

A woman with dark hair, wearing a green headscarf and a white lab coat, is sitting on a wooden bench. She is looking directly at the camera with a neutral expression. Her hands are clasped in her lap. She is wearing a ring on her left hand. The background consists of several white lab coats hanging on a rack. A red lab coat is visible on the far left. The overall setting appears to be a laboratory or a medical office.

Innovate UK

Helping innovative businesses succeed

Innovate UK is part of
**UK Research
and Innovation**

Innovate UK's role within UK Research and Innovation

Innovate UK is part of UK Research and Innovation, the new organisation that will ensure the UK maintains its world leading position in research and innovation.

The government has set an ambition for the UK to become the most innovative country in the world, and as part of the modern Industrial Strategy, has committed to raise investment in research and development (R&D) to 2.4% of GDP by 2027.

Much of the increased investment will need to come from the private sector – industry and investors.

Innovate UK is focused on accelerating business growth through innovation and is ideally placed to support that investment. We are agile and have industry and research expertise across all sectors, so we can share and translate ideas and support emerging opportunities.

innovateuk.ukri.org

Economic impact

**£18
BILLION**

Since 2007, Innovate UK has invested around £2.5 billion in businesses across the country to help launch new ideas. Industry has matched this with £1.8 billion – returning up to £18 billion to the economy.

**70,000
JOBS**

Innovate UK has helped more than 8,500 organisations realise the potential of new technologies, creating around 70,000 new jobs; that's 9 for each company Innovate UK has worked with.

£1=£7

On average, Innovate UK returns up to £7 to the economy for every £1 invested in a project.

Economic impact

Innovate UK stimulates productivity and economic growth by supporting businesses to develop and realise the potential of new ideas, including those from the UK's world-class research base.

Since its inception 10 years ago, Innovate UK has been successfully helping businesses to identify new market trends and technologies and to develop them into the products, processes and services that grow their companies, and consequently the UK economy.

Our funding support, in the form of matched grants and loans, provides opportunities for businesses to innovate faster, more intensely, or more collaboratively than they would otherwise.

There are many ways for innovative businesses to seek finance; from bank loans to equity and crowdfunding. But the funding provided by Innovate UK is fundamentally different:

- offering funding at an earlier stage than banks and equity investors may be willing to, due to technological or commercial risk
- independent peer review of applications means it identifies and supports the very best ideas
- monitoring of R&D projects that helps businesses keep their projects on track
- we do not take any equity in the business or make any claim on the intellectual property created in the innovation

Innovate UK provides collaboration support for businesses, researchers, investors and potential customers. We connect innovators through the Knowledge Transfer Network and support them through the Enterprise Europe Network. With cross-sector expertise, strong networks and partnerships with the research councils, we help make the right connections at the right time to accelerate innovation.

Innovate UK funds a network of world-leading technology and innovation centres, called Catapults, which aim to transform the UK's ability to innovate in key areas. Each physical centre provides businesses with access to expertise, equipment, skills and facilities.



REALCAR – innovating across the supply chain

Jaguar Land Rover is using up to 50% recycled aluminium in new cars, demonstrating how the 'circular economy' can bring major environmental benefits to manufacturing.

The REALCAR project saw the company invest in systems that separate grades of aluminium scrap before supply chain partners melt down and reconstitute it.

It then becomes part of a new aluminium alloy that's been developed by Novelis, the world's largest recycler of aluminium. Novelis invested £6 million in new equipment and created 30 full-time jobs as part of the project.

The project was supported by Innovate UK and the Office for Low Emission Vehicles and its success has seen recycled aluminium being used in the Jaguar XE, XF and F-PACE.

Supporting small and medium-sized enterprises

Innovate UK's funding, connecting and support services are tailored to meet the needs of highly innovative SMEs that have strong potential for stellar growth. We help SMEs to find the help they need, regardless of sector or technology area. We support the best ideas that have the potential to transform businesses and generate economic growth.

2017/18 SME support

SMEs funded a total of

1,551 times

SMEs represent

72%

of all businesses we fund

SMEs received a total of

£325m

51%

of all our funding to businesses

Versarien – Graphene comes of age

Advanced materials manufacturer Versarien started out with 2 staff in 2010, operating out of a garage, but after winning an Innovate UK grant, the company began to grow rapidly.

Versarien now employs more than 105 people across 4 sites in the UK and by 2015 was listed on the London Stock Exchange. In 2017 it received “one of, if not the biggest, graphene orders in the world,” says founder and chief executive Neill Ricketts.

“Graphene is coming of age,” says Ricketts. “It’ll be in almost everything that we use from rubber bands to structural components in aircrafts, consumer goods and clothing.”



Driving business-led innovation

Innovate UK will manage over £1.1 billion in grant funding in 2018/19, 26% of this on behalf of other organisations. Grants vary in size according to business need; they are typically for projects lasting between 1 to 3 years and between £50,000 and £2 million.

Collaborative R&D through the Industrial Strategy Challenge Fund

The Industrial Strategy Challenge Fund (ISCF) is an ambitious programme led by UK Research and Innovation and delivered by Innovate UK and the research councils. It brings together world-class UK research with business investment to tackle the major industrial and societal challenges facing the UK. It will develop technologies that will transform existing industries and create new ones.

It addresses the 4 Grand Challenges set out in the government's Industrial Strategy:



AI and data economy

to put the UK at the forefront of the artificial intelligence and data revolution



Future of mobility

to become a world leader in shaping the future of mobility



Clean growth

to maximise the advantages for UK industry from the global shift to clean growth



Ageing society

to harness the power of innovation to help meet the needs of an ageing society

Innovate UK is supporting collaborative research and development to help achieve these aims.

FundamentalVR – transforming surgical training

Virtual, augmented and mixed reality company FundamentalVR is using ISCF funds to develop a modern surgical training platform. It will enable surgeons to use virtual reality to learn procedures before they operate on human tissue.

“While medicine has advanced a lot over the last 100 years, the teaching of surgery hasn’t,” says Derek Nicholson, R&D Director at FundamentalVR.

“What we’re doing is using virtual reality combined with haptic feedback to deliver a totally new way of experiencing surgical procedures,” adds founder Richard Vincent.





Brill Power – better batteries

Current electric vehicle batteries don't perform as well as combustion engines and degrade quickly. The funding from the ISCF has allowed Brill Power to lead a project to enhance the manufacture and performance of electric vehicle batteries.

“At Brill Power we've developed battery control and management technology that can make lithium-ion batteries live for up to 60% longer,” says Brill Power CEO Christoph Birkel.

Brill Power's approach addresses poor longevity by producing modular batteries which means when one module goes, the whole battery doesn't need to be replaced.

A man in a dark jacket and blue trousers stands in a field of yellow daffodils. The field is vast and stretches to the horizon under a cloudy sky. The man is looking down at the flowers with a slight smile.

Funding the best ideas from any business

Grants are offered through the Innovate UK open programme, which supports innovative UK businesses of any size and from any sector. Innovative ideas can come from any technology or industry, so the open programme complements the industry-focused funding available through the Industrial Strategy Challenge Fund.

Agroceutical – new business model for Welsh farm

Agroceutical co-founder Kevin Stephens thinks he's found a way to diversify his business by growing a natural supply of Alzheimer's medication to disrupt the market's primarily expensive and synthetic offering.

Galantamine, a recognised treatment for Alzheimer's patients, occurs naturally and in high concentrations in certain species of daffodils grown in the Welsh Black Mountains.

Innovate UK supported Agroceutical in developing a system to harvest and process the flowers in a sustainable, scalable and cost-effective way.

Kevin hopes this new crop will also provide a better future for his son, who has farming ambitions himself, by providing an additional and sustainable income.

Overcoming the obstacles to scaling up

Innovation loans

Innovation loans are aimed at innovative companies that are ready to scale up but cannot access the usual market financing due to technological or commercial risk.

The £50 million pilot programme fills the space between grants and market financing. Companies will have products close enough to market to take a loan, but do not have an acceptable risk profile for a traditional bank.

Lightfoot – looks to scale up

Lightfoot has received an Innovate UK loan to help develop its platform and technology. Described as a ‘Fitbit for cars’, the company’s innovation rewards efficient drivers using a small device that sits on a vehicle’s dashboard. It monitors driving, showing real-time and long-term efficiency to encourage better behaviour.

It is available commercially to companies with driver fleets, but now Lightfoot is planning a consumer launch in Autumn 2018.

Mark Roberts, Lightfoot CEO, said:

“This loan is pivotal for us. Receiving this loan means we can validate the right commercial model for what is, potentially, a landmark contribution to the health of our air and roads.”



Investment accelerator

Increasing private investment into R&D is vital to the UK meeting the Industrial Strategy's R&D investment target of 2.4%. The comparatively low level of private R&D investment in the UK creates barriers for young companies as investors consider the risk of many innovation projects too high, so many valuable UK opportunities remain unexploited.

This is particularly acute in young, potentially disruptive UK companies who receive only 15% of business R&D investment. In the US, the equivalent figure is 45%.

Combining grant and private funding

The investment accelerator simultaneously deploys Innovate UK grant funding alongside equity funding from private investors in a single process.

Innovate UK's reach and innovation expertise helps identify the most promising innovation opportunities while the grant funding can de-risk a potential private investment. In parallel, investor partners use their expertise to identify the most promising commercial opportunities and business management teams who have the greatest growth potential.

Once an investor puts equity funding into a business, it is likely there will be follow-up private funding to continue the development of the innovation in the UK.

Oxford Science Innovations finds new projects

In the pilot investment accelerator, investor Oxford Science Innovations partnered with 2 companies:

Connido Ltd – which developed a smart baby/parent wearable system for monitoring and promoting both parent and baby well-being.

Oxford VR – which developed a virtual reality treatment for social anxiety.

Of the investment accelerator, OSI said: “The investment accelerator enabled OSI to see more companies and invest in ones it otherwise would not have done, whilst providing additional funding for new projects in existing investments that may have been delayed.”



Powering innovation through partnership

Over the last 10 years Innovate UK has developed and deployed sector expertise, strategic understanding of the innovation landscape and effective systems and processes to enable successful business-led innovation.

We use this capability to support other government organisations to foster innovation to solve challenges. They could be at a globally important level in terms of industrial competitiveness, such as the Centre for Connected and Autonomous Vehicles (CCAV), or they could be at national level such as the work of recently launched GovTech catalyst.

Strategic support

Innovate UK manages innovation competitions on behalf of many partners including the Aerospace Technology Institute (ATI), Advanced Propulsion Centre (APC), the Office for Low Emission Vehicles (OLEV) and the Department of Health and Social Care, amongst others.

We bring the right businesses together with partners and help facilitate their relationships. We also provide the system to run funding competitions and the means to monitor and evaluate the success of these projects.

Finding the first customer

The Small Business Research Initiative (SBRI) is a scheme run primarily by Innovate UK that offers businesses a way to develop innovative products and services directly for their potential first customer. The business receives a development contract to devise the innovation from the customer – usually a public sector organisation – who provides opportunities to test and prove the innovation before they ultimately purchase it.

Nissan – game-changing infrastructure

Nissan is working to install 1,000 vehicle-to-grid (V2G) charging points across the UK over the next 3 years as part of a project that will gather data to demonstrate the effectiveness of feeding surplus energy from electric cars back to the grid.

The £9.8 million project from the Office for Low Emission Vehicles and the Department for Business, Energy and Industrial Strategy also involves V2G provider Nuvve, the National Grid and power infrastructure companies, UK Power Networks and Northern Powergrid.



Fran Bennett,
CEO, Mastodon C



Mastodon C – Solving planning challenges

London's population has grown 7.5% in just 5 years and with it comes new challenges – like housing, schools and waste disposal. Mastodon C won a £2 million SBRI contract in a 'future cities' competition to find ways of meeting these kinds of challenges.

The data science company is now helping 33 London boroughs use Witan, its decision-making platform, which lets city planners see how the latest housing projections will affect the spread of population. The results help council officials see where the demand is likely to be for infrastructure services.

Access to experts and cutting-edge facilities

Innovate UK set up the network of Catapult centres to deliver a step change in the UK's ability to commercialise its research.

The network of 10 Catapults is a long-term investment helping businesses innovate and grow. They bring industry players together from a neutral point of view and enable them to build unprecedented collaborative partnerships.

Catapults help to increase understanding and awareness of policy and regulatory issues, and work with the government on innovation-friendly policy. For example the High Value Manufacturing Catapult works with a broad range of organisations from the Foods Standards Agency to the Civil Aviation Authority and the Environment Agency.

They also help UK businesses access cutting-edge equipment that they might otherwise have to go abroad to utilise. The Catapults also employ highly-qualified specialists with the expertise that businesses need to tap into but may not have in-house.

The 10 Catapults

- Cell and Gene Therapy
- Compound Semiconductor
- Digital
- Energy Systems
- Future Cities
- High Value Manufacturing
- Medicines Discovery
- Offshore Renewable Energy
- Satellite Applications
- Transport Systems



Commercialising cancer immunotherapy IP

In June 2017, the Cell and Gene Therapy Catapult announced the sale of a subsidiary business, Catapult Therapy TCR, a collaboration with Imperial Innovations and UCL Business. The firm, which focuses on the development of a gene-modified T-cell therapy which actively targets several blood cancers and multiple solid tumours, was sold to Cell Medica.

The optimisation and development of next-generation T-cells will be conducted by Cell Medica and the Catapult and manufacturing will take place at the Catapult's large-scale cell and gene therapy manufacturing centre located at the Stevenage BioScience Catalyst.

Catapult offers tech validation

The Offshore Renewable Energy Catapult's Innovation Challenge has helped one business enter a completely new industry.

Dr Sabrina Malpede (pictured left) wanted to take her experience in the sailing industry and apply it to create a lighter, more efficient blade for offshore wind turbines made from composites and textiles.

The Catapult helped to run simulations which showed how the design would produce 9.7% more energy than existing offerings. This prompted Sabrina and her team to set up ACT Blade. The Catapult provided the connections and knowledge required to secure further funding and is now developing a new test rig at the National Renewables Energy Centre in Blyth, Northumberland, to validate and demonstrate a section of the blade prototype.

Sabrina's ambition is now to revolutionise the sector and achieve a turnover of £140m within 6 years.

Collaboration and connections

Collaboration is a theme that runs throughout Innovate UK's work. Experience continues to show that getting the right support and partners at the right time can make all the difference.

As part of UK Research and Innovation, Innovate UK works closely with colleagues across the research councils and a range of partners across research and industry.

Innovate UK's Knowledge Transfer Partnerships programme, jointly funded with the research councils, links businesses with universities and research organisations and recent graduates. It enables a business to bring in new skills and the latest academic thinking to deliver a specific, strategic innovation project through a knowledge-based partnership.

Innovate UK also provides a support programme for teams of academic researchers wishing to explore the commercial potential of their research. For 2018 the ICUR programme has been expanded to 3 providers: SETSquared Partnership, Queen's University Belfast and the University of Warwick.

Connecting within the UK

The Innovate UK Knowledge Transfer Network connects companies and innovators to drive innovation through collaboration. It works within and across industries and sectors, helping businesses to find partners, collaborators, funders, market insight and solutions by creating connections, organising events and delivering business engagement.

Innovate UK also has a team of regional and devolved nation managers across the UK, who work with Local Enterprise Partnerships, enterprise agencies, and with wider regional partners such as the Northern Powerhouse and Midlands Engine. This engagement ensures a coherent approach to innovation strategy and investment across the UK.

Ella's Kitchen – transforming the baby food market

When Paul Lindley couldn't find the food he wanted for his young family, he created it himself. Paul founded Ella's Kitchen, a 100% organic baby and toddler food company in 2006 and it is now the number one baby food brand in the UK.

The company's success has been in part due to 3 Knowledge Transfer Partnerships (KTP) with the University of Reading. Through the partnerships, the company was able to:

- develop a multi-sensory marketing approach and improve children's enjoyment of healthy food
- transform its approach to sourcing raw materials, helping maintain high-quality products and reduce costs
- improve food packaging to gain competitive advantage





Autifony – switch leads to major pay-off

Autifony's initial work revolved around malfunctions in proteins and impacts on hearing loss and tinnitus. However, co-founders Charles Large and Guiseppe Alvaro were convinced these malfunctions might also be responsible for other disorders and began to explore a new treatment for schizophrenia.

Pursuing this new avenue was de-risked through Innovate UK and Biomedical Catalyst funding, enabling Autofony to work with numerous academic institutions to begin clinical trials of its drug AUT00206. The drug is targeting schizophrenia, but with fewer side effects than current medicine.

Autifony has signed an agreement with German pharmaceutical company Boehringer Ingelheim for an exclusive option to purchase its modular platform, which includes AUT00206. The deal could be worth up to €627.5 million.

The Biomedical Catalyst is a partnership between Innovate UK and the Medical Research Council to fund academic/business collaborative projects worth £100 million over 4 years.

Collaborating globally

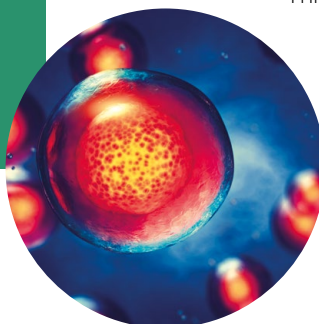
Innovate UK works internationally to enable UK researchers and innovators to collaborate. One specific focus is the Eurostars programme which offers SMEs access to cross border collaboration.

We promote and support global opportunities for UK businesses through bilateral innovation programmes and entrepreneur missions. Our leadership of the Enterprise Europe Network (EEN) enables SMEs that we fund to access a UK wide network of business growth advisors. This helps to turn their innovative ideas into growing global businesses. Since 2015, EEN has facilitated more than 1,600 international collaborations for innovative UK companies.

Early warning on transplant disease

A Eurostars collaboration between Belgian firm Voliton and UK drug-testing specialist Alcyomics has come up with a blood test that can predict graft-versus-host disease (GvHD).

This disease is common in patients who have bone marrow or stem cell transplants. The test measures and analyses fragments of cell chromosomes that appear during transplant rejection and disease. It could allow doctors to diagnose and monitor disease more accurately. Simple, effective and low cost, it can also help improve outcomes from transplants of solid organs.



Great ideas from the unusual suspects

Diversity within businesses is shown to contribute to enhanced performance and commercial success, so Innovate UK is committed to supporting and encouraging diversity and inclusion in all it does as an investor, partner and employer.

The **Women in Innovation** campaign is aimed at increasing the number of women entrepreneurs applying for funding. Evaluation shows it has been successful. One year after introducing this programme the percentage of female applicants for Innovate UK funding rose from 14% to 24%.

The **Ideas Mean Business** campaign is a partnership with the Prince's Trust to unlock the innovations and entrepreneurial potential of young people with great ideas from disadvantaged backgrounds. It aims to ensure that a diverse set of innovative businesses are founded by leaders who can be role models who inspire more young people to innovate.



GetTriK – Drone firm enjoys a year of success

28-year-old Pae Natwilai, founder of GetTriK and winner of Innovate UK's Women in Innovation award, was named on Forbes' Europe Industry List this year. The list recognises the most innovative products, methods and materials.

Natwilai describes her company GetTriK as 'Google Maps for large structure inspection'. After beginning her career in the oil and gas industry, Pae founded GetTriK, which uses drones to create 3D models of structures, saving time and money.

Since receiving the Innovate UK award, GetTriK has hired 3 staff and secured a further £300,000 of Innovate UK funding. The firm also won the Innovation in Design award at Innovate 2017.

Inheriting Earth – tackling ocean plastic

27-year-old Adam Root was inspired to take action against ocean plastic pollution 5 years ago. Driven both by his passion for the ocean and product design experience, he decided to create a solution for one particular problem: microfibres – tiny pieces of plastic that enter the water system, and the food chain, when we wash our clothes.

Adam has designed a filter system to remove the fibres during the wash cycle and stop them being drained away. "It's something that's really grass-roots," says Adam. "So many people think the problem is too big – I want to help people feel like they can do something."

Adam's company, Inheriting Earth, was awarded support through the Young Innovators' programme.



For all funding opportunities search:
innovateuk.ukri.org

Knowledge Transfer Network
ktn-uk.co.uk

Enterprise Europe Network
enterprise-europe.co.uk

Find out about our work and innovation stories...



Innovate UK

Innovate UK drives productivity and economic growth by supporting businesses to develop and realise the potential of new ideas.

We connect businesses to the partners, customers and investors that can help them turn ideas into commercially successful products and services and business growth.

We fund business and research collaborations to accelerate innovation and drive business investment into R&D. Our support is available to businesses across all economic sectors, value chains and UK regions.

Innovate UK is part of UK Research and Innovation.
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