INVEST
LIVERPOOL
ADVANCING THE CITY REGION

THE HOME OF **APPLIED INNOVATION**

WELCOME TO A PLACE THAT **DELIVERS.**

Why Liverpool for Innovation?

- Liverpool City Region has a global profile, unique heritage and capacity for innovation
- LCR has distinctive world class 'smart specialisation' assets and a strong innovation ecosystem
- We have the scale and critical mass to apply innovative ideas in diverse sectors
- Innovation is the common theme that brings together public, private and academic partners
- A focus on commercialisation, with industrial partnerships at the heart of all we do

WHERE **INNOVATION LIVES**

With our iconic waterfront, stunning architecture, glorious beaches and world-famous cultural and sporting attractions, Liverpool City Region is a very special place. The creative sparks that challenge convention are the foundations of our innovation ecosystem that permeates every walk of life and every sector and industry.

Our people are amazingly inventive and determined.

Our universities, colleges and schools produce a world-class talent pool.

Our businesses play a leading role in redefining their sectors.

And our government agencies have a commitment to fostering and facilitating applied innovation.

Taking ideas from laboratory to factory, from whiteboard to boardroom, from innovation to invoice.

The application of innovative ideas is the bedrock upon which the future of Liverpool City Region is being imagined and delivered.

This is a place where innovation comes alive.

KEY:

1. Accelerator and Centre of Excellence in Infectious Diseases Research (CEIDR)
2. Atlantic Container Line UK
3. Atos Healthcare
4. Baltic Creative
5. Elevator Studios
6. Knowledge Quarter Liverpool
7. Launch 22
8. Liverpool Clinical Laboratories
9. Liverpool Hope University, City Centre Campus
10. Liverpool John Moores University
11. Liverpool Life Sciences University Technical College
12. Liverpool School of Tropical Medicine
13. Liverpool Science Park
14. Materials Innovation Factory (MIF)
15. Microbio Refinery (UoL)
16. National Oceanography Centre
17. North West Cancer Research
18. Royal Liverpool & Broadgreen Hospitals Trust
19. Sensor City
20. The Studio School
21. UK Microsoft Associate College (City of Liverpool College)
22. University of Liverpool
23. University of Liverpool Department of Computer Sciences
24. University of Liverpool Medical Research Council Centre for Drug Safety
25. IBM Research, Daresbury
26. Innovation Agency, Daresbury
27. Sci-Tech Daresbury Campus,
28. The Hartree Centre, Daresbury
29. Virtual Engineering Centre, Daresbury
30. Alexandra Business Park, St Helens
31. Estuary Commerce Park
32. Hibernia Transatlantic Cable/Fibre Optics, Southport
33. Institute of Veterinary Science, Leahurst Campus, Neston
34. Knowsley Business Park
35. Liverpool Hope University, Childwall Campus
36. Liverpool Innovation Park, Edge Lane
37. Marine, Energy & Automotive Park, Wirral
38. Medicines for Children Research Centre, Alder Hey
39. Southport Business Park
40. The Heath Business & Technical Park, Runcorn

In 2017, a major audit sponsored by the UK government revealed the true scale and quality of science and innovation assets and activities in Liverpool City Region. The Science and Innovation Audit focused on three key areas where Liverpool has clear global strengths:

- Materials Chemistry

- Infectious Diseases

- High Performance and Cognitive Computing

The interplay between these specialisations and the applied innovation ecosystem that leverages them, is creating significant advantages for companies across many converging sectors and industries.

Innovation excellence is a major goal of partners across Liverpool City Region, with the stated objective of being a national exemplar of place-based and innovation-driven economic growth that supports the UK's Industrial Strategy.

The strategic development and delivery of the innovation agenda here is championed by a dedicated, high level cross-sector Liverpool City Region Innovation Board established in 2013, whose purpose is to drive the commercialisation of knowledge and ideas, increase productivity, maximise investment, enhance skills, attract talent, and accelerate growth across all sectors of the economy.

INNOVATION **ASSETS.**

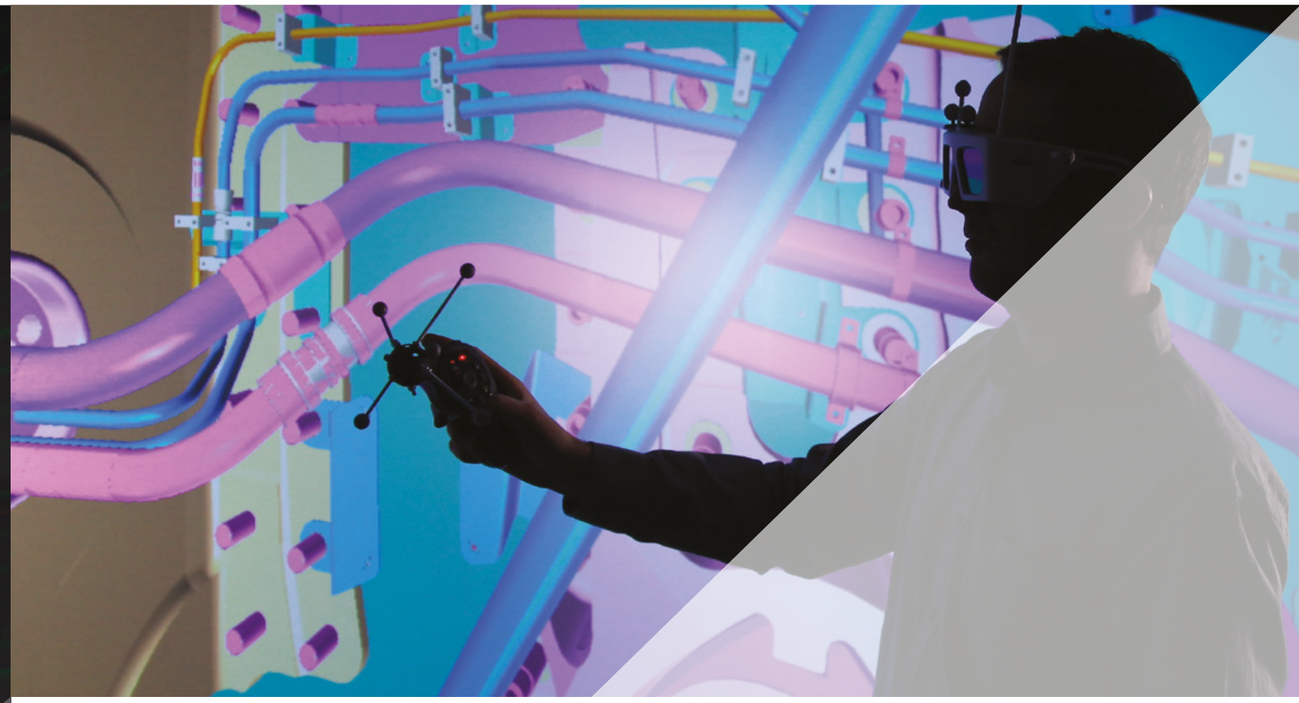
You can find innovation in action across our diverse and exciting city region. Two internationally significant concentrations of research and innovation assets can be seen at the Knowledge Quarter in Liverpool City Centre and at Sci-Tech Daresbury, the science and innovation campus.

KQ Liverpool - Knowledge Quarter Liverpool (KQ Liverpool) brings together the city region's key partners to collaborate in a creative environment and close the economic gap with London and the South East. KQ Liverpool sets out to create and promote the dynamic and innovative industries operating within the Knowledge Quarter. The recent Science and Innovation Audit (SIA) highlighted Liverpool City Region's three world-class strengths; infection, materials chemistry and high performance & cognitive computing. KQ Liverpool is home to some of the world's most influential players in science, health, technology, culture and education, with over £1bn of new developments already underway.

Sensor City - Located at the gateway to KQ Liverpool, Sensor City is the focal point for sensor technology innovation and IoT development in the UK. A University Enterprise Zone, it is pushing the boundaries of innovation, fast-track business growth and create new jobs. Sensor City is creating a dynamic and supportive community, providing entrepreneurs, SMEs and existing organisations with the facilities, business support and hands-on technical expertise they need to turn their innovations into commercially viable solutions.

Materials Innovation Factory - The £68m Materials Innovation Factory is a partnership between Unilever and the University of Liverpool. By combining one of the largest research-active companies with the strongest chemistry department in the UK, it is one of the most exciting developments of its kind in recent years. The Materials Innovation Factory is a unique and flexible space. Long-term Research Hotel residencies are available, offering the ability to co-locate your research teams on site with specialists.

Liverpool Bio Innovation Hub - The Liverpool Bio Innovation Hub Project was created to meet the demands of growing biomedical and biotechnical companies. The Hub is a centre for biomedical and biotechnical research, and personalised medicine, housed in a state-of-the-art building alongside space for growing businesses, training labs, a community unit and a purpose-built biobank.



Digital Innovation Factory - Scheduled to open in 2020, the Digital Innovation Factory within the University of Liverpool will be a Centre of Excellence in simulation and virtual reality, bringing together complementary areas of research of computer science, robotics, and engineering in which the University has world-class capabilities and enabling engagement with businesses to promote innovation.

Sci-Tech Daresbury - A dynamic campus supporting high-tech companies to accelerate the growth of their business through innovation, collaboration and access to world-class technology facilities and business support.

The Hartree Centre - Backed by over £170 million of government funding and significant strategic partnerships with organisations such as IBM and Atos, the Hartree Centre is home to some of the most technically advanced high-performance computing, data analytics, machine learning technologies and experts in the UK. The centre is on the frontline maintaining the UK's position at the vanguard of industrial innovation through a range of computational services and collaborative partnerships.

Virtual Engineering Centre (VEC) - The VEC is a University of Liverpool initiative based at Sci-Tech Daresbury and is the UK's leading centre of Virtual Engineering technology integration for industrial and commercial applications. VEC's virtual design and manufacture capabilities use the latest specialist 3D visualisation and physics-based simulation allowing organisations to explore their designs and optimise manufacturing processes. The VEC has worked with OEMs like Bentley Motors, BAE Systems and National Nuclear Laboratory to small technology providers, many of whom have located to Sci-Tech Daresbury to gain access to VEC and Hartree expertise.

Innovations Technology Access Centre (I-TAC) - Is a unique, fully equipped space for innovation, research and development. Providing flexible access to laboratory space, "hot-labs" and scientific equipment, I-TAC is ideally suited to start-up companies, small and medium enterprises and R&D teams from established companies. Companies using I-TAC are working in diverse sectors from medical biosciences and energy and the environment, to down-stream space technologies and advanced materials and the chemical sector.

CROSS-CUTTING **INNOVATION.**

The increasing convergence across industrial sectors plays to Liverpool's core strengths and places the city region at the forefront of some of the most exciting and transformative developments of applied research and innovation.

Advanced Engineering – Liverpool City region is leading the way on Industry 4.0, with the ambition, the talent and the tools to lead the fourth industrial revolution and in November 2018 was the chosen launch location for the Government's 'Made Smarter' programme. We've got the largest supercomputing facility for industrial applications in the UK and the highest concentration of robotics for materials science in the world. Under the leadership of Professor Frank Wolter at University of Liverpool, renowned Artificial Intelligence expert, a wide range of industry-driven research projects are funded by national and European bodies. The university is involved in a state-of-the-art robotics laboratory named smARTLab (swarms, multi-agent and robot technologies, and learning Lab), which has two large experimentation facilities for research and development of ground robots and unmanned aerial vehicles. Government's Made Smarter programme chose Liverpool for its launch in November 2018.

Creative and Digital – Cutting-edge solutions in Virtual and Augmented Reality are central to Liverpool's CreateTech credentials. Great examples of innovative homegrown talent being harnessed to support the wider community can be seen at Liverpool Science Park where PhD students have setup Real Space, a venture to support entrepreneurs, startups, small and medium enterprises and creative freelancers. The hub features dedicated 'Reality Pods' equipped with HTC Vive headsets for people to experience professional, room-scale virtual reality.

Health and Life Sciences – Liverpool's global leadership in health and life sciences is driving innovation in specialist areas such as: Infection; Precision Medicine; Children's Health; Veterinary Science; Independent Living; Big Data, Sensors and Internet of Things. With hundreds of medical companies based here, we are part of the Liverpool - Manchester life sciences corridor, which is one of the UK's top three clusters of biomedical activity. The City Region has the largest cluster of Global Digital Exemplars in the UK, leading the way for the future of the NHS and digital healthcare.

Financial & Business Services – For businesses looking to solve complex data challenges or redefine customer relationship and business development processes, Liverpool City Region is leveraging a unique set of nationally-significant science assets to become a leader in exploring the possibilities of knowledge process outsourcing. From Robotic Process Automation software pioneers Blue Prism, to high performance computing, data analytics and cognitive technologies at Sci-Tech Daresbury, this is a place where scientists, engineers and mathematicians are driving innovative solutions for the financial and business services sector.

Retail and Ecommerce – Our retailers have always led the way applying the latest innovations to drive new business – we were the home of the UK's first mail-order business (Littlewoods); the first television retailer (QVC) and the country's second largest online retailer (Shop Direct) which has picked up dozens of awards for its innovative ecommerce activities.

Low Carbon Energy – Liverpool City region is leading the way in developing new energy technologies, and significant advances in environmental research that puts us at the heart of the fight to combat climate change. Liverpool Bay is the cradle of the emerging European offshore wind industry. It's the location of the UK's first commercial offshore windfarm, built in 2007, with the first commercial deployment of the Siemens 3.6 MW turbines. We now house the first deployment of the Mitsubishi Vestas 8MW turbines.

THE **'LIVERPOOL MODEL'**

A key ingredient of our innovation ecosystem is the collaborative and open way that research is carried out here. A great example of this is what is known as the 'Liverpool Model'.

Developed through the University of Liverpool but now being applied across the city region, the Liverpool Model is an approach to academic-industry collaboration that places great emphasis on specialised space, shared capability and open-access. The distinctive Liverpool Model centres on open access innovation facilities and has the following important characteristics:

- Specialised space, differentiated equipment and software platforms
- Skilled technical support staff for flexible deployment
- Focal point for an extended network of hi-tech equipment/service providers
- Academic thought leadership with professional management and business engagement

These types of open access facilities need to include private spaces for commercial partners and for academic work.

Funding usually comes from three sources: a major anchor tenant or partner which locates a science and innovation team; university investment in expectation of being able to generate future research grant income; and government funding to help create high-value jobs and increase economic growth.

Typically, all partners keep their own arising Intellectual Property and share in common platform improvements. This type of facility is open to any third-party, be they a small business or academic, under Fair, Reasonable and Non-Discriminatory commercial terms (FRAND).

Great examples deploying the Liverpool Model of open access collaboration can be seen across the city region such as the Materials Innovation Factory and Sensor City.

INNOVATION CASE STUDY: **UNILEVER**

Global blue-chip Unilever has had a major research and development presence at Port Sunlight, Wirral for more than a hundred years. It is the centre for Unilever's Home Care and Beauty & Personal Care R&D, with major programmes for Hair, Laundry, Deodorants and Household Care being run from the site.

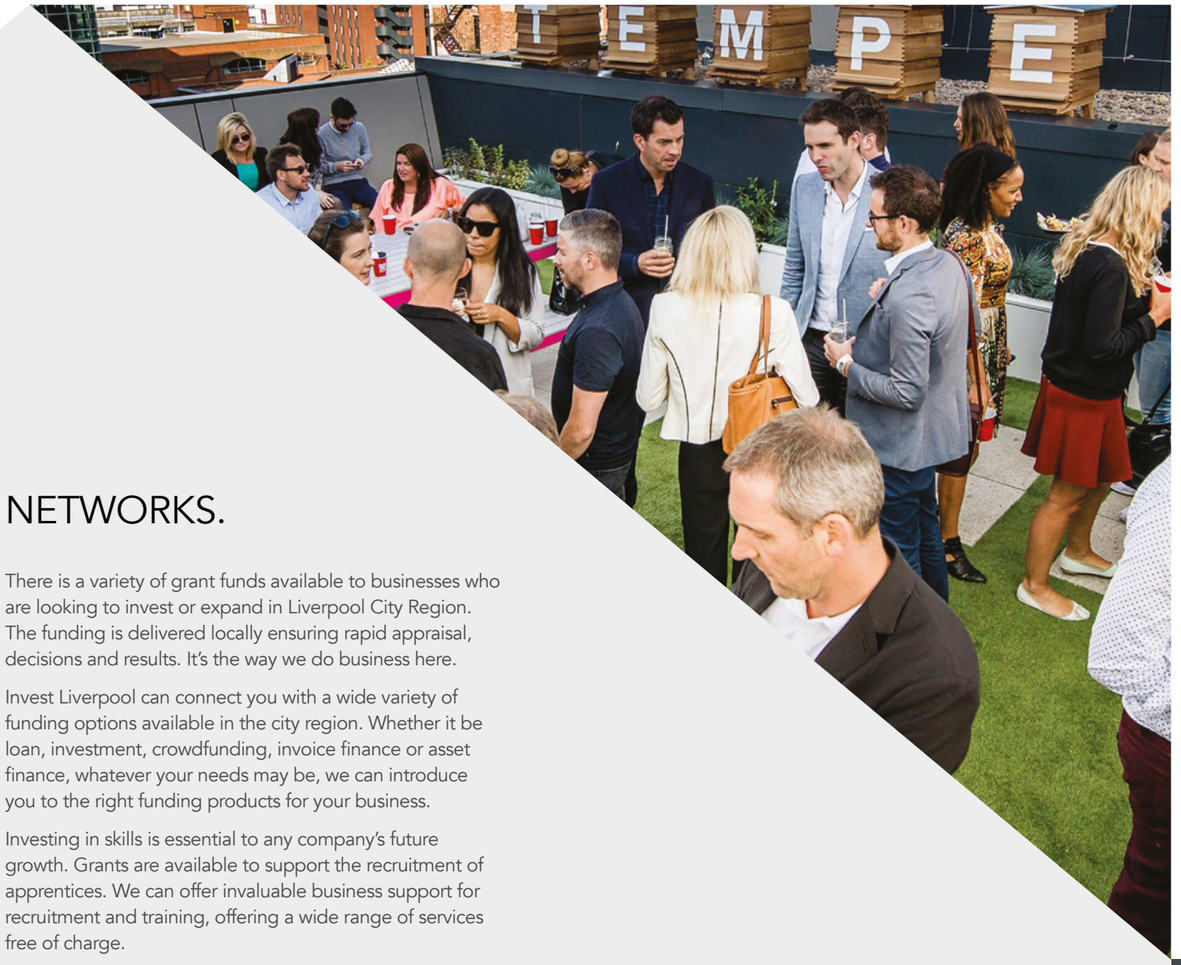
Port Sunlight is a multi-national community of over 750 scientists who have 200 PhDs between them – more than most leading UK universities. The local workforce is joined by colleagues from the US, Latin America, Europe, the Indian sub-continent and China. Expertise ranges from biologists, physical chemists and chemical engineers, to psychologists, sociologists and neuroscientists.

Unilever is a key partner in the city region's innovation ecosystem and their work with the Hartree Centre at Sci-Tech Daresbury is part of the company's 'Science Grid' of academic partners who are world-leading in science and complementary to Unilever's own science and technology skills.

This long-term partnership has included projects including:

- The Virtual Pouring Project: using Hartree's expertise to simulate liquid pouring, as part of bottle design for new products.
- Manufacturing Production Optimisation Project: using Hartree's expertise to identify bottlenecks in one factory's filling line, with the goal of reducing unwanted down-time and increase productivity
- Computer Aided Formulation Project: a collaboration developing computer simulations tools to predict how ingredients come together to form the liquid structures underpinning many of Unilever's typical products.

This diverse group of scientists works with colleagues from our other global R&D centres on a daily basis and with many external partners through our open innovation programme. Unilever's three local strategic partners – The University of Liverpool, Manchester University and Sci-Tech Daresbury – are helping to build a powerful innovation ecosystem in the region.



NETWORKS.

There is a variety of grant funds available to businesses who are looking to invest or expand in Liverpool City Region. The funding is delivered locally ensuring rapid appraisal, decisions and results. It's the way we do business here.

Invest Liverpool can connect you with a wide variety of funding options available in the city region. Whether it be loan, investment, crowdfunding, invoice finance or asset finance, whatever your needs may be, we can introduce you to the right funding products for your business.

Investing in skills is essential to any company's future growth. Grants are available to support the recruitment of apprentices. We can offer invaluable business support for recruitment and training, offering a wide range of services free of charge.

We collaborate with many partner organisations, all around the world:

Local Growth Hub - led by the Liverpool City Region Local Enterprise Partnership (LEP) in conjunction with local public and private sector partners, the Local Growth Hub has been developed to create a single access point for businesses to discover the advice and support they need to flourish.

Liverpool in China - Liverpool has enjoyed a long and prosperous relationship with China, and Shanghai in particular, over hundreds of years. The relationship is now stronger than ever and has the potential to grow even further as partners create and capitalise on new opportunities.

Department for International Trade – we work closely with the UK's trade and investment officials, locally, regionally and nationally; as well as leveraging the government's overseas embassy and consulate network to help our client businesses increase economic growth.

Typically, all partners keep their own arising Intellectual Property and share in common platform improvements. This type of facility is open to any third-party, be they a small business or academic, under Fair, Reasonable and Non-Discriminatory commercial terms (FRAND).

INNOVATION CASE STUDY:
HEALTH INNOVATION EXCHANGE

The Health Innovation Exchange (HIE) is a collaborative programme designed to connect Liverpool City Region businesses with world-class health, care, technology and commercial resources. The project unites regional expertise to accelerate innovation and growth by supporting ambitious businesses to develop and market innovative products and services, nationally and globally.

Focussing on accelerating innovation in health and care, the HIE helps businesses to take advantage of opportunities in health and care, encouraging the creation of new products and services, bringing smart products to the market and repurposing existing products for the sector.

The key aim of the HIE is to support SME and sector growth by breaking down boundaries and opening both minds and markets. By providing businesses with tailored resources for invention, co-creation and real-world testing HIE can connect businesses to world-class thinking and facilities.

Healthcare organisations can test innovative products and services, giving business insights from some of the most skilled people in the region. HIE provides the kind of specialised business support necessary to ensure commercial success. Support will range typically from delivering highly focused health and care expertise for introducing new products to market, to broader managerial support to guide growth and more complex challenges.

By working with some of the best minds in health, care and business HIE is able to concentrate expertise and resources in support, helping to take concepts from ideas to invoice, whilst ensuring industry relevance and excellence, as well as the rigour needed for long-term growth.

YOUR BESPOKE **CONCIERGE SERVICE.**

Invest Liverpool has a team of business location experts from across Liverpool City Region that can assist you with your next project.

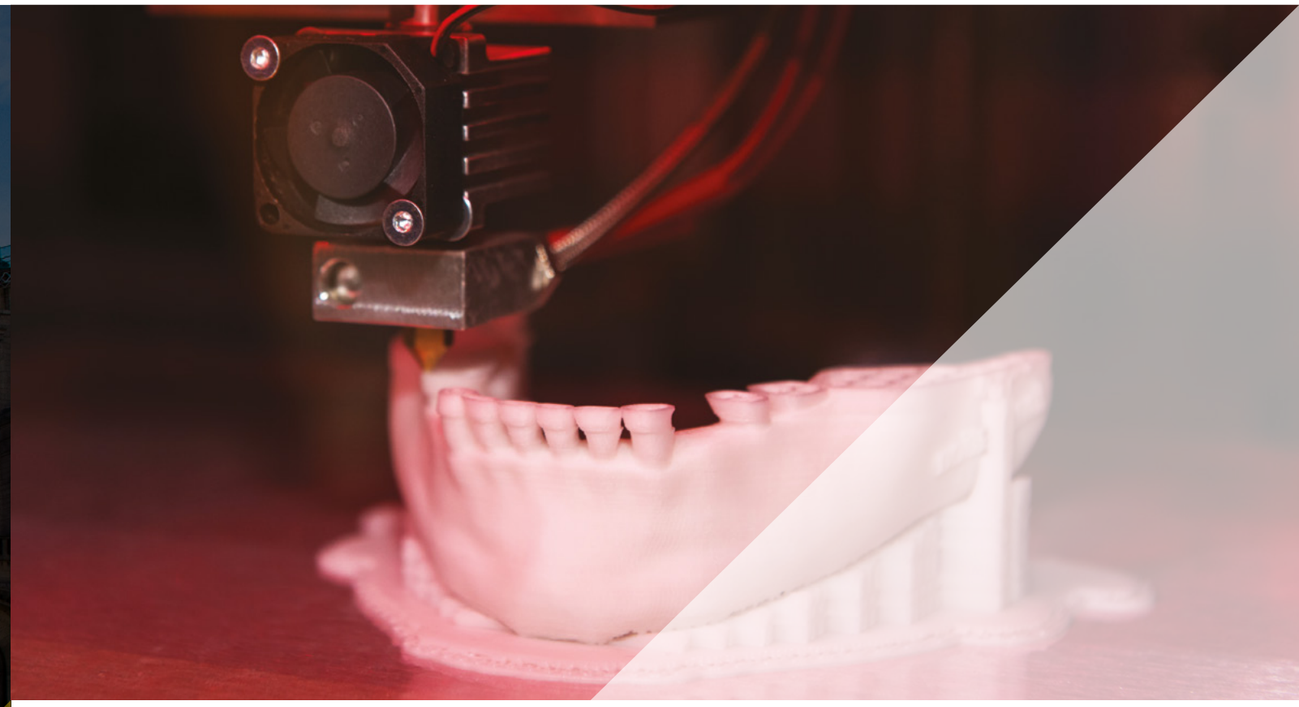
We can provide detailed research on markets, sectors and workforce demographics. We can put you in touch with the right contacts at industry networks and partner organisations.

We're happy to introduce you to potential partners at our world-class universities and our existing businesses. We can help you to identify all the available support to help your expansion and show you a wider range of sites, premises and development opportunities.

Our services include:

- Dedicated account manager to support you and your project
- Bespoke research intelligence-gathering on demographics, sectors and opportunities
- Advice on availability and costs of commercial property and soft landing schemes
- Guidance on financial incentives and business support organisations
- Introductions to business networks and other business professionals
- Connections to research and technology expertise
- Assistance on staff recruitment and training
- Organising and hosting briefing visits for key staff
- Maximising PR associated with your investment
- A dedicated aftercare account manager to support your business once established in Liverpool, linking you with public sector support services, assistance with raising finance and providing bespoke business development services.

Email: Alice Lamb, Head of Investment Services, Growth Platform Alice.lamb@growthplatform.org or telephone +44(0)151 237 3919 for help and we look forward to working on your plans with you.



INNOVATION CASE STUDY: **3D LIFEPRINTS**

3D LifePrints provides medical 3D printing products and services for NHS hospitals and academic institutions. It partners with clinicians, healthcare providers and academics to identify new applications for 3D technologies and uses innovative products to reduce operational costs and enhance patient care.

Founded in 2013 to supply low or zero cost limb prosthetics in East Africa, the company has a 3D printing and manufacturing facility based at the Innovation Hub at Liverpool's Alder Hey hospital, with additional sites in London and Kenya. Since launching, it has won the Merseyside Innovation Healthcare Award and the Innovation Agency's Stand out Contribution of a Business Partner to the NHS award.

3D LifePrints was one of the first companies to work with the Health Innovation Exchange (HIE) through its work providing 3D printing medical services at Alder Hey. The HIE provided a variety of support for 3D LifePrints, including introductions to clinicians who could provide information, guidance and medical advice, assisting it to find premises and facilities and helping to promote the advantages of using its technology.

As a result of its work with the HIE, 3D LifePrints was able to increase its visibility in the market and build its reputation, helping it to win more grants and generate more revenue. It was also able to expand into more hospitals, both within Liverpool City Region and nationally.

We have a team of business location experts from across Liverpool City Region that can assist you with your next project.

We can provide detailed research on markets, sectors and workforce demographics. We can put you in touch with the right contacts at industry networks and partner organisations. We're happy to introduce you to potential partners at our world-class universities and our existing businesses. We can help you to identify all the available support to help your expansion and show you a wider range of sites, premises and development opportunities.

For further information and support email: investliverpool@liverpool.gov.uk.

We look forward to working on your plans with you.

investliverpool.com

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ADVANCING THE CITY REGION

HALTON BOROUGH COUNCIL
Knowsley Council
Liverpool City Council
Sefton Council
St.Helens Council
WIRRAL

LIVERPOOL CITY REGION COMBINED AUTHORITY
METRO MAYOR LIVERPOOL CITY REGION
growth platform
Liverpool City Region Growth Company
European Union
European Regional Development Fund