

Join the Wales Festival of Innovation 2016



WHAT IS THE FESTIVAL OF INNOVATION

The Wales Festival of Innovation sets to showcase innovation here in Wales through a number of events, run by companies and academia. It provides innovators with the opportunity to network with industry experts, showcase their products and services to potential customers and members of the public from across Wales and beyond.

OUR VISION

Innovation is changing the way we live. The Wales Festival of Innovation wants to showcase what's coming next, and how Wales is already leading the way. Our aim is simple, we want to showcase what Wales has to offer, our businesses and people leading the way through innovation, our first class academia for research and development and our cutting edge technologies.

The Festival is designed to provide you with the rare opportunity to view first-hand how Wales is at the forefront of enabling technologies which underpin key industry sectors.

It is expected to facilitate the exchange of ideas and concepts that will create collaborations and inspire a new generation of innovative products, solutions and cultural endeavours.

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MONDAY 20TH JUNE
FRIDAY 1ST JULY 2016



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100 days of innovation

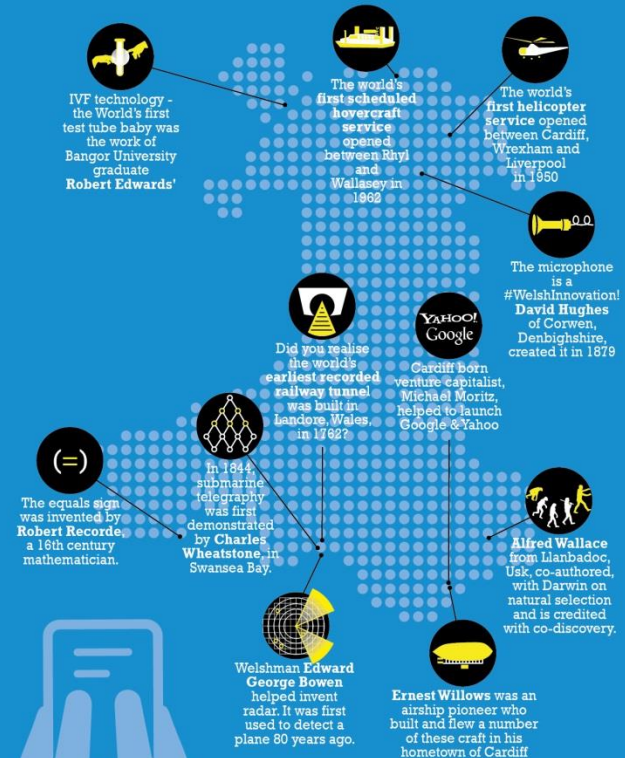
#WelshInnovation



WALES FESTIVAL OF INNOVATION

- Did you know, the world's smallest computer the @Raspberry_Pi is produced in Pencoed?
- Ernest Jones was born in Swansea and brought psychoanalysis to the UK after working with Freud
- In 1844, submarine telegraphy was first demonstrated by Charles Wheatstone in Swansea Bay
- Cardiff's Millennium Stadium is a #WelshInnovation. When it opened in 1999, it was the world's largest arena with a retractable roof
- River dredging, which helps prevent flooding, is a #WelshInnovation, invented by John Gwyn Jeffreys of Swansea
- Pembrokeshire's William Frost is said to have beaten the Wright Brothers to flight by 13 years
- Valleys boy Donald Davies invented packet switching in 1968, an innovation that led to the internet
- Two Gorseinon men were named the world's best inventors in 2010, for the 'Sira' sports rehab machine

- Welshman Edward George Bowen helped invent radar. It was first used to detect a plane 80 years ago
- The lifesaving RIB boat is a #WelshInnovation - It was designed and tested on the south Wales coast in the 1960s by students at @UWCAtlantic
- Swansea's Alan Cox, has been a major part of the Linux kernel's development since 1991
- Isaac Roberts from Denbighshire pioneered the art of taking photos of outer space in the late 1800s
- Tom Parry Jones of Anglesey invented the electronic breathalyser in 1980.
- Yes, that's right, the microphone is a #WelshInnovation ! David Hughes of Corwen, Denbighshire, created it in 1879
- 211 years ago today the first steam locomotive journey took place in South Wales
- The equals sign (=) was invented by Robert Recorde, a 16th century Welsh mathematician



Events

Wales Festival of Innovation 2015



WALES FESTIVAL OF INNOVATION

EVENTS

Discover the innovation taking place on your doorstep.

- 1 JUN** **Sêr Solar Lecture**
Location: SPECIFIC IKC, Port Talbot
- 2 JUN** **Good service is good business - Moneypenny**
Location: Moneypenny, Wrexham
- 2 JUN** **IET Engineering Networking Event.**
Location: Airbus Group, Newport
- 4 JUN** **Lessons from an Accidental Entrepreneur - Prof Andrew R. Barron.** Location: Digital Technium Room 306, Swansea University.
- 4 JUN** **Building regional clusters to drive collaborative innovation.** Location: IQE Semiconductors, St Mellons, Cardiff
- 5 JUN** **Whatever Happened to Aberfan?**
Location: Webinar 12.30 to 1.30pm
- 6 JUN** **Soapbox Science Swansea**
Location: 360 Beach and Watersports Cafe, Mumbles Road, Swansea SA2 0AY
- 7 JUN** **Worshipful Livery Company of Wales - Young Professionals Launch Event**
Location: Stavros S Niarchos Tall Ship
- 8 JUN** **Digital 2015**
Location: Celtic Manor, Newport
- 8 JUN** **2015 Morgan-Botti Lecture**
Location: National Museum of Wales, Cardiff
- 8 JUN** **We Make It Fly**
Location: National Museum of Wales, Cardiff

- 10 JUN** **Day of innovation in sustainable business**
Location: Menter y Felin Uchaf
- 10 JUN** **Women in Science**
Location: Life Sciences Hub Wales
- 11 JUN** **Morgan-Botti Lightning Laboratory Open Evening.** Location: Morgan-Botti Lightning Laboratory
- 12 JUN** **Irish Sea 2050 Conference**
Location: Old Colwyn
- 15 JUN** **Young Enterprise Wales Company of the Year Awards**
Location: Sherman Cymru, Cardiff
- 15 JUN** **Unlocking the Value of Re-use**
Location: Bangor University
- 15 JUN** **Making Innovation Fly in Wales**
Location: Airbus Group, Newport
- 16 JUN** **South Wales Cyber Security Cluster**
Location: Cardiff
- 16 JUN** **Our energy infrastructure future: smarter living & CE generation?**
Location: N3/28, Cardiff School of Engineering
- 16 JUN** **Bright Lights and Engineering**
Location: OpTIC, St Asaph

- 17 JUN** **2015 Innovation & Impact Awards Dinner: Vote for The People's Choice by 15th June.** Location: On-line
- 17 JUN** **Learning to Live with Flooding 2015**
Location: Novotel Hotel, Cardiff, CF10 4RT
- 18 JUN** **Nano4Life 2015**
Location: Swansea University, The Grove Building, Singleton Park, Swansea, SA2 0LE
- 18 JUN** **A Lower Cost of Doing Business**
Location: SPECIFIC Innovation & Knowledge Centre
- 18 JUN** **Innovation in defence and beyond**
Location: Liberty Stadium, Swansea
- 19 JUN** **Wales Games Development Show**
Location: City Hall, Cardiff
- 19 JUN** **The Bionic Clinician**
Location: Novotel, Cardiff
- 22 JUN** **The Greenhouse: SMART Cymru feedback session.** Location: PDR, Cardiff Metropolitan Uni, 200 Western Ave, Cardiff
- 22 JUN** **SPTS Technologies - Schools Open Day**
Location: SPTS Technologies, Newport
- 23 JUN** **Women in Engineering**
Location: N3/28, Cardiff School of Engineering, Cardiff, CF24 3AA

- 23 JUN** **West Wales Cyber Security Cluster**
Location: Life Sciences Building, Swansea University
- 23 JUN** **Business Support for Eco-Innovation**
Location: PDR, Cardiff Metropolitan Uni, 200 Western Avenue, Cardiff, CF5 2YB
- 23 JUN** **CoInnovate**
Location: Cardiff
- 24 JUN** **ACCESSING FINANCE WORKSHOP**
Location: Life Science Hub, Cardiff Bay
- 24 JUN** **RUCK Workshops**
Location: Aberystwyth University
- 30 JUN** **Tide turning for Wales**
Location: N3/28, Cardiff School of Engineering, The Parade, Cardiff, CF24 3AA
- 30 JUN** **Barry Island "Pop Up University"**
Location: Eastern Amphitheatre, Barry Island
- 30 JUN** **Venture into Collaboration**
Location: Quay Hotel, Deganwy



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“Show that world-class innovation is right here”

Sion Barry
Business Editor
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BUSINESS and organisations in Wales that develop ground-breaking products, services and processes are being urged to open their doors this summer to show off their ideas and expertise.

The aim is to help embed innovation as a major engine of Welsh economic growth, with the potential to increase national earnings by hundreds of millions of pounds each year and create thousands of new jobs.

Following the success of the pilot Wales Festival of Innovation in 2014, in which about 40 firms and university technology teams took part, it was announced this week that an enlarged festival will take place throughout June 2015.

During this month-long “celebration” of new ideas and achievements, workshops, exhibitions, open days, demonstrations, lectures and conferences will be held across the country to give business people, students and the general public an insight into the wealth of ground-breaking work being done by scientists and entrepreneurs in Wales.

Plans for the second Wales Festival of Innovation were outlined in leading-edge business gathered in Cardiff recently for the first 2015 meeting of ESTnet, the electronics and software technologies network for Wales, which organises the festival in partnership with the Knowledge Transfer Network (KTN) and the Welsh Government.

Organisers say the initiative is designed to inspire more businesses and individuals “involved in being forward and developing new ideas and skills to realise Wales in the eyes of potential investors and the wider business world as a hotbed of fresh thinking.

In addition it facilitates contacts and the exchange of ideas that will create collaborations and spawn a new generation of innovative products and solutions.

Festival spokesman Idris Price “It’s important that people know about the huge range of innovation already taking place here. Much of it is hidden in the scenes because it involves enabling technology which makes possible the high-profile products on the news, particularly electronic devices and software systems.

“By showcasing this ground-breaking work we will build confidence in Wales as a place where profitable, new developments are part and parcel of the culture.”

He pointed to the UK Innovation Survey which found that just over 60% of Welsh firms with more than 10 employees were “innovation ready” and that 22.5% of Welsh companies turnover is currently generated from new or significantly improved products.

Mr Price said the second and



Ian Menzies, co-chair of the Innovation Advisory Council for Wales

enlarged festival this summer would be another milestone in the task of building Wales’ reputation as a “land of innovation”. It follows the creation in October of the Innovation Advisory Council for Wales, a public and private sector partnership which will advise the Welsh Government on how to help industry to exploit its knowledge and expertise in line with emerging market trends.

He added: “There is enormous potential to generate additional wealth and jobs by breaking new ground, developing new intellectual property and engineering new patterns on home-grown products, services and processes. The festival will not only encourage new thinking and highlight Wales’ strengths but will bring together like-minded individuals and organisations to collaborate on exciting and profitable new projects.”

Dr Steve Welch from the Knowledge Transfer Network (KTN) said: “The idea of the festival is to capture the totality of what’s happening in Wales, which is so rich in innovative companies. By bringing all these events together in June, we can improve the potential of the activity and give the participants an opportunity to show everyone what is going on. We also want the festival to be as broad and inclusive as possible.”

Among those reporting business benefits from last year’s festival is Cardiff-based specialist order manufacturer IQE.

IQE director Chris Meadows said the firm’s “OpenIQE” open innovation

event held in North Wales as part of the festival, had yielded several new opportunities and potential partnerships which are now developing leading-edge products for the electronics industry.”

Ian Menzies, co-chair of the new Innovation Advisory Council for Wales, encouraged businesses at the ESTnet meeting, held in the Swansea Stadium, Cardiff, to get involved in the festival.

He said: “Innovation is changing the way we live. We need new ideas to stay competitive, new technologies to improve lives, and new insights to lead the way.”

Our multinationals certainly made their mark. In Tudor times Robert Beckett of Tilly inquired the equals symbol (=) and introduced the plus sign (+) to

how Wales is already leading the way.”

Improving what we do is vital for Wales’ prosperity

Wales has a great heritage of invention, but we need to make our innovation bolder and more ambitious, writes Ian Menzies



If we’re not needed convincing of the importance of certain innovations we should simply look back at the sheer scale of change in our own home economy over the last 30 years. Pretty much every firm around has had to transform the way it operates and the products and services it provides. Those who haven’t are simply no longer here.

When we look at the emergence of new and more sophisticated tools – such as mini-electronics, life sciences and software development, and also new digital technology becoming a key driver for most other industries, we realise how all- pervasive that change has been.

Keeping abreast is vital in order to remain competitive, but those who really prosper are those who actually lead change – lead by challenging the present and imagining the future.

That contribution may be a world leading and market-changing device, or just a more effective process for delivering an existing product or service.

Either way, Wales needs more such people, generating the kind of ideas that translate into registered intellectual property that can, in time, make the market at it and pay attention.

Equally an increasing proportion of the nation’s wealth creation now derives from new ideas conceived and developed on home soil, many supported by Welsh Government investment and a good number flowing from excellent work in the Welsh universities.

The most recent UK survey of innovation ranked Wales third among Britain’s 12 nations and regions for the proportion of “innovation active” enterprises. More than four in 10 Wales-based firms across Wales accede on the basis that they had introduced a new or significantly improved product or processes or they engaged in innovation projects.

Nevertheless we still have a long way to go before we join the ranks of those who have truly embedded a culture of innovation and progress – the Singapore and Korea of this world. But that is where we need to set our sights.

It is not enough to be innovative as a small but inventive nation and looking back, we can certainly take some inspiration from how such innovations are given the world.

Our multinationals certainly made their mark. In Tudor times Robert Beckett of Tilly inquired the equals symbol (=) and introduced the plus sign (+) to

INNOVATION



English speaking world. Two centuries later William Jones of Andrew Ingham using the Greek letters pi to describe the mathematical content that allows us to measure the circumference of a circle. It’s not hard to see how important that was for engineers and designers shaping a new industrial world.

More recent innovations from Wales include the microchip, mail order shopping, the healthwatch and the rigid-inflated inflatable boat (RIB boat), which has helped save lives worldwide.

That’s just scratching the surface. Preserving 3D60 work on data packet transfer that contributed to the creation of the internet is typical of the background.

Welsh technology that makes many high-value products possible. Another example is the tiny semi-conductors designed by IQR in Moldavia that are used in more than half of the world’s mobile phones.

Such impressive innovations are all around us. Look, for example, at Sion Chll of Cerynall, which designed a bridge that can run for 10 days without a power supply, keeping critical services such as remote areas zones. Microsoft founder Bill Gates was so impressed that he donated £57,000 towards its work.

Concrete Carers of Penrhydydd developed rolls of fabric, embedded with concrete that can be installed into any shape and, when water is applied, sets as hard as traditional concrete to provide shelter in hostile environments.

We’re seeing many highly original products, particularly in South Wales. Just two examples are the UK’s first 3D printer, certainly adding the process.

It is not enough to be innovative as a small but inventive nation and looking back, we can certainly take some inspiration from how such innovations are given the world.

That’s what the Wales Festival of Innovation is all about. After a successful two-week pilot last year, a full month of events is planned for this year.

Our multinationals certainly made their mark. In Tudor times Robert Beckett of Tilly inquired the equals symbol (=) and introduced the plus sign (+) to



Rolls of concrete canvas being inspected at Concrete Canvas in Treforest

partnerships to underpin future pioneering work.

The initiative to create the Wales Festival of Innovation has come from the electronics and software technology network, ESTnet, along with the Welsh Government and the Knowledge Transfer Network (KTN), who support the work of the Technology Strategy Board.

The Welsh Government in particular has recognised just how important it is to Wales to become an innovation leader. This was reflected in the recent creation of the Innovation Advisory Council for Wales, to advise government on emerging opportunities and guide funding support to where it will have greatest impact.

More recent figures show that 22.5% of Welsh company turnover was generated from new or significantly improved products and services, with 1.8% of total turnover coming from products that were

newly new to the market. This already amounts to hundreds of millions of pounds per annum. But 1.8% is still a relatively low proportion of company output to them – it still needs to play it.

Through our education establishments and through our business networks we need to firmly embed the idea that innovation is not an option. It’s essential for survival. Moreover we need to make our innovation bigger, bolder and more ambitious.

Creating and sustaining such momentum is what will give Wales the priority and long term economic security it needs.

Ian Menzies is co-chair of the Innovation Advisory Council for Wales and chair of ESTnet and has led the creation of the Wales Festival of Innovation. For information on staging an event during the festival visit www.walesfestivalofinnovation.org

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Mark Johnson, Kevin Bygate, Avril Lewis and Dr Peter Holliman at Baglan Innovation Centre. Picture: Gayle Marsh/ @Wgrn20160614-003_C

Turning buildings into future powerhouses



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KEVIN Bygate reckons he is in his third career as the person at the helm of a consortium which aims to turn houses, offices and factories into self-contained power stations.

The chief executive of Baglan-based Specific was a chartered and then chief engineer, and then went into business and became a general manager.

Now he is firmly ensconced at what he describes as a national innovation centre — a place where research, industry and Government backing come together.

"It's really exciting — my previous careers have prepared me for this one," said Mr Bygate. "It is a chance for me to use all those skills."

Specific aims to enable buildings to generate, store and release their own energy, using the power of the sun.

This is achieved by cladding them with "smart" metal or glass coatings comprising printed solar cells, which generate electricity, or by installing so-called solar air collectors — perforated flat plates that heat the surrounding air which can then be drawn into building cavities and

inside where the warmth is needed. Challenges include the natural weathering of materials in the open air.

Specific is also looking at chemicals that can store heat longer term with the aim of installing heating systems that draw in warmth in the summer, store it and then release it in the winter.

"We take ideas from concept to commercialisation," said Mr Bygate. "We have developed the technology and deployed it on 26 buildings — some are supermarkets, some are residential, some are new buildings and some are retro-fitted. The journey ahead is how we 'scale' this.

"We do great science and work with supply chains, and are unashamedly about economic growth, wealth creation and jobs, particularly in Wales.

The UK requires huge amounts of energy to light and, in particular, heat its buildings. Harnessing the abundant, limitless but intermittent power of the sun in a cost-effective way has long been a holy grail for many scientists and Governments.

Last month US firm Tesla unveiled home batteries which it hopes will allow householders with solar panels to go "off grid" by providing the means to store that energy.

Mercedes-Benz and parent company Daimler has announced it will launch its own batteries for homes and small businesses by the end of the year.

Mr Bygate said he and his colleagues regularly "scan" the technology horizon "to see what is out there."

Swansea University-led Specific works with commercial partners such as Tata Steel, glass manufacturers Pilkington, Group Limited and chemicals giant BASF. Its partners also include Jaguar Land Rover and Laing O'Rourke, plus several small and medium-sized companies and other universities including Oxford and Imperial College London.

Funding has come from the Engineering and Physical Sciences Research Council and Innovate UK (formerly the Technology Strategy Board), the Welsh Government and industry.

On Monday it hosted the opening event of the month-long Wales Festival of Innovation, which includes a series of female speakers at Soapbox Science on Saturday at 360 Beach and Watersports Cafe, St Helen's, Swansea.

Specific, at Baglan Bay Innovation Centre, got up and running less than five years ago with 10 staff. Its workforce now numbers some 140.

"They are young at heart and really believe in what they are doing," said Mr Bygate, 56, of Gower.

He described his work as enormously rewarding, and added: "We really do need industry, academia and the Welsh Government working together."



"We really do need industry, academia and the Welsh Government working together" — Specific chief executive Kevin Bygate

Welsh inventors to be celebrated

SWANSEA Bay is to play a big role in celebrating Welsh invention and discovery in June.

Baglan Innovation Centre is hosting the first of the Wales Festival of Innovation events on Monday, where photovoltaic expert Professor Peter Holliman will talk about his work creating materials capable of multiplying the amount of energy we can capture from the sun. Other events include Soapbox Science sessions on June 6 at 360 Beach and Watersports Cafe, St Helen's, highlighting the work of women in science, and on June 18 a nanoscience event at the Grove Building, Swansea University.





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Students invited to visit SPTS company



AS THE national celebration of Welsh innovation enters its second week, one of Gwent's leading technology powerhouses has announced it will throw open its doors to allow local students to discover how studying science and technology subjects can lead to exciting career opportunities.

As part of the Wales Festival of Innovation, Newport-based semiconductor manufacturing equipment maker, SPTS Technologies, is inviting students aged 16 to 18 and their teachers to visit its state-of-the-art facility.

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Business Argus

Tuesday, June 9, 2015 Digital 2015 edition

The event aims to inspire visiting students to help achieve Wales' full potential in the microelectronics industry by carving out careers in the fast-growing semiconductor, microelectronics and manufacturing industries that enable mobile communications like the iPhone, Samsung Galaxy smartphones, and many other consumer electronics.

Students and teachers visiting SPTS on June 22 will be provided with an opportunity to learn about the award winning company, participate in interactive activities and taken on a tour of one of their high-tech demonstration labs.

As a global leader in the design and manufacture of semiconductor processing solutions, SPTS, an Orbotech company, believes it is vital to support schools and teachers in their efforts to inspire students to pursue science, technology, engineering and maths subjects.

The Wales Festival of Innovation is organised by ESTnet, in partnership with the Knowledge Transfer Network and the Welsh Government, is running throughout the month of June.

Festival spokesman Idris Price said: "There is a lot of impressive and creative work going on in Wales and it's important this is recognised widely within and beyond our borders in order to encourage even more of this kind of activity, which is vital to our future."

The four-week celebration of Welsh technology is designed to showcase the innovation going on in Wales. It is hoped that attendees will come away from events inspired to find their own big ideas to work on.

A wide range of companies and organisations are taking part in the programme of events.

Western Mail



Festival of Innovation celebrates new ideas



Wales Festival of Innovation spokesman Idris Price

A host of events is being staged across Wales to showcase and promote pioneering work in all fields of research and industry in June.

The Wales Festival of Innovation is a month-long 'celebration' aimed at helping to embed invention and new ideas as the major drivers for growth and job creation in the coming years.

During the programme innovators from industry and academia will urge visitors to come and see or hear first-hand how world-leading discoveries and developments are contributing many millions of pounds each year to the economy.

The festival is organised jointly by ESTnet, the electronics and software technologies network for Wales, the Knowledge Transfer Network (KTN), MedWales and Welsh Government.

It will present business people, students, planners and the wider public with the opportunity to discover how Wales' universities, top firms and home-grown enterprises are exploring new spheres, shaping new concepts and collaborating to make the country a powerful source of profitable new products and services.

Festival spokesman Idris Price said: "There is a lot of impressive and creative work going on in Wales and it's important this is recognised widely within and beyond our borders in order to encourage even

Rupert Denholm-Hall
Business Reporter
rupert.denholm-hall@walesonline.co.uk

more of this kind of activity, which is vital to our future."

He added: "It is equally important that innovators become more connected to wider industry so that we develop the manufacturing and other supply-chain networks which ensure that new ideas from Wales result in the creation of more Welsh jobs and prosperity."

During the month, the nation's latest ideas and achievements will be showcased via a series of international open innovation conferences, exhibitions, factory open days, lectures, seminars and workshops.

Highlights from the festival's calendar of events include the launch event, taking place at Sêr Cymru Sola's base at the Specific Innovation and Knowledge Centre in Baglan on June 1.

The curtain raiser event for 2015 will see Sêr Cymru Solar representatives explain their third generation photovoltaics technology, which promises to turn the homes of the near-future into mini-power stations generating clean energy.

On June 4 Swansea University will host a lecture for aspiring entrepreneurs and innovators to learn 'Lessons from an accidental entrepreneur' from Prof Andrew R. Barron.

On June 6 Soapbox Science Swansea will provide members of the public with opportunities to meet and learn from 16 leading female scientists from across Wales.

This will be followed on June 15 with the Young Enterprise Wales Company of the Year Awards to celebrate students aged 15-19 across Wales, who have succeeded in local Young Enterprise competitions and are now competing to represent Wales in the UK finals.

On June 16 the South Wales Cyber Security Cluster will host an event organised by Pervade, one of the UK's top four most innovative cyber companies.

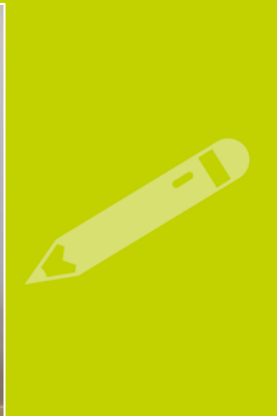
This event is designed to help businesses of all sizes to identify and guard against cyber security threats

to their systems. June 19 in Cardiff sees the celebration of Wales' contributions to state-of-the-art medical science. Delivered by MedWales and the Knowledge Transfer Network (KTN), 'The Bionic Clinician' explores the increasing 'man-machine interaction' in healthcare delivery.

June 23 and 24 will see Cardiff launch Colmonate, the country's first international collaborative open innovation conference.

June 30 will see the ESTnet Software Exhibition celebrate Wales' reputation as one of the UK's most vibrant technology clusters, and demonstrate its capacity to support fledgling firms with potential to become the technology leaders of tomorrow.





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■ Staff at Moneypenny in Wrexham enjoying the 'Good Service is Good Business' event. (5)

Money Penny kicks off celebration of innovation

AN EVENT held by a telephone answering service based in Wrexham has kicked off the nation's month-long celebration of Welsh Innovation.

As part of the Wales Festival of Innovation, Moneypenny opened the doors of its Wrexham headquarters to allow guests to discover how its people-centric culture is a key component of the success, which has fuelled the company's expansion into the US market.

The half day free visit entitled 'Good Service is Good Business' gave managers, employees and

business owners the opportunity to learn how Moneypenny's focus on customer service has seen the Welsh company rise from a £10,000 start-up, to win the Queen's Award for Innovation and be celebrated as one of the top five best companies to work for in the UK.

The event was the first in the region to be held as part of the Wales Festival of Innovation, which is running throughout June.

Guests were provided with a behind the scenes tour of the award-winning business' headquarters, an opportunity to meet Moneypenny's expert team

and attend a keynote presentation from company co-founder, Rachel Clacher.

'Good Service is Good Business' was one of dozens of events taking place as part of the festival, which is organised jointly by the ESTnet (Electronics and Software Network for Wales), the Knowledge Transfer Network (KTN), MediWales and the Welsh Government in conjunction with industry and academic partners.

Rachel Clacher, co-founder and director of Moneypenny, said: "We're delighted to be involved with such a fantastic event.

"Innovation is at the heart of everything we do here at Moneypenny and is a crucial part of our success. It's truly inspiring to see some of the pioneering and remarkable work which is taking place right across Wales."

The four-week celebration of technological progress and invention is designed to highlight the extent of scientific exploration and innovation going on in Wales, to encourage more businesses and organisations to pursue innovations of their own and to help attract investment to Wales from leading-edge UK and overseas enterprises.

Turning ideas into

RHOSHIRWAUN welcomes an event of pioneering technology to exhibit the development of Welsh innovation in sustainability, as part of the Wales Festival of Innovation.

The free one day event on today (June 10) 'Turning Great Ideas Into Fundable Ideas' is an opportunity for the general public to see and experience innovative uses of natural products, and for businesses to create partnerships with fellow professionals to implement their innovative ideas.

Visitors will be able to learn about sustainable construction, biodiversity and take part in an idea-generating workshop with likeminded people. There will also be opportunities to network with businesses from the region and to experience one of the #ecoamgueddfa sites. The event is designed for a broad range of companies from sustainable construction, design and manufacture, food, environmental goods and services and social enterprises to name but a few. The event will be held at Felin Uchaf, Pwllheli, a visionary social enterprise that actively implements bio diverse methods, and is in itself a showcase of Wales's use of natural products in its construction and self-sufficient landscape. This inspirational and unique setting will open its doors to a range of businesses with innovative sustainability ideas that can be developed to transform the way we live.

The event on is a key part of the Wales Festival of Innovation which continues throughout various areas of Wales in June. A wide range of companies and organisations are taking part in the programme of events.

For further details about the Festival see www.festivalofinnovation.org

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Recyclable goods and services make a good return

Chris Brooker explains
why Welsh companies
cannot afford to
overlook sustainable
business practices

Eco-innovation may be defined as 'the production, assimilation or exploitation of a product, production process, service or management or business method that is novel to the organisation, which results throughout its life cycle in a reduction of environmental risk, pollution and other negative impacts of resource use (including energy) compared to relevant alternatives'.

Put simply, a company that develops or adopts something that results in reduced environmental impact over the lifecycle of a product or service is being eco-innovative.

Businesses can use a wide variety of methods to achieve this: reducing their resource consumption, using less toxic materials, adapting manufacturing processes to be less polluting, using clean energy for production and transportation, increasing the energy efficiency of products, reuse and refurbishing... these tactics are the key of the eco-innovation toolbox.

Increasing raw material costs, policy and legislation changes, market and customer requirements, conscience, brand reputation, common sense (eg there's profit in waste) are all the key drivers in businesses becoming more sustainable.

As the economics start to stack up, it makes business sense to be more sustainable. Design for sustainability has become a business opportunity as well as best practice.

Manufacturers that have traditionally made and sold products are starting to design services that allow them to get those products back at the end of their life. These products can then be remanufactured back to as good as new or 'upcycled' and upgraded into a newer version. Not only does it give these products a second life, it potentially opens up new markets.

Trail-blazing furniture company Orangebox designed their 'Do' chair in collaboration with Welsh suppliers and manufacturers, reducing the environmental impacts of transportation. The chair is lightweight and simple to assemble and disassemble, which reduces both

16
Design for sustainability has become a business opportunity as well as best practice

production costs and energy consumption during manufacture and makes it easier to reuse or recycle chair components. The company's product take-back scheme for 'Do' helps to ensure that the components reach the most appropriate destination at the end of the product's life.

Other manufacturers have shifted from selling products to providing functions. Innovative Prowy-based automotive company livesave is in the final stages of developing a hydrogen fuel cell-powered electric car that will have fuel consumption equivalent to around 200mpg and tailpipe emissions of tiny quantities of water.

When launched, livesave's business model will see customers buying mobility as a function. The cost of the car, maintenance, insurance and fuel will be combined in a monthly fee, while the company maintains ownership of the car and its components. The benefit of this 'sale of service' model is that it aligns the interests of the customer and the company, both of whom get the best value from a highly efficient, long-life car. These new business models open up a wide range of opportunities, but they involve wholesale changes to the business operations and, in many cases, new staff with different skills.

Manufacturers operate in a complicated space and in systems involving a network of customers and suppliers, materials, design and manufacturing processes, services and many other business operations. It can be

very difficult and sometimes seemingly impossible for established companies to identify and make the changes required to capitalise on eco-innovation opportunities. As a service designer at PDR, I have worked with a number of companies that are concerned with making the business changes required to move towards leasing products instead of selling them, for example, a potential detrimental effect to their bottom line.

This shouldn't be the case and more intelligent funding models and support are needed, alongside smarter business models, product design and service innovation. That is why we recently hosted the Business Support for Eco-Innovation event at Cardiff Metropolitan University's International Centre for Design & Research (PDR).

The event brought together representatives from the Welsh Government's innovation support programme and service design at PDR, alongside ecodesign expertise from the Ecodesign Centre and Welsh eco-innovative businesses.

Under the banner of the Wales Festival of Innovation, the event provided an open and inclusive forum to discuss the main challenges and barriers eco-innovative organisations face. Workshops and company experiences from Ecodesign Centre's portfolio of case studies allowed our delegates to explore how Welsh Government can help companies to overcome these challenges.

It's a very exciting time and Wales is a fantastic place to be innovative. Progressive government policy is creating a supportive environment for eco-innovation, not least the Welsh Government's Wellbeing of Future Generations (Wales) Act, which recognises the contribution that eco-innovation makes to a prosperous, resilient and globally responsible Wales.

Support from the Welsh Government can help lay the foundations for long-term sustainable economic growth in Wales. Chris Brooker is a service designer with PDR at Cardiff Metropolitan University



The Do chair designed by Orangebox

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Innovation? We have a festival to prove it

SIR – While it's slightly disappointing to read that the number of new patents registered by inventors in Wales dropped last year (Western Mail, June 11), I would take issue with the conclusion in your sub-heading that the new Patent Office figures show "innovation in decline".

Ironically, this month actually sees the Wales Festival of Innovation, which includes more than 40 events showcasing innovative activity going on in companies, universities and research centres right across the country.

Admittedly, the proof of the innovation pudding is the commercialisation of discoveries and the creation of jobs and wealth. However, the array of ground-breaking Welsh activity demonstrated by the festival – in fields ranging from medical technology and clever software development to next-generation green energy and advanced avionics – shows we still have cause to be optimistic about our future.

The festival is not only a window into an exciting world of imaginative and collaborative Welsh research and development, but hopefully it will be an inspiration to others to take up the challenge and continue the legacy of the great Welsh pioneers mentioned in your article.

Come along and learn more about this fascinating work.

Idris Price
Wales Festival of Innovation

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Wales can be at the forefront of the innovation revolution

Chris Meadows, one of the driving forces of innovation in Wales looks at how Welsh businesses, in particular SMEs, can capitalise on the country's position as a collaborative hub

A VERY revolution starts with a spark, a catalyst that ignites a chain reaction of events that would otherwise not have been possible.

A catalyst isn't always chemical in nature, ideas and concepts can be just as reactive.

Wales' best known revolution to date was industrial.

Our landscape today was shaped by innovations that allowed Wales to become the cradle of the world for coal, steel, slate and copper.

We are proud of our industrial heritage, but we must also realise that Wales currently stands on the precipice of another revolution, an innovation revolution, and its catalyst is collaboration.

The recent Tech City report placed South Wales in the top five of the UK's fastest growing 'digital clusters'.

The report showed that the number of new digital companies being created in Wales grew by 87% between 2010 and 2013, compared to the UK average of 53%.

These figures are impressive, but to those of us working in Wales' technology sector, they are not surprising.

While the general public may believe that Welsh industry and manufacturing have had their heyday, the fact is that many international technology companies have recognised the potential that Wales offers and established themselves here for that reason.

Airbus Group, General Dynamics UK, General Electric, STPS, Sony, Johnson Technologies, IQE and Panasonic are just a selection of the multinational powerhouses represented here in Wales.

The technologies they develop are pervasive.

As a result technology developed and manufactured here is exported and utilised across the globe in pioneering applications for the health care, communications, transport, computing, and consumer markets to name but a few.

The industrial revolution saw Wales' natural resources and products exported to every corner of the globe.

For example, today, almost every smartphone or tablet device contains technology developed and manufactured by a global leading



▶ **AN IQE technician at work. IQE is one of a selection of multinational powerhouses represented here in Wales**

technology business that is headquartered here in Wales.

Having these businesses here is just the first step in making our region a hub for innovative technology.

Booming wider awareness of the innovation that exists in Wales is vital.

This month marks the second year of the Wales Festival of Innovation,

a month-long celebration that will see businesses and universities across the country, their doors open to host events showcasing new ideas and opportunities developed in Wales.

One such event is Colonnate, Wales' first collaborative open innovation conference. Colonnate will bring organisations such as IQE, General Dynamics UK, GE Health-

care, Airbus Group, the KTN (the Knowledge Transfer Network) and the IESTI, together with Welsh SMEs, start-ups and universities.

The concept is to create an opportunity for Welsh businesses to learn and explore the specific technical challenges faced by each partner company, and potentially how they could work to solve them. You may

wonder why these world-leaders would seek to engage with small businesses; the answer is that each partner company realises the potential offered by open innovation.

Successful innovation in today's world requires collaboration, within and across organisations and more increasingly, across sectors.

Embedding collaborative open innovation in Wales stands to further strengthen the existing opportunities and networks created by Welsh Government, Wales' anchor companies and IESTI; the governing body for Wales technology sector.

The potential benefits offered to businesses and organisations that work in this way are significant.

For larger businesses, working with a range of smaller enterprises and university research facilities often allows them to approach their own business challenges in a more disruptive manner.

By the same token, the ability to work with multinational technology providers gives universities, SMEs and individuals, resources and markets that may otherwise remain out of reach.

However, open innovation should not be interpreted as a means of marketing, a chance to make connections with new businesses. Collaborative open innovation allows businesses to work together to access new capabilities by leveraging external knowledge and IP by sharing the risks, resources and rewards.

Today, many of the world's leading companies are realising that vertically integrated R&D structures are becoming inefficient and outdated.

Increasingly, these businesses have discovered that the key to innovation lies in harnessing the talent, new ideas agility that is often inherent in smaller businesses and start-ups. This is good news for Wales, which boasts a wealth of software and digital SMEs and start-ups.

This fact was highlighted earlier this year by the sheer volume of exceptional applications the 2015 IESTI Awards received for the Michael Moritz Award, which was specifically created to shine a spotlight on the growing number of small but highly-innovative digital businesses emerging in Wales.

It's time for Wales' wealth of SME and start-up businesses to seize their chance to collaborate with the multinational players in their desiring to co-develop the new technologies that can make Wales the centre of the innovation revolution.

Colonnate takes place on the 23rd and 24th June 2015 at the Mercure (Balliol) Hotel, Cardiff. Register for free please at www.colonnate.co.uk

Chris Meadows is head of open innovation at Cardiff-based IQE, one of the partner organisations for Colonnate 2015

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The conference-style event will provide interactive workshops which will support and funding available to businesses and how this funding can be best used to spark eco-innovation across Wales.

The aim is to highlight the challenges and opportunities for business innovative initiatives into their business models. The session will also give the opportunity to hear from Welsh companies who have successfully implemented innovation practices.

The outcomes of these interactive sessions will be fed back to Welsh Government innovation and policy teams in order to ensure that legislation and policy up-to-date, accessible and beneficial for Welsh business looking to become innovative and sustainable.

RELATED: [How Wales should use its expats and migrants to build a success](#)

Business Support for Eco-Innovation is one of dozens of events in this year which is jointly organised by the Electronics and Software Network for Wales Knowledge Transfer Network (KTN) with the support of Welsh Government.

Chris Brooker, senior service designer at PDR, said: "Up until recently, it was difficult for companies to implement eco-innovation into their business models as it requires the sale of services as well as products.

"Material costs are rising and waste management is becoming more and more complicated. As a result, more companies are applying eco-innovation into their business models.

"The Welsh Government needs to be aware of the complications that businesses face in their transition to more eco-innovative and circular business models, such as with legislation changes, funding, creative policies and individual support.

"We hope this event will instigate debate between organisations to uncover what that are required as well as sharing best practice and inspiring new business models through this innovative way of trading."

This is the second year the Wales Festival of Innovation has taken place, with hundreds of companies and organisations are taking part including software, electronics, automotive and aerospace enterprises as well as leading university departments.

The screenshot shows the WalesOnline website interface. At the top, there's a navigation bar with 'WalesOnline' logo and 'WEBSITE OF THE YEAR' badge. Below it, a menu includes 'Most read', 'Live feeds', 'What's on -', 'News -', 'Rugby', 'Football', 'Business -', 'Fun Stuff', and 'In Your Area -'. A trending section highlights 'RUGBY WORLD CUP 2015', 'EDUCATING CARDIFF', and 'WALES RUGBY'. The main article is titled 'Benefits of eco-innovation for businesses will be top of the agenda at Cardiff Met event next week'. It includes a date '12:05, 20 JUN 2015' and author 'BY CHRIS KILGUSKY'. The article text discusses 'Business Support for Eco-Innovation' as part of the Wales Festival of Innovation, mentioning the Electronics and Software Network for Wales Knowledge Transfer Network (KTN) and Welsh Government support. It quotes Chris Brooker from PDR. Below the text is a photo of a man working in a factory setting. A sidebar on the right features a 'SUPERFAST CYFFWR YMAU CYMRU' banner with the text 'SUPERFAST BROADBAND HAS ARRIVED!' and logos for BT and other providers. At the bottom, there's a 'Recommended in Business News' section with links to 'RUGBY WORLD CUP' and 'CARDIFF CENTRAL'.

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Today, many of the world's leading organisations and more increasingly, academic

Increasingly, these businesses are harnessing the talent, new ideas and start-ups. This is good news for Wales and start-ups.

This fact was highlighted in the 2015 ESTnet Awards created to shine a spotlight on businesses emerging in Wales.

It's time for Wales' leading organisations to collaborate with the multinationals that can make Wales the next big thing.

* Colnnovate takes place at the Hotel, Cardiff. Register for free.

* Chris Meadows is head of open innovation at Colnno

The concept is to create an opportunity specific technical challenges faced by a company to solve them. You may work with small businesses; the answer is often offered by open innovation.

Successful innovation in today's world organisations and more increasingly, academic

Embedding collaborative open innovation existing opportunities and networks create companies and ESTnet, the governing body

RELATED ARTICLE: [Excellence in Wales! the ESTnet Awards](#)

The potential benefits offered to business are significant.

For larger businesses, working with a research facilities often allows them to approach disruptive manor.

By the same token, the ability to work with universities, SMEs and individuals, reach a wider

However, open innovation should not be made connections with new businesses to work together to access new capabilities, sharing the risks, resources and reward

RELATED ARTICLE: [Open innovation is governments to get involved](#)

Today, many of the world's leading organisations and more increasingly, academic

Increasingly, these businesses are harnessing the talent, new ideas and start-ups. This is good news for Wales, and start-ups.

The industrial revolution saw Wales' natural resources and people at the corner of the globe.

For example, today, almost every smartphone or tablet device developed and manufactured by a global leading technology headquartered here in Wales.



Welsh consumers are set to spend £1.6bn a year using their smartphones

Having these businesses here is just the first step in making innovative technology.

Boosting wider awareness of the innovation that exists in Wales

This month marks the second year of the Wales Festival of Innovation celebration that will see businesses and universities across the doors to host events showcasing new ideas and opportunities

One such event is Colnnovate, Wales' first collaborative open Colnno will bring organizations such as IQE, General Dynamics Airbus Group, the KTN (the Knowledge Transfer Network) and Welsh SMEs, start-ups and universities.

'Successful innovation in today's collaboration, within and across of more increasingly, across

We are proud of our industrial heritage, but we must also realise that Wales currently stands on the precipice of another revolution, an innovation revolution, and its success will require collaboration.

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The report showed that the number of new digital companies being created in Wales by 87% between 2010 and 2013, compared to the UK average of 53%.

RELATED ARTICLE: [Wales' goal of creating the world's first compound semiconductor cluster boosted with recruit of leading US academic](#)

These figures are impressive, but to those of us working in Wales' technology sector are not surprising.

While the general public may believe that Welsh industry and manufacturing have their heyday, the fact is that many international technology companies have recognised the potential that Wales offers and established themselves here for that reason.

Airbus Group, General Dynamics UK, General Electric, STPS, Sony, Infineon Technologies IQE and Panasonic are just a selection of the multinational powerhouses represented in Wales.

The technologies they develop are pervasive.

Airbus is one of 12 big employers we can't afford to lose in Wales



As a result technology developed and manufactured here is exported and utilised the globe in pioneering applications for the healthcare, communications, transport computing, and consumer markets to name but a few.

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First we had the industrial revolution, now it's time for Wales to become home to the innovation revolution

OPINION BY WALESONLINE

Chris Meadows, head of open innovation at Cardiff-based IQE says wider awareness of the innovation that exists in Wales is vital.

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The Telegraph

However, open innovation is the alternative that work with each other, start-up companies, and fundamental innovations to the challenges they ecosystems allow these parties to pool their str practices together to invent new solutions to the ground-breaking, inspirational technology.

Some forward-thinking businesses, including th engage with new start-ups, academia, and each travel to Wales to deliver the keynote address a Government-backed open innovation conferen organisations such as IQE (whose products are Smartphone), General Dynamics UK, GE Healt KTN and the ESTnet together with start-ups, u looking for leading-edge discussions on innovat summer. Real economic growth depends on re

Professor Eugene A. Fitzgerald is the Merton C Alliance Professor of Materials Engineering at Technology (MIT). His early career at AT&T B invention of high mobility strained silicon, an inn microprocessor chips and other advanced integ

Changing the world is a lofty goal a fundamental, ground-breaking my "go to" definition would be the

The transistor was the innovator radios the size of toasters became becoming so small and powerful The transistor was the invention pace of every innovation that fol

If you've not heard of Moore's la essence states that the density of years. It's the reason we know th tablet, iPhone, laptop will be on t economic growth world-wide for

If you think the next generation o scientists, working in very secret you're almost right. Thirty years a lab, having great ideas and dot when you work in a linear enviro

confines of the lab, you're restric market applications and how oth ideas. No single company can hi fact that fundamental innovations market just makes it more of an e as there's no guarantee the wor

That's why you routinely hear of developers just to get hold of the makes better business sense the potential dead ends. The genera developers is a process typically company, and expecting the key to appear at the right moment ar

Today 'innovation' is the buzzword that has us businesses alike, reaching for our wallets. Toda by Christmas, we accept this as an inevitable o innovation process. But how true is this and, fo innovation truly mean?

As the growing importance of advancements a economic growth become more visible, the terr towards hyperbole, and at best it is a nebulous PR's default adjective, almost anything vaguely innovative.

Investors, Governments, and leading-technolog against its potential in the marketplace. In truth innovation (a group I humbly place myself withi an idea's value in the marketplace; we're intere the world. We seek real world fundamental inn which transform supply chains, alter company r new product or service categories, and stimulat decades.

Changing the world is a lofty goal. But what wo a fundamental, ground-breaking innovation? A my "go to" definition would be the humble trans

The transistor was the innovation that made 'm radios the size of toasters became pocket-sized becoming so small and powerful they could fit i The transistor was the invention that revolution pace of every innovation that followed.

If you've not heard of Moore's law, it's an innov essence states that the density of transistors in years. It's the reason we know that a faster, lov tablet, iPhone, laptop will be on the market nex economic growth world-wide for five decades.

No Moore's Law: the technology of the future will come from open innovation

Real economic growth depends on real innovation - and technology will play a key role, says Professor Eugene A. Fitzgerald



Slick city: will our urban lives be dominated by jet cars and personal helicopters, or bikes and trams?

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By Professor Eugene A. Fitzgerald, Professor of Materials Engineering at the Massachusetts Institute of Technology (MIT)

7:00AM BST 17 May 2015

20 Comments

As consumers we are told that we live in a world of innovation. New technology is released everyday, the next generation iPhone is always just around the corner and each new device that enters the market is packed with the latest ground-breaking innovative technology.

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'Bionic' conference among Wales Festival of Innovation highlights

DOCTORS and engineers from across Wales have come together in Cardiff for a groundbreaking event designed to explore the hugely expanding role technology is playing in the care of patients.

Entitled The Bionic Clinician, the conference represented one of the highlights of this month's Wales Festival of Innovation by showcasing how the lines are becoming "increasingly blurred" between clinicians and the hi-tech equipment they depend upon to deliver their services.

The gathering of health professionals and representatives of Wales' growing medical and surgical devices industry was chaired by Dr Rams Ramanan, a clinician, cardiac surgeon and professor associated with Bioengi-

neering at Brunel. He said: "The 21st-century clinician is inextricably linked to, and dependent upon, technology to deliver care that is safe, standardised and efficient.

"As equipment becomes ever more sophisticated, we can envisage a future in which the clinician becomes truly bionic."

Dr Ramanan, who is also managing director of medical technology firm Innovative Solutions in Informatics, added: "Modern doctors find it almost impossible to function without these technologies."

Speaking at the event, which was organised by MediWales and the Knowledge Transfer Network, he predicted that accelerating growth in clinical technology would be good news for Wales

which, he said, has a "flourishing healthcare industry".

But he stressed the need for a balanced approach to this "Man-Machine" partnership in medical and surgical practice.

He added that the ability of technology to expand areas such as remotely-delivered treatments or robotic surgery would ultimately help control the rising cost of delivering healthcare as well as improving the care itself.

The Bionic Clinician event included demonstrations of some of the latest medical robotics in action.

This month-long celebration of technological progress and invention is designed to highlight the extent of scientific exploration and innovation going on in Wales.

Free dock lock event for engineering enthusiasts



The gates, which weigh 90 tonnes each, were installed as part of a 50m project to speed up lock times and improve accessibility into and out of Milford Docks and Marina.

Joanna Bayers / Sunday 22 June 2015 / News

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1 comment

Sunday 22 June 2015

MEMBERS of the public and engineering professionals will get the chance to discover the challenges and solutions involved in Milford Haven's £6 million lock gate project.

The free 'Tide Tuning for Wales' event on Tuesday, June 30, will allow anyone with an interest in the design and construction of the project to attend a lecture hosted by two of its lead engineers.

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Rob Morgan, project manager for Atkins, and Tim Bowles, engineering director at the Port of Milford Haven will be giving a talk as part of the month-long Wales Festival of Innovation.

The topics for discussion will be the planning and design process of the state-of-the-art lock gates, which were installed last month and are designed to speed up lock times and make the town's marina more accessible to tourists.

The series of lectures is open to the general public, but will be of particular interest to engineers – specifically those specialising in marine or eco-friendly projects – environmental scientists, and students.

Engineers with an ICE membership who attend can also claim Continual Professional Development hours after attending.

The people behind Porthcawl Harbour and Swansea Bay Tidal Lagoon will also be in attendance.

Idris Price, of Wales Festival of Innovation, said: "There is a lot of impressive and creative work going on in Wales and it's important this is recognised widely within and beyond our borders in order to encourage even more of this kind of activity, which is vital to our future."

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‘Show that world-class innovation is right here’

Sion Barry
Business Editor
sion.barry@westernmail.co.uk

BUSINESS and organisations in Wales that develop ground-breaking products, services and processes are being urged to open their doors this summer to show off their ideas and expertise.

The aim is to help embed innovation as a major engine of Welsh economic growth, with the potential to increase national earnings by hundreds of millions of pounds each year and create thousands of new jobs.

Following the success of the pilot Wales Festival of Innovation in 2014, in which about 40 firms and university technology teams took part, it was announced this week that an enlarged festival will take place throughout June 2016.

During this month-long ‘celebration’ of new ideas and achievements, workshops, exhibitions, open days, demonstrations, lectures and conferences will be held across the country to give business people, students and the general public an insight into the wealth of ground-breaking work being done by scientists and entrepreneurs in Wales.

Plans for the second Wales Festival of Innovation were outlined in leading-edge business gathered in Cardiff recently for the first 2016 meeting of ESTnet, the electronics and software technologies network for Wales, which organises the festival in partnership with the Knowledge Transfer Network (KTN) and the Welsh Government.

Organisers say the initiative is designed to inspire more businesses and individuals ‘involved in being forward and developing new ideas and skills’ to exhibit Wales in the eyes of potential investors and the wider business world as a hotbed of fresh thinking.

In addition it facilitates contacts and the exchange of ideas that will create collaborations and spawn a new generation of innovative products and solutions.

Festival spokesman Idris Price: ‘It’s important that people know about the huge range of innovation already taking place here.

‘Much of it is hidden in the scenes because it involves enabling technology which makes possible the high-profile products on the stand, particularly electronic devices and software systems.

‘By showcasing this ground-breaking work we will build confidence in Wales as a place where profitable, new developments are part and parcel of the culture.’

He pointed to the UK Innovation Survey which found that just over 50% of Welsh firms with more than 10 employees were ‘innovation ready’ and that 22.5% of Welsh companies turnover is currently generated from new or significantly improved products.

Mr Price said the second and



Ian Menzies, co-chair of the Innovation Advisory Council for Wales

enlarged festival this summer would be another milestone in the task of building Wales’ reputation as a ‘land of innovation’. It follows the creation in October of the Innovation Advisory Council for Wales, a public and private sector partnership which will advise the Welsh Government on how to help industry to exploit its knowledge and expertise in line with emerging market trends.

He added: ‘There is enormous potential to generate additional wealth and jobs by breaking new ground, developing new intellectual property and engineering new patterns on home-grown products, services and processes. The festival will not only encourage new thinking and highlight Wales’ strengths but will bring together like-minded individuals

and organisations to collaborate on exciting and profitable new projects.’

Dr Steve Welch from the Knowledge Transfer Network (KTN) said: ‘The idea of the festival is to capture the totality of what’s happening in Wales, which is so rich in innovative companies. By bringing all these events together in June, we can improve the potential of the activity and give the participants an opportunity to show everyone what is going on. We also want the festival to be as broad and inclusive as possible.’

Among those reporting business benefits from last year’s festival is Cardiff-based specialist order manufacturer IQE.

IQE director Chris Meadows said the firm’s ‘OpenIQE’ open innova-

tion event held in North Wales as part of the festival, had yielded several new opportunities and potential partnerships which are now developing leading-edge products for the electronics industry.’

Ian Menzies, co-chair of the new Innovation Advisory Council for Wales, encouraged businesses at the ESTnet meeting, held in the Swansea Stadium, Cardiff, to get involved in the festival.

He said: ‘Innovation is changing the way we live. We need new ideas to stay competitive, new technologies to improve lives, and new insights to lead the way.’

Our multinationals certainly made their mark. In Tudor times Robert Beckett of Tilly inquired the equals symbol (=) and introduced the plus sign (+) to the world. In Wales it already being the way.’

Improving what we do is vital for Wales’ prosperity

Wales has a great heritage of invention, but we need to make our innovation bolder and more ambitious, writes **Ian Menzies**

INNOVATION

If ever we needed convincing of the importance of constant innovation we should simply look back at the sheer scale of change in our own home economy over the last 30 years. Pretty much every firm around has had to transform the way it operates and the products and services it provides. Those who haven’t are simply no longer here.

When we look at the emergence of new and more sophisticated materials – such as micro-electronics, life sciences and software development, and also new digital technology becoming a key driver for most other industries, we realise how all-pervasive that change has been.

Keeping abreast is vital in order to remain competitive, but those who really prosper are those who actually lead change – lead by challenging the present and imagining the future.

That contribution may be a world leading and market-changing device, or just a more effective process for delivering an existing product or service.

Either way, Wales needs more such people, generating the kind of ideas that translate into registered intellectual property that can, in time, make the market at it and pay attention.

Equally an increasing proportion of the nation’s wealth creation now derives from new ideas conceived and developed on home soil, many supported by Welsh Government investment and a good number flowing from excellent work in the Welsh universities.

The most recent UK survey of innovation ranked Wales third among Britain’s 12 nations and regions for the proportion of ‘innovation active’ enterprises. More than four in 10 Welsh-based firms across Wales acceded on the basis that they had introduced a new or significantly improved product or processes or they engaged in innovative projects.

Nevertheless we still have a long way to go before we join the ranks of those who have truly embedded a culture of innovation and progress – the Singapore and Korea of this world. But that is where we need to set our sights.

It is worth noting that such innovation is not just about products as a small but innovative nation and looking back, we can certainly take some inspiration from how such innovations have gone the world.

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English speaking world.

Two centuries later William Jones of Andover began using the Greek letters π to describe the mathematical constant that allows us to measure the circumference of a circle. It’s not hard to see how important that was for engineers and designers shaping a new industrial world.

More recent innovations from Wales include the microchip, mail-order shopping, the healthsurfer and the rigid-inflated inflatable boat (RIB boat), which has helped save lives worldwide.

That’s just scratching the surface. Preserving 3000 work on data packet transfer that contributed to the creation of the internet is typical of the background.

Welsh technology that makes many high-value products possible. Another example is the tiny semi-conductors designed by IZEL in Moldavia that are used in more than half of the world’s mobile phones.

Such impressive innovation is all around us. Look, for example, at Sorel Chiff of Croywell, which designed a bridge that can run for 10 days without a power supply, keeping critical sections road in remote areas zones. Microsoft founder Bill Gates was so impressed that he donated £25,000 towards its work.

Concrete Carvers of Penrhydyfed developed rolls of fabric, embedded with concrete that can be moulded into any shape and, when water is applied, sets as hard as traditional concrete to provide shelter in hostile environments.

We’re seeing many highly original products, particularly in South Wales. Just to name a few: the UK’s first 3D printer, are certainly adding the process.

It is worth noting that such innovation becomes highly visible to industry, education and the population generally.

The Welsh Government in particular has recognised just how important it is for Wales to become an innovation leader. This was reflected in the recent creation of the Innovation Advisory Council for Wales, to advise government on emerging opportunities and guide funding support to where it will have greatest impact.

More recent figures show that 22.5% of Welsh company turnover was generated from new or significantly improved products and services, with 1.8% of total turnover coming from products that were



Rolls of concrete beams being inspected at Concrete Canvas in Treforest

partnerships to underpin future pioneering work.

The initiative to create the Wales Festival of Innovation has come from the electronics and software technology network, ESTnet, along with the Welsh Government and the Knowledge Transfer Network (KTN), who support the work of the Technology Strategy Board.

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newly new to the market. This already amounts to hundreds of millions of pounds per annum. But 1.8% is still a relatively low proportion of company output to date so it still much to play for.

Through our education establishments and through our business networks we need to firmly embed the idea that innovation is not an option. It’s essential for survival. Moreover we need to make our innovation bigger, bolder and more ambitious.

Creating and sustaining such momentum is what will give Wales the priority and long term economic security it needs.

Ian Menzies is co-chair of the Innovation Advisory Council for Wales and chair of ESTnet and has led the creation of the Wales Festival of Innovation. For information on staging an event during the festival visit www.walesfestivalofinnovation.org.

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