The Principles of Islamic Marketing*. No surprises there. In your commercials, "use conforming backgrounds, not rebellious ones", he writes, use animations, not humans; quiet Islamic music, not loud Western music.

But what about telemarketing? That's different. "When calling homes, employ women, not men. Arab and Muslim men in general are very sensitive about women in their families talking to male strangers, even on business-related matters."

This fascinating book opens out Islamic business thinking, based on an ideal of strict honesty, the *maqasid*, or aims, of Sharia law, under which trade is *halal* – permitted; but usury is *haram* – forbidden.

Islamic marketing is based on the organisation of the souk, in which *hisbah* – the doctrine of accountability – was



The Principles of Islamic Marketing
is really useful
for anyone
contemplating
trade with Muslim
communities.

enforced by a market manager called the *muhtasib*, who inspected cleanliness, weights and measures and quality of goods and ensured that prices were clear and neither unfairly high nor undercutting, and

that the market was open to all, with nobody grabbing an advantageous place and hanging on to it. Children were sent in as mystery shoppers – and women-only markets had female *muhtasibs*.

Muslims comprise a huge and increasingly affluent market of 1.4 billion people, "with some Muslim countries being among the richest in the world by far", writes Alserhan. IMF chair Christine Lagarde announced in 2009, when she was French finance minister, her intention to make Paris "the capital of Islamic finance". Japan is targeting Muslim tourists – a demographic offering big profits. Such multinationals as McDonald's, L'Oréal, Nestlé and Unilever are producing *halal* products.

Muslims are a powerful trading bloc – for example, Coca-Cola spent 14 years mostly out of reach for this fifth of the world's population after the company refused to join the Arab League's economic boycott of Israel. Meanwhile its rival PepsiCo

captured this market.

The duty – *wajib* – of a company under Sharia is to pursue the good of society, not its own profit. So lotteries are forbidden, as is the sale of alcohol – and a company involved in either can have its other products tainted by this.

The Principles of Islamic Marketing is really useful for anyone contemplating trade with Muslim communities. It gives an in-depth guide to a kind of society familiar to many Irish people, based on common conservative values. An essential read.

Deep Work, already a cult book among programmers, is about a way of working that



has long been a standard value for writers and artists.

Ernest Hemingway wrote about it in his memoir of his life as a young writer in Paris in the 1920s, *A Moveable Feast*: “I had learned already never to empty the well of my writing, but always stop when there was still something there in the deep part of the well, and let it refill at night from the springs that fed it.”

Cal Newport, author of *Study Hacks* and *So Good They Can't Ignore You*, brings the

same ideas into the life of the knowledge worker in an open-plan office, or a ‘creative’ working under pressure. He cites some unexpected gurus of deep work: Carl Jung, Charles Darwin... Bill Gates? “Microsoft CEO Bill Gates famously conducted ‘Think Weeks’ twice a year, during which he would isolate himself (often in a lakeside cottage) to do nothing but read and think big thoughts. It was during a 1995 ‘Think Week’ that Gates wrote his famous ‘Internet Tidal Wave’ memo that turned Microsoft’s attention to an upstart company called Netscape Communications.”

Newport offers magical names for their intensity of focus and clarity of work: Nate Silver, whose US election forecasts consumed some 70 per cent of the *New York Times*’ website’s redirects before election day 2012; Ruby on Rails creator David Heinemeier Hansson, whose software runs Twitter and Hulu; Silicon Valley venture capitalist John Doerr.

The comedian Jerry Seinfeld, he writes, insists that the way to write good jokes is to write every day. Seinfeld created the ‘chain method’: every day that he writes, he crosses out that date on his calendar with a big red X. “After a few days you’ll have a chain. Just keep at it and the chain will grow longer every day. You’ll like seeing the chain... Your only job next is not to break the chain.”

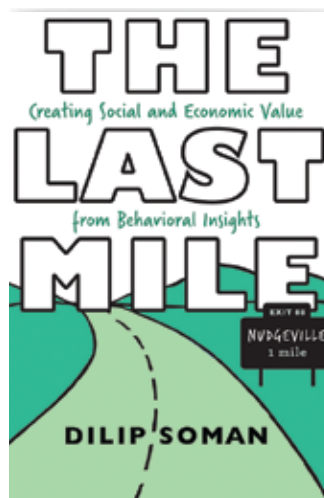
Newport suggests methods for entering the state of deep work: strict division of time, a set starting time every day, a rock-solid routine, ritual: where you work, at what time, rules of productivity, what snacks or walks you use.

“A commitment to deep

work,” he concludes, “is not a moral stance and it’s not a philosophical statement – it is instead a pragmatic recognition that the ability to concentrate is a skill that *gets valuable things done*. Deep work is important, in other words, not because distraction is evil, but because it enabled Bill Gates to start a billion-dollar industry in less than a semester.”

The *Last Mile*, by behavioural scientist Dilip Soman, is about how to make people take that action that makes them buy your stuff: open the envelope, click on the link, walk into the shop.

The term ‘the last mile’ comes from the telegraph. A



message could zip across the Atlantic almost instantly. The delay happened when the telegraph boy carried it the last mile to your address – or for a business or organisation, when someone has to take any action to buy its goods or use its services.

He gives a telling example of the power of inertia stopping people taking action, even on something they knew was right: in Denmark a study found only 4.25 per cent of people signed up for organ

donation; in France 99.81 did. The difference? In France, you had to opt out, and in Denmark you had to opt in.

All kinds of products fail because of ‘last mile’ problems – and 75 per cent of all new products fail. But you can change that. Soman has a wonderful story illustrating how an action can change value, when a travelling salesman in Asia offered to leave a beautiful, expensive carpet in his home for a fortnight; even signed a paper absolving Soman of all responsibility to buy it.

Soman was very happy with himself when he refused to buy the carpet at the end of the fortnight. Then the salesman rolled it up, smiling, put it over his shoulder and left. Soman turned back and entered his living room – now ugly and empty. “By getting me to keep the carpet, he had managed to convert a potential gain for me into a potential loss.” Mind you, he managed to resist chasing the salesman and buying it, but you can still taste his regret.

Most books are worth buying in print. This is one that might be better as an ebook – it’s dense and complex as a printed book, but, as an ebook, it is searchable and much more reader-friendly. Definitely it is a book that every retailer or marketer should read.

.....
Principles of Islamic Marketing
by Baker Ahmad Alserhan; Gower

Deep Work: Rules for Focused Success in a Distracted World
by Cal Newport; Grand Central

The Last Mile: Creating Social and Economic Value from Behavioral Insights
by Dilip Soman; Rotman-UTP

From Enterprise Ireland's Market Research Centre team.

MARKET INTELLIGENCE

Enterprise Ireland's Market Research Centre hosts Ireland's most comprehensive collection of business intelligence resources and is staffed by specialists who can assist EI clients find company, market and project information.

The centre subscribes to a wide variety of databases, including

- Frost & Sullivan
- Forrester
- Euromonitor Passports
- AMA Research
- BvD Orbis

The reports summarised on these pages are just a sample of the type of information available. Follow us on Twitter @EI_MRC to see further examples of recent reports available or check out the MRC site at www.enterprise-ireland.com/MRC

EI clients can access the MRC by emailing market.research@enterprise-ireland.com or by phoning 01-727 2324. Access to all resources is governed by contracts with our providers.

ICT/SOFTWARE

TechRadar™: Internet of Things, Q1 2016

Forrester

January 2016

This report is aimed at helping infrastructure and operations professionals to advise business executives on taking advantage of the transformational potential of the Internet of Things (IoT). It identifies and investigates the 19 most important IoT technologies, defining the current state, business value and long-term prospects for each.

Unified Communication and Collaboration: Technologies and Global Markets

BCC Research

January 2016

This report aims to provide an understanding of the drivers of the unified communication and collaboration market and how it is expected to evolve over a forecast period of five years from 2015 through to 2020.

Indian Tech Market Outlook, 2016 to 2017

Forrester

February 2016

According to this analysis, in 2016, India will outpace all Asia Pacific countries in technology spending growth. Rapidly maturing customer expectations will force businesses to deliver better digital experiences and improve operational agility. CIOs are feeling the pressure, as they need to support digital business initiatives with adequate business technology investments.

Biometrics: Technologies and Global Markets

BCC Research

January 2016

This report explores the global and regional markets for biometric technologies and devices, identifying newer markets and exploring the expansion of the present application market for various devices over the forecast period from 2015 to 2020.

Asia Pacific Tech Market Outlook for 2016 to 2017

Forrester

February 2016

CIOs in the Asia Pacific (APAC) region face a wide range of tech-market outlooks, depending on country and tech product and service category. While the region's tech market growth in local currency terms will average around 4 per cent in both years, India, China and some ASEAN countries will grow twice as fast, while Japan and Australia will grow at half or less than those rates.

Magic Quadrant for Business Intelligence and Analytics Platforms

Gartner

February 2016

According to this analysis from Gartner, the multi-year shift from IT-led enterprise reporting to business-led self-service analytics has passed the tipping point in the business intelligence and analytics platform market. Most new buying is of modern, business-user-centric platforms, forcing a new market perspective and significantly reordering the vendor landscape.

Global Big Data Analytics Market

Frost & Sullivan

December 2015

This research on the global 'Big Data' analytics market is focused on two end-user segments: data discovery and visualisation and advanced analytics. The regional forecast spans North America, Latin America, Europe, the Middle East and Africa and Asia-Pacific over the period from 2015 to 2022.

Global Online Web and Mobile Analytics Market

Frost & Sullivan

January 2016

Focusing on the global online web and mobile analytics

market, this analysis addresses market drivers and restraints, global and regional revenue forecasts, vertical analyses, the competitive landscape, distribution channels, market demand, technology and general market trends and predictions for the industry.

FOOD, RETAIL AND CONSUMER PRODUCTS

Brief: US Cross-Channel Retail Forecast 2015 to 2020

Forrester

January 2016,

While online retail continues to grow rapidly, digitally-influenced offline retail is also significant and growing. Shoppers often research online in big and small ways across every shopping category before completing transactions in physical stores. This report, an annual update of Forrester's Web-Influenced Retail Forecast, lays out the current state of web-influenced sales in the US and the factors that will drive growth through to 2020.

The Evolution of Global eCommerce Markets

February 2016

Forrester

Consumers around the globe are migrating online, with shopping increasingly becoming a key part of the online experience. However, different countries vary greatly in their level of e-commerce maturity. This report outlines how e-commerce markets are shifting over time and what companies can expect as they prepare to enter and then grow in a variety of different global markets.

Growth Opportunity Analysis of the European Food and Beverage Market

Frost & Sullivan

February 2016

This report assesses the current trends and predictions expected to impact the European processed

food and beverage market and associated ingredients in 2016. Key anticipated trends growth include the growing need for food traceability and safety, increased demand for free-from foods and meat substitutes and product sustainability. Frost & Sullivan predict that consumers in most European countries will demand more foods that originate from their respective countries due to the perception of better quality. Furthermore, food companies that show that products are manufactured in a sustainable manner will have a competitive advantage.

Whey Protein Products: Global Markets

BCC Research

January 2016

This report analyses whey protein ingredients and their adoption across various geographic markets. It reviews the main whey ingredient categories and discusses key end markets, pricing, the competitive landscape and the unique challenges faced by each category in the future.

Retailing in the United Kingdom

Euromonitor

January 2016

Euromonitor predicts stronger value sales growth for overall retailing over the forecast period from 2015 to 2020, but growth rates will remain low. This will chiefly be due to strong price competition, partly due to dynamic sales growth for internet retailing, as this channel offers bargain prices across a wide range of areas. Discount formats are also expected to perform well across store-based retailing, with discounters, for example, gaining share in grocery retail and fixed-price variety stores seeing a strong performance in mixed retail. However, luxury retailing is also expected to perform well in the

forecast period, benefiting from strong tourist demand and a rise in economic confidence.

Bathroom Installation Frames and Systems Market Report - UK 2016-2020 Analysis AMA

January 2016

This report provides a review of the bathroom installation frames industry, covering water closet frames and systems, wash basin frames and other frames and systems. It includes commentary on future prospects and implications for suppliers and the industry as a whole.

Webinar: 10 Trends to Watch in Fast-Moving Consumer Goods in 2016

Canadean

January 2016

This analysis of innovation in the fast-moving consumer goods sector explores how consumer preferences towards protein are changing; why fat being no longer seen as the health villain it once was is guiding new product innovation; and where support is coming from for the evolving concept of 'food you can drink'. It also explains how personal-care routines are becoming more detailed and specific and reviews some of the drivers behind the growing trend towards anti-pollution beauty products.

US Bread Production Profile IBISWorld

January 2016

Focusing on US operators in the bread industry, this review explores major players, the supply chain and main activities. It concludes that the continued development of healthier bread will aid industry performance.

Super Premium Beauty and Personal Care in France

Datamonitor

February 2016

According to this report from

Datamonitor, the super-premium beauty and personal care market in France recorded one per cent value growth in 2015 to reach €2.4bn. Super premium sets/kits and super premium fragrances recorded the fastest value growth over the year. The category faces growing competition from premium brands available in chemists/pharmacies and drugstores/parapharmacies, as well as low-priced mono-brand outlets. This report also explores how the super-premium beauty and personal care adjusted to lower purchasing power in 2015.

CLEANTECH, LIFE SCIENCE, CONSTRUCTION AND INDUSTRIAL

UK Construction Benchmarking Report

Plimsoll

January 2016

In this latest Plimsoll analysis, the 1,200 largest companies in the UK construction industry have been assessed, valued and rated on their attractiveness for takeover. With an up-to-date opinion on each company, showing those in difficulty, the fastest growing and more, it indicates that 179 companies are in danger; 281 companies are ripe for takeover; 185 companies are making a loss and 122 will lose over a quarter of their value.

2015 Healthcare Research Review

BCC Research

January 2016

This 2015 Healthcare Research Review includes excerpts from six of BCC Research market assessments published in 2015. It reports that the laboratory-developed test market within the US is expected to grow from \$9.7 billion in 2014 to nearly \$17.7 billion in 2019. The radiation therapy market totalled \$5.8 billion in 2014 and is expected to reach \$8.1 billion in 2019. Meanwhile, the global market

for minimally invasive medical devices and equipment reached roughly \$15.4 billion in 2014 and is expected to reach \$21.5 billion in 2019.

MRI Systems Market to 2020

GBI Research

May 2015

This report discusses the market, competitive landscape and trends for the high-, mid- and low-field MRI systems market segments. It also analyses each segment's pipeline products and gives details of important merger and acquisition deals.

Transformational Trends in the Global Building Energy Management Solutions Industry

Frost & Sullivan

January 2016

In the era of smarter buildings, the future of energy management is being transformed by the Internet of Things (IoT), big data and technology-enabled customer-centric business models. The study looks at the five most important transformational trends that will shape the building energy management solutions industry over the next five years and the likely visionary outcomes in the industry by 2025.

Housing Associations Market Report - UK 2016-2020 Analysis

AMA Research

January 2016

This report provides a quantitative and qualitative analysis of the private registered providers (more generally known as housing associations) market, focusing on market size and trends, housing mix, new development pipelines and future prospects.

An update on customs compliance, trade regulations and negotiations

TRADE REGULATIONS, INFORMATION AND NEGOTIATIONS

The EU and Vietnam finalise trade deal

The European Union and Vietnam have finalised talks for a free trade agreement, which will help unlock a market with huge potential for EU firms. The agreement is also aimed at supporting Vietnam's transition towards a more competitive, smarter and greener economy and helping to trigger a new wave of investment in both directions, supported by an updated investment dispute resolution system.

"Vietnam is a vibrant economy of more than 90 million consumers with a growing middle class and a young and dynamic workforce. Its market has great potential and offers numerous opportunities for the EU's agricultural, industrial and services exports," commented EU Trade Commissioner Cecilia Malmström.

EU and the Philippines launch negotiations for a free trade agreement

Negotiations have commenced on an EU-Philippines free trade agreement (FTA) covering a broad range of issues, including elimination of customs duties and other barriers to trade, services and investment, access to public procurement markets, as well as additional disciplines in the area of competition and protection of intellectual property rights. The prospective agreement will also include a comprehensive chapter that will ensure that closer economic relations between the EU and the Philippines go hand in hand with environmental protection and social development.

The Philippines has been one of the fastest growing economies in Southeast Asia in the recent years, with a market of 100 million consumers.

EC takes action to open up international procurement markets

The European Commission has presented a revised proposal for an International Procurement Instrument - a tool to promote open access to public procurement markets around the world. Currently, only a quarter of the world's annual procurement market is open to international competition.

The new instrument would allow the Commission to initiate public investigations in cases of alleged discrimination of EU companies in procurement markets. In case such an investigation would find discriminatory restrictions vis-à-vis EU goods, services and/or suppliers, the Commission will invite the country concerned to consult on the opening of its procurement market. Such consultations could also take place in the form of negotiations on an international agreement.

As a last resort, the Commission could, after consultation with EU Member States, apply the new tool. This would mean that bids consisting of goods and services from the country concerned would, while compared to other bids, be considered to offer a higher price than the one they put forward, thus providing European and non-targeted countries' goods and services a competitive advantage.

Draft rule paves the way for EU exports of apples and pears to the US

The USDA has published a draft rule to facilitate the export of apples and pears from the EU to the United States. The move is hoped to benefit European farmers, who lost their main export markets as a result of Russian sanctions imposed in 2014. The EU has said that opening the market for the 2016 harvest could be feasible, if all

parties continue their efforts.

US and Japan open beef markets to further EU countries

In further re-opening of the US beef market, closed since the BSE outbreak in the 1990s, the United States announced that it will lift its ban on beef from the Netherlands. After Ireland and Lithuania, the Netherlands is the third EU country to gain access to the US market since the BSE-related ban.

Meanwhile, as of 2 February, 2016, Japan has lifted its long-term ban on Danish beef. This follows an earlier opening of the Japanese market to beef products from France, Ireland, the Netherlands and Poland.

EU requests WTO consultations over Colombia's discrimination against imported spirits

The EU today has requested consultations with the Government of Colombia under the dispute settlement provisions of the World Trade Organization (WTO) on a number of tax and regulatory measures that discriminate against imported spirits.

In Colombia, EU spirits face higher taxes than local brands through higher national consumption tax and higher local charges. In addition, Colombia's regional authorities impose market-access restrictions for imported spirits.

The request for consultations formally initiates proceedings under the WTO dispute settlement understanding with a view to finding a solution to the dispute. If consultations do not reach a satisfactory solution within 60 days, the EU may request the WTO set up a panel to rule on the compatibility of Colombia's measures with WTO rules.

Travel News

Norwegian Air to proceed with US routes from Cork and Shannon

Talking to the *Boston Herald* this February, spokesman for Norwegian Air, Anders Lindstrom, said that the airline intends to press ahead with plans to launch non-stop flights between Boston and Cork. The route take-off has been delayed as Norwegian Air continues to wait on US Department of Transportation approval to operate through Norwegian Air International, its new Irish subsidiary. However, Lindstrom has said that Norwegian is still committed to launching the Boston-Cork service. The carrier also hopes to launch a non-stop service between Boston and Shannon in addition to New York-Cork flights in 2017.



American Airlines submits Cuba flights application

American Airlines has submitted an application to the US Department of Transportation, proposing to operate scheduled services between the US and Cuba, with flights to Havana from Miami, Charlotte, Dallas Fort Worth, Los Angeles and Chicago. The announcement follows United Airlines confirmation of plans to serve Cuba from Newark and Houston.

Following moves by President Barack Obama, in January, certain US barriers to travel and trade were lifted, including raising the limit on remittances from Cubans living abroad to up to \$10,000 and allowing internet and mobile phone companies to export equipment.

General travel from the US into Cuba is restricted to 12 designated categories, including professional meetings, educational activities, family commitments and athletic competitions. US travellers who fall into one of these categories will no longer need a special licence to travel.

BA to recommence flights to Tehran

Starting on 14 July, British Airways is resuming direct flights to Tehran this summer, after a gap of four years. The route will launch as a six-per-week service before moving to daily flights from winter 2016.

American destinations this summer.

Aer Lingus is also expanding its short-haul services from Dublin, with new routes to Agadir in Morocco and to Nantes in France as well as additional capacity on its existing services to Paris. In addition, the airline is to increase the frequency of its Liverpool-Dublin route from May to up to four flights per day.

From Shannon, meanwhile, flights to New York will recommence on 14 March, operating six days per week throughout the summer. Moreover, the airline is to increase capacity on its Shannon-Boston route, with an extra 6,000 seats available over the summer period.

Aer Lingus to expand its transatlantic operations and short-haul services

Aer Lingus will operate three new routes from Dublin this summer, adding services to Washington DC, Agadir and Nantes. The airline is also to relaunch its Gold Circle loyalty programme in partnership with Avios as Aer Club at the end of March.

The new Washington Dulles service will operate four times per week from 1 May. The Dublin-San Francisco service, which was launched last year, will move from five flights per week to daily from May, and frequency on the Dublin-Orlando route will increase from

three to four flights per week.

Meanwhile, a new third daily Aer Lingus flight from Dublin to New York will operate from June until the end of August, departing at 07.50 and arriving New York at 10.20. The return flight will leave New York at 12 noon and land in Dublin at 23.40, providing a daytime service on both legs of the journey.

This additional capacity, together with Ethiopian Airlines' launch of a three-times-weekly Dublin-Los Angeles service, will mean Dublin Airport will have direct services to 14 North

Finnair to increase Dublin-Helsinki frequency

Finnair is to increase its service between Dublin and Helsinki, adding an extra 1,800 seats on the route over the summer. The carrier currently offers a daily service between the two capitals, but will add new Wednesday and Sunday frequencies from the start of the summer schedules, bringing the total to nine flights per week. From Helsinki, Finnair offers onward Asian connections to Beijing, Bangkok, Tokyo and Hong Kong.

Ryanair to return to Belfast

After an absence of five years, Ryanair is to relaunch services from Belfast International, with seven new routes to Alicante, Berlin, Krakow, Lanzarote, Malaga, Milan and Tenerife, as well as a up to seven-times-daily service to London Gatwick. In addition, five more new routes are expected to follow from October 2016. The move follows Aer Lingus's decision to cease its route between Gatwick and Belfast City Airport in March.

Separately, Ryanair has announced plans to open a new base at Bucharest Airport from 30 October, with more flights from the Romania capital to Brussels, Dublin and Milan.





Kuala Lumpur covers an area of 243km² and has an estimated population of 1.7 million. Greater Kuala Lumpur boasts an urban cluster of over 7.5 million people, and in the context of economy and population, is among the fastest growing metropolitan regions in SE Asia. Rated as a 'global city' (a city regarded as being important to the global economy), Kuala Lumpur is the financial and economic capital of Malaysia and the centre for the country's real estate, media, arts, finance and insurance businesses. Independent from British rule since 1957, the city retains its heritage while continuing to develop a justified reputation for modernity.

FROM THE AIRPORT TO THE CITY:

Kuala Lumpur International Airport (KLIA) is located at Sepang, 75km south of the city centre. Ranked as one of the top five airports in the world, KLIA is linked to the city via a high-speed rail system (KLIA Ekspres) that takes just over 30 minutes. (Taxis/cars can take up to one hour.)

SLEEP:

1st Choice: Renaissance Kuala Lumpur Hotel, Jalan Sultan Ismail/Jalan Ampang, is located in prime business zone territory and beside city attractions such as the KL Tower and the huge retail centre, Suria KLCC. www.renaissance.kualalumpurhoteltour.com

2nd Choice: Melia Kuala Lumpur, 16 Jalan Imbi, is a four-star business-friendly choice

in the city centre, positioned directly opposite Berjaya Times Square Mall, which has about 1,000 retail stores and Malaysia's largest indoor theme park. www.melia.com

EAT:

Lunch: Fancy taking it down a notch or two? A visit to Old China Café, 11 Jalan Balai Polis, should do the trick. This unpretentious café features 100-year-old Chinese furniture and delivers gorgeous traditional Southeast Asian cuisine – aka Baba Nonya – that subtly blends Chinese ingredients with Malay cooking techniques. Be advised: spicy dishes rule the roost here. www.oldchina.com

Dinner: Going sky-high for dinner, you can be assured of not only amazing views

of the city from your floor-to-ceiling window seat but also amazing Italian food at the award-winning Marini's On 57, Petronas Tower 3, 57th floor. www.marinis57.com

THREE THINGS TO DO IF YOU HAVE A FEW HOURS TO SPARE:

Relaxing: Sunway Lagoon Theme Park is located about 15km southwest of the city centre and boasts more fun per minute than a comedy festival. Make way for a number of 'parks', including Wildlife, Amusement, Extreme and (be careful!) Scream.

Tourist Sight: Kuala Lumpur's Chinatown never sleeps, so if the jet lag refuses to leave your system, you know where to head. Expect its primary commercial area, Petaling Street, to vibrate with sights, sounds, food and more bargains than you have time to browse.

Detour: Just over 10km north of Kuala Lumpur (and accessed by public transport or taxi) are the Batu Caves, one of the city's busiest tourist attractions. Situated on 400 million-year-old limestone hills, Hindu temples feature inside and around the main caves.

Enterprise Ireland International Network

Head Office

REGION/OFFICE	TELEPHONE	FACSIMILE	ADDRESS
Dublin	+(353 1) 727 2000	–	The Plaza, East Point Business Park, Dublin 3, Ireland

Northern Europe

Amsterdam	+(31 20) 676 3141	+(31 20) 671 6895	World Trade Center, Strawinskylaan 1351, 1077 XX Amsterdam, Netherlands
Brussels	+(32 2) 673 9866		Sablon Tower 14th floor, Rue Joseph Stevens 7, Jozef Stevensstraat, Bruxelles 1000, Brussels, Belgium
London	+(44 20) 7438 8700	+(44 20) 7438 8749	2nd Floor, Shaftesbury House, 151 Shaftesbury Avenue, London WC2H 8AL, England
Paris	+(33 1) 5343 1200	+(33 1) 4742 8476	33 rue de Miromesnil, 75008 Paris, France
Stockholm	+(46 8) 459 21 60	+(46 8) 661 75 95	Hovslagargatan 5, 4th floor, SE-111 48 Stockholm, Sweden

Germany, Central and Eastern Europe and the Balkans

Budapest	+(36 1) 301 4950	+(36 1) 301 4955	Bank Centre, Szabadság tér 7, Budapest 1054, Hungary
Düsseldorf	+(49 211) 470 590	+(49 211) 470 5932	Derendorfer Allee 6, 40476 Düsseldorf, Germany
Moscow	+(7495) 937 5943	+(7495) 680 5362	c/o Commercial Section, Embassy of Ireland, Grokholski Pereulok 5, Moscow, Russia
Prague	+(420) 257 199 621	+(420) 257 532 224	Trziste 13, 118 00 Prague 1, Czech Republic
Warsaw	+(48 22) 583 1200	+(48 22) 646 5015	Ulica Mysia 5, 00-496 Warsaw, Poland

Southern Europe, Middle East and Africa

Abu Dhabi	+971 2 495 8245	–	Embassy of Ireland, Abu Dhabi, Road 19 off 32 Street, Al Bateen, PO Box 61581, Abu Dhabi, UAE
Doha	+974 4410 1735	+974 4410 1500	Office 825, 8th Floor, Al Fardan Office Tower, West Bay, PO Box 31316, Doha, Qatar
Dubai	+(971 4) 329 8384	+(971 4) 329 8372	4th Floor, Number One Sheikh Zayed Road, PO Box 115425 Dubai, United Arab Emirates
Istanbul	+(90212) 809 1149	–	Mecidiyekoy Yolu Cd., Trump Towers Kulel, 3104, Floor 31, 34387, Sisli, Istanbul, Turkey
Johannesburg	+(27) 115505440	–	24 Fricker Road, Illovo, Johannesburg South Africa
Madrid	+(34 91) 436 4086	+(34 91) 435 6603	Casa de Irlanda, Paseo de la Castellana 46 – 3, 28046 Madrid, Spain
Milan	+(39 02) 8800991	+(39 02) 8690243	Via de Amicis, 53-20123 Milano, Italy
Riyadh	+(966 1) 488 1383	+(966 1) 488 1094	c/o Embassy of Ireland, PO Box 94349, Riyadh 11693, Saudi Arabia

The Americas

Austin	+1 512 792 5499	–	515 Congress Avenue, Suite 1750, Austin, TX 78701
Boston	+(1 617) 292 3001	+(1 617) 292 3002	535 Boylston St, 5th Floor, Boston, 02116 MA, USA
New York	+(1 212) 371 3600	+(1 212) 371 6398	Ireland House, 345 Park Avenue, 17th Floor, New York, NY 10154-0037, USA
São Paulo	+(55 11) 3355 4800	–	Rua Haddock Lobo, 1421 – Conj 51, Cerqueira César, São Paulo, 01414-003, SP, Brazil
Silicon Valley	+(650) 294 4081	–	800W, El Camino Real, Suite 420, Mountain View, CA 94040, USA
Toronto	+(1 416) 934 5033	+(1 416) 928 6681	2 Bloor Street W, Suite 1501, Toronto, Ontario, M4W 3E2, Canada

Asia-Pacific

Beijing	+(86 10) 8448 8080	+(86 10) 8448 4282	Commercial Section, Embassy of Ireland, C612A Office Building, Beijing Lufthansa Ctr., No. 50 Liangmaqiao Road, Chaoyang District, Beijing 100125, China
Hong Kong	+(852) 2845 1118	+(852) 2845 9240	Room 504 (5/F), Tower 2 Lippo Centre, 89 Queensway, Admiralty, Hong Kong
New Delhi	+(91 11) 424 03 178	+(91 11) 424 03 177	Commercial Section, Embassy of Ireland, 230 Jor Bagh, New Delhi 110 003, India
Perth	+61 8 9221 1263	–	1/100 Terrace Rd, East Perth, WA 6004, Australia
Seoul	+(82 2) 721 7250	+(82 2) 757 3969	Ireland House, 13th Floor Leema B/D, 146-1 Susong-Dong, Jongro-Ku, Seoul 110-755, Korea
Shanghai	+(86 21) 6010 1380	+(86 21) 6279 7066	Commercial Section, Consulate General of Ireland, Suite 700A, Shanghai Centre, 1376 Najing Road West, Shanghai 200040, China
Singapore	+(65) 6733 2180	+(65) 6733 0291	Ireland House, 541 Orchard Road #08-00, Liat Towers, Singapore 238881
Sydney	+(61 2) 927 38514	+(61 2) 926 49589	Level 26, 1 Market Street, Sydney 2000, NSW, Australia
Tokyo	+(81 3) 3263 0611	+(81 3) 3263 0614	Ireland House, 2-10-7 Kojimachi, Chiyoda-ku, Tokyo, 102-0083, Japan

For any other markets not mentioned, contact Market Development Dublin. For further contact information, visit www.enterprise-ireland.com/contact

* * *

www.the-market.ie