

Interface

The knowledge connection for business

Annual Review 2018-2019

#MATCHEDBYINTERFACE



SUPPORTING
INNOVATION



ACCELERATING
DEVELOPMENT



DELIVERING LONG
LASTING CONNECTIONS
& PARTNERSHIPS



MATCHING BUSINESS
TO ACADEMIC
EXPERTISE

LEADING TO ECONOMIC GROWTH,
SOCIETAL IMPROVEMENTS &
ENVIRONMENTAL ADVANCES

Making connections for a successful Scotland



Professor Andrea Nolan OBE

Chair of Interface Strategic Board, Convener of Universities Scotland, Principal and Vice-Chancellor of Edinburgh Napier University

Since I joined as Chair of Interface Strategic Board last year, the organisation has made great strides in implementing its key priorities towards reaching our 2023 goals. The Scottish Government's commitment to Interface was underpinned by the First Minister's announcement of a £5m investment through our funding partners, the Scottish Funding Council, Scottish Enterprise and Highlands and Islands Enterprise, to strengthen business-academic partnerships over the next five years.

Scotland is renowned globally for its pioneering spirit and, in these uncertain times, many more companies could boost their business by tapping into academic expertise. **Successful collaborations between businesses and universities can deliver improvements which reduce operating costs; increase productivity, profits, exports or turnover; and create or safeguard employment.** In the past year, the Interface team has engaged with hundreds of companies, facilitating more than 560 discussions with 25 different universities and colleges, leading to 270 collaborative projects. For the majority of these companies, it is their first engagement with an academic team for collaborative research and development.

Supporting innovation in ways that are faster, smarter, more collaborative and more inclusive is an ambition for all of Scotland, and we are working hard to support this every day.

Please encourage your colleagues in businesses across Scotland to contact Interface, to find out more and help us make Scotland **the place to do business.**

Interface's priorities are to:

- **Inspire** significantly more businesses to partner with Scotland's universities and colleges
- Support the development of long-term partnerships to accelerate the scale up of businesses through **innovation**
- Enable economic and societal **impact** to transform lives locally and globally
- **Inform** policy and practice to support skills, research and development in an ever-changing environment.

100%

of companies surveyed were extremely satisfied/satisfied with the support they received from Interface



Karen Watt

Chief Executive, Scottish Funding Council

The Scottish Funding Council's new strategic framework describes Scotland as an ambitious nation, keen to translate learning, knowledge and skills into sustainable and inclusive economic growth – creating opportunity, prosperity and wellbeing for everyone.

Since 2005, innovative Scottish businesses with an ambition to grow have been able to benefit from the support provided by Interface. For over 3,000 companies, real-life business challenges have been translated into projects that have been matched with relevant academic expertise to create productive and effective collaborations.

The concept works so well because of the quality of ideas coming from businesses and the excellence of the research in Scotland's world-leading universities and colleges. I am delighted that one of the many ways Interface brings together businesses and academics is through the Scottish Funding Council's Innovation Voucher scheme.

The ever-growing number of case studies on the Interface website details new products created, new services developed and new markets opened. This means real jobs either safeguarded or created and real opportunities for people and communities across the country. Innovation is vital for future economic prosperity and the role of Interface is as important as ever.

Big impacts

The last twelve months saw key announcements about the continued success of Interface and the Innovation Voucher scheme, administered by Interface.

In November 2018, First Minister Nicola Sturgeon MSP announced a **£5m investment in Interface**, funded by the Scottish Funding Council, Scottish Enterprise and Highlands and Islands Enterprise.

This is enabling Interface to continue to support thousands of businesses to innovate and grow. Through industry-led research and development partnerships with academia, companies supported by Interface contribute an estimated **£64.2 million** (GVA) to the economy each year.

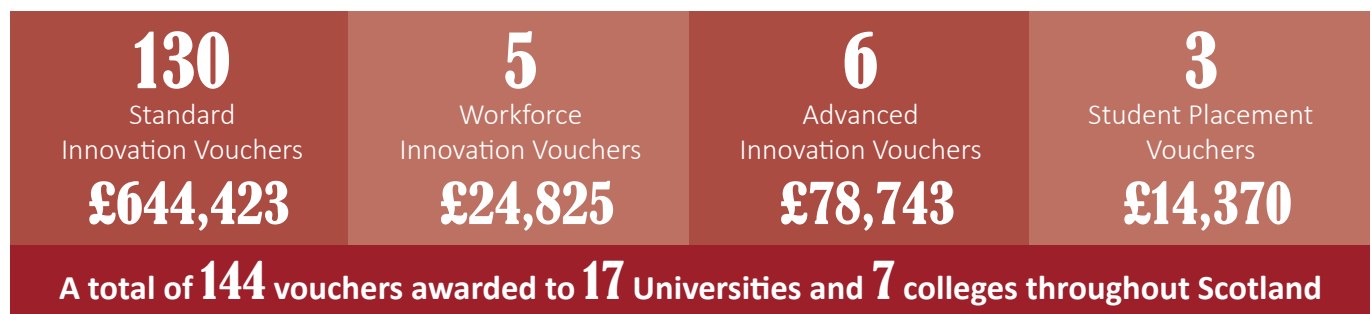
In July 2019, Interface and funding partner the Scottish Funding Council, revealed that the Innovation Voucher funding programme had to date awarded £6m to boost business-academic innovation. Since 2012, **1,200** Innovation Vouchers were awarded, with a value of up to **£5,000** each. A new Innovation Voucher category was also introduced to support workforce innovation.



First Minister Nicola Sturgeon MSP:

This additional £5 million will help nurture links between world-leading research and innovation, which provide a competitive edge for industry, and support valuable inward investment and exports.

Innovation Vouchers awarded 2018-19



Strength in numbers

Three industry-led projects, brokered by Interface, with the potential to transform creative industries, tourism and food and drink, were awarded funding with a value just under **£30,000**. The projects included investigating the risk of fungal toxin of Scottish oats, and developing decision-support models for waste processing on Arran, helping it to become Scotland's first sustainable island. The third project explored using virtual reality to collect and analyse biometric data to make greater efficiencies in the textile industry.

A global reputation

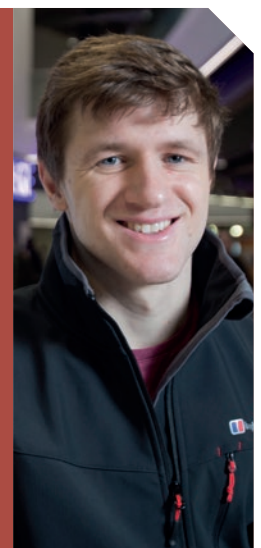
Having previously welcomed delegations from Australia, Denmark, Ireland and other parts of the UK, this year, Interface shared best practices with many international groups including:

- A Flemish innovation and entrepreneurship group met with Interface and the supporting ecosystem for business in Scotland to help inform their future policy and functions.
- An Indian delegation included technology companies seeking to understand opportunities to work with Scottish companies, support organisations and academia.

Case study

Dale Colley, CEO of Altitude Thinking Ltd, Grangemouth, sought an innovative solution to develop a programmable drone to navigate waterways, producing real-time reports on water pollution levels.

With funding from an Innovation Voucher, this project with City of Glasgow College has also boosted the academic's skills by presenting a real-life industry challenge and increasing knowledge to incorporate into the curriculum.



Inspiring innovation

A year of clever connections

447 expertise searches - project briefs outlining business-led challenges - issued to universities, colleges, research institutes and other partners, of which:

- **394** went on to scope out a project
- Two thirds were for a different academic discipline than the main business sector of the company

270 collaborative projects kicked off between a business and a university or college - the highest recorded in any year, and a 14% increase on the previous year

159 projects were the first R & D collaboration the business had with a university or college

64% of first-time collaborative projects were between a business and an academic partner located in different geographical regions



10 multi-party industry sector challenges were developed into fully-funded projects, **4** of which will lead to new products/processes, and **6** of which will deliver wider sector benefits and impacts

39% of collaborative projects were led by a female business contact – an increase from **35%** compared to last year

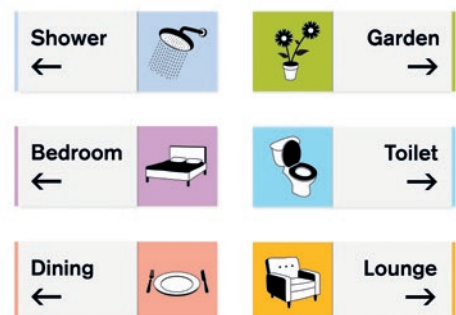
The top three sectors for collaborative projects were Creative Industries (**21.5%**), Tourism and Leisure (**15.9%**) and Food and Drink, Agritech and Aquaculture (**15.9%**).

50% of companies surveyed planned to continue to work with their academic partner once the initial project was completed

Case study

Award winning design agency StudioLR teamed up with the University of Stirling and the University of Edinburgh to design guidelines for signage for people with dementia. Interface was able to identify extensive research expertise in the universities in relation to the care, support and good practice of supporting people with dementia. The initial co-designed research was funded by an Innovation Voucher. Following Big Lottery funding, the company worked with school pupil Grace Warnock on her “any disability” designs of inclusive symbols to encourage awareness of invisible disabilities, which were unveiled in the House of Commons.

The company, based in Edinburgh, also collaborated on a separate project with the University of Aberdeen through the Scottish Graduate School for Arts and Humanities internship programme on researching complex language in everyday settings.



William McPherson, Projects Director, Re-Tek:

Interface has been an outstanding partner to Re-Tek, coordinating support for several ventures, including a project with University of Strathclyde to support improvements in our Recycling Centre, and I would highly recommend their services.

Innovation nation

Case study

First Minister Nicola Sturgeon MSP visited the Tomintoul and Glenlivet Discovery Centre in August 2018. The Centre received funding from Highlands and Islands Enterprise to develop a fully immersive visual experience about the past illicit whisky industry. Interface supported the organisation to access virtual reality expertise within the University of St Andrews.

Interface Business Engagement Manager, Lorraine Thompson, commented: "This was a fantastic opportunity to share with the First Minister a great example of Interface's support for an organisation in an economically fragile part of Scotland, tapping into world-class academic expertise to capture the imagination of potential visitors, young and old. The centre is also expanding its workforce, which is great news for the area."



Collective knowledge brings mutual benefits

Focussing on creative industries, food & drink and tourism, the Sector Engagement team have supported **44** groups of businesses in the final year of a three-year pilot, promoting academic expertise to more than **500** companies.

Creative connections

The digital economy, environmental sustainability and cross-sector working have been recurring themes for Interface's creative industries, from exploring sustainable materials in conjunction with chemists and engineers to developing new collaborative digital platforms to enhance audience experiences.

Food & drink futures

Interface aligned its activity with strategies in the food and drink sector, particularly those related to innovation. There is an increasing focus for joint working across groups of businesses to maximise impact from data, supply chain efficiencies and sustainability. Our thought-provoking food tourism events and learning journeys held throughout the year were oversubscribed by industry attendees and have led to much follow-on activity.

Tourism trends

Data science, and associated disciplines, is a key driver of innovation across the tourism sector and the Interface team, working with partners, has been leading the way to inspire businesses as to the art of the possible. The team have facilitated many multiparty academic – business projects, such as the use of artificial intelligence in personalising the customer experience and visitor flow management.



Marc Crothall, CEO, the Scottish Tourism Alliance and a member of the Interface Strategic Board:

Interface is uniquely positioned to support and assist the tourism sector to access the world-leading academic expertise required to apply new technologies such as AI, automation, immersive tech and data developments.

Case study

Green start-up Remarkable Energy Ltd, based in Edinburgh, wanted to establish the feasibility of converting mixed waste plastic into a diesel fuel substitute. Interface connected them to Heriot-Watt University's Institute of Mechanical, Process and Energy Engineering. The project was initially funded by a Scottish Funding Council Innovation Voucher, to prove the concept, allowing the partners to continue their research to develop a commercially-scaled process via a Knowledge Transfer Partnership.



Award-winning fruit and vegetable retailer, Fife-based Ivan Wood & Sons, opened its doors to three local MSPs in October to showcase its innovative starch filtration system, developed in partnership with Abertay University.

Annabelle Ewing MSP, Willie Rennie MSP, and Claire Baker MSP, learned about Peel Tech Ltd, invented by Malcolm Wood to help food outlets meet new legislation banning food waste, including starch, from being disposed of in water supplies. Peel Tech Ltd (the company established to commercialise the product) and the Abertay University Knowledge Transfer Partnership Associate who helped develop it, were recognised for their productive partnership at the Scottish Knowledge Exchange Awards 2017. The company continues to collaborate with Abertay University to develop the filtration system, which is now sold throughout the UK and overseas.

Ivan McKee MSP, Minister for Trade, Investment and Innovation, visited Interface's Edinburgh office in December 2018 to hear directly about the transformational work of the team. Mr McKee met wellbeing company Welbot to learn how academic expertise is making a difference to scaling the business. Interface introduced the Edinburgh-based wellness management software provider, to several universities including University of Strathclyde, University of Aberdeen and University of Edinburgh, to accelerate the development of the company's digital platform which helps people look after their wellbeing whilst at work.

The outcomes of the partnerships helped launch the product commercially, targeting employers to support healthier workplace environments for their staff.

Case study

Aberdeen-based RIGOCAL Engineering Ltd was matched with University of Edinburgh to develop a marine mammal detection and protection service, combining machine learning with infrared and high definition sensors.

Collaborating with the Edinburgh Parallel Computing Centre (EPCC) they carried out a feasibility study which addressed the gap in RIGOCAL's technical and resource capabilities for developing a machine learning algorithm to analyse data in real-time. This innovation will change the way traditional marine mammal observation is conducted, providing more accurate and consistent service at a lower cost to the energy, construction and offshore industries.



Dr Alessandro Bedin,
M.D. of RIGOCAL.
Photo by Abermedia.



Mykay Kamara, CEO, Welbot:

I cannot overstate what a great role Interface plays, linking fledgling businesses like Welbot to university expertise across Scotland.

Case study

When **Dumfries Museum** was given a suitcase belonging to the late German photographer and ethnographer, Dr Werner Kissling, they kept it in storage until Interface approached them with information about the Scottish Graduate School for Arts and Humanities. Interface was able to connect them to a PhD student studying anthropology at University of Aberdeen, funded by SGSAH. Kirsty Kernohan spent several weeks cataloguing and digitising the contents, including new images and postcards, and interviewing people who had known Dr Kissling.

Museum curator, Siobhan Ratchford, said the project would not have gone ahead without external support and it had expanded and preserved an important collection for future generations.



Scottish Knowledge Exchange Awards 2019



The people and partnerships at the heart of the most ground-breaking, potentially life-changing innovations developed by businesses and academics were unveiled at the Scottish Knowledge Exchange Awards in February 2019.

The winners were:

Innovation of the Year

G-Hold and the **University of the West of Scotland's Institute for Clinical Exercise & Health Science** for product testing and proving ergonomic benefits for a patented handhold which reduces wrist strain when holding devices such as tablets.

Knowledge Exchange Champion of the Year

Professor David Lane, Heriot-Watt University, an international scientist, engineer, innovator and investor in robotics and artificial intelligence.

Making a Difference

Scene Connect Ltd and **Heriot-Watt University's School of Energy, Geoscience Infrastructure and Society and Institute for Infrastructure and Environment**, for creating a crop irrigation system for Indian farmers to control water volumes.

Multiparty Collaboration

Heriot-Watt University's International Centre for Brewing & Distilling with the **Scottish Distillers Association** and five distilleries for developing a library of Scottish botanicals for creating new gins and botanical liqueurs and supporting export activity.

Powerful Partnership, sponsored by SCI Scotland

Sunamp Ltd and the **University of Edinburgh's School of Chemistry**. Since 2010, this partnership has delivered substantial benefits to both partners, society and the wider economy through the development of heat storage batteries.

Rising Star of the Year

Dr Maizura Mokhtar, Knowledge Transfer Partnership Associate from **Heriot-Watt University**, undertook a project with **Scottish Power Energy Networks** analysing data from nationwide smart meters and transforming it into meaningful information.



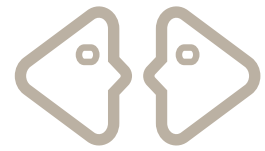
Spotlight Award

A new category introduced in 2019 to celebrate a partnership which has come together from a different business sector and academic discipline to provide an innovative solution to a challenge. The winner, **Dynamic Coast**, led by **Scottish Natural Heritage** with the **University of Glasgow's School of Geographical & Earth Sciences**, aims to improve coastal planning through assessing changes over 130 years of 21,000km of coastlines.



Ivan McKee MSP, Minister for Trade, Investment and Innovation, who presented the awards said:

These partnerships will help to drive a thriving and dynamic innovation ecosystem that is essential for improved productivity, competitiveness and growth.



Dr Siobhán Jordan

Director, Interface

Our achievements can be seen in the number of businesses we **inspire** to **innovate**, the **impacts** from their collaborations with universities and colleges, and our ability to **inform** policy and best practice in an ever-changing world.

It has been a great pleasure to lead the high performing **Interface team** as they support business-academic partnerships with enormous passion, commitment, knowledge and integrity, all core values of the organisation.



The Interface team

Receiving a **100% satisfaction rating** this year from our customers clearly demonstrates the difference we are making as we match many hundreds of academic partners with businesses large and small, from global players, intrapreneurs within companies to entrepreneurs.

The year hasn't been without its challenges: the wider political and economic environment has brought and continues to offer considerable uncertainties. However, often the primary need for innovation is turning challenges into opportunities so we have been instrumental in fostering a record

number of ground-breaking collaborations. There have been many highlights, some of which you have read about in this annual review, and all of which we have shared through our regular communications. As always, communication is two-way, so if you have ideas of how we can reach more businesses or continue to delight our customers, please do get in touch.

All it takes is a conversation to begin exploring the possibilities. I am looking forward to seeing many more organisations **#MATCHEDBYINTERFACE** in the year ahead and the exciting innovations these collaborative projects will bring.



The Interface Strategic Board



Bridging the gap between business and universities

Forth Bridges, by Alan Pratt

 **Interface** #MATCHEDBYINTERFACE
The knowledge connection for business

interface-online.org.uk

0845 013 0536

info@interface-online.org.uk

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SCOTLAND CAN DO
IT'S TIME TO MAKE HISTORY