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INNOVATION HOT SPOTS

Insider drills down into the world-class facilities across the region

Despite having a large and productive manufacturing sector, a rich industrial history and strong growth in digital technologies, the North West is suffering from a productivity problem.

A recent report published by The Productivity Institute and its North West Regional Productivity Forum has highlighted productivity gaps in the region and the lack of growth in productivity rate. The North West has seen a 0.3 per cent decrease in productivity between 2008 and 2019, while the national average has risen by more than 4 per cent.

In order to boost productivity and drive growth, the report suggests the North West will have to build on its strengths in manufacturing and digitisation and encourage collaboration across the region. There are a range of innovation hotspots across the North West offering facilities to businesses to drive their growth, streamline processes and develop new ideas. These innovation

centres can contribute to closing the productivity gap and help industry across the North West to thrive.

GLASS FUTURES CENTRE OF EXCELLENCE

St Helens, Liverpool City Region

In 2023, a global centre of excellence for sustainable glass manufacturing is coming to St Helens. Glass Futures, in collaboration with the glass industry, is delivering the world's first openly accessible, commercially available, multi-disciplinary glass research and development (R&D) facility.

The £54m pioneering facility is set to be a collaborative space for innovative R&D trials around decarbonisation in the glass industry that will increase investment in the region. Up to 30 tonnes of glass will be produced at the centre each day, in order to bridge the gap between academic

research on decarbonisation in the industry and commercial implementation. Organisations in the glass industry that want to accelerate their low-carbon transition will be able to take part in the R&D trials.

Glass Futures' chief executive Richard Katz says: "As a not-for-profit membership organisation, we believe that working together with the glass industry, academia and our members to deliver R&D and innovation can ensure glass making's future is built on high-value and fully sustainable zero-carbon products."

MORSON MAKER SPACE

University of Salford

The Morson Maker Space is a digital fabrication hub within the University of Salford, which provides students and local businesses with industry-standard machinery and technology solutions.



Maker Space, Salford

Dr Maria Stukoff, director of the Maker Space, describes it as a “unique STEM-focused facility, providing hands-on training for students to gain the experience and knowledge that employers need now and in the future”. The facilities at the Maker Space are supported by a team of technicians and digital specialists, who lead students in learning about innovating, prototyping and testing.



Alderley Park, Cheshire

The technical expertise available at the space “helps innovate traditional processes using new technologies”, according to Stukoff. “As a result,” she continues, “we connect students, faculty and industry within a collaborative environment for co-production and research.”

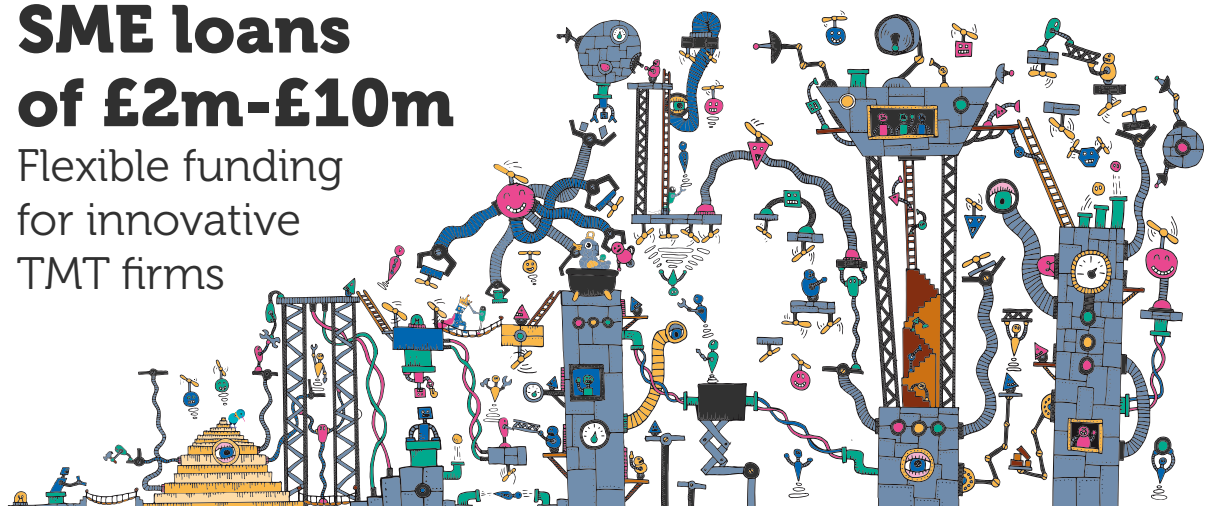
The Maker Space is a testbed for innovation and optimisation, with access to high-specification digital fabrication

machines, additive manufacturing tools and inspection equipment. The facility is home to various 3D-printing technologies, laser and waterjet cutters with an electronics development area and dedicated CAD (computer aided design) suite. All the machines at the Maker Space are available to industry partners, allowing businesses to explore solutions to manufacturing or design challenges.

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Digital Innovation Factory, University of Liverpool

ALDERLEY PARK

Cheshire

A Bruntwood Sci-Tech development, Alderley Park is a world-leading science and technology campus and part of the Cheshire Science Corridor. The life science campus offers bioscience facilities for companies focused on research and development.

There are over 250 companies at Alderley Park, spanning areas such as drug discovery, diagnostics, digital health, medical communications and artificial intelligence (AI). These companies range from startups to global corporations such as Sai Life Sciences and Evotec. There is also more than 1 million sq ft of high-specification lab and office space.

The site is currently undergoing a £247m investment, including a £20m investment into biology and chemistry labs, which were launched earlier this year.

MATERIALS INNOVATION FACTORY (MIF) AND DIGITAL INNOVATION FACTORY (DIF)

University of Liverpool

The MIF and DIF are part of the Institute for Digital Engineering and Autonomous Systems (IDEAS) at the University of Liverpool,



Credit: Martin Birchall Photography

Materials Innovation Factory

bringing together world-class academic research and industry in robotics, data analytics and AI. Stephen Leece, operations and innovation partnerships director at the University of Liverpool, says: "IDEAS links these areas of research together with expertise in supporting the adoption of new technologies alongside our partners and external commercial businesses."

The DIF is a £12.7m investment co-funded by the Liverpool City Region Combined Authority's Local Growth Fund. It is a new facility in Liverpool's Knowledge Quarter providing fresh opportunities to assist industry partners in developing research partnerships.

BUSINESSES THAT WISH TO COLLABORATE WITH THE UNIVERSITY'S RESEARCH TEAMS CAN MAKE USE OF THE DIF'S EQUIPMENT IN AREAS SUCH AS DATA ANALYTICS, VISUALISATION, AI, SIMULATION AND MODELLING

Businesses that wish to collaborate with the university's research teams can make use of the DIF's equipment in areas such as data analytics, visualisation, artificial intelligence, simulation and modelling. The facility also features specialist labs: a mixed reality lab, with virtual reality technology; an extreme environment lab,

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which simulates hazardous conditions for testing robotics; and an immersive lab, which develops sensory technologies in areas of smell and touch for future "tactile internet" applications.

Another key area of focus for the MIF and DIF is decarbonisation. Leece says: "The ongoing net zero programme was recognised recently by UKRI [UK Research and Innovation] with a grant to help reduce its carbon footprint. This project will reduce CO2 equivalent emissions from electrical energy use by a minimum of 25 per cent over two years, and a further 20 per cent by year four."

There are also renovation plans in place for 2022 at the MIF, including upgrading to smarter technologies to reduce energy consumption as well as adapting the roof space to fit solar panels to generate green power.

AMRC NORTH WEST

Lancashire

Part of the University of Sheffield's Advanced Manufacturing Research Centre, the AMRC North West opened its doors in March 2022. The new centre, which is located in Samlesbury, is designed to fuel innovation and bring world-class facilities to the region.

The AMRC helps businesses to adopt new technologies and improve their processes. Melissa Conlon, commercial director at AMRC North West, explains: "It's often quite hard for companies, particularly SMEs to dip their toes into the water with new technology so our aim at the AMRC is to de-risk that technology adoption for companies." These technologies include additive manufacturing, asset tracking, 5G technologies and robotics.

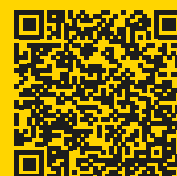
The new building, according to Conlon, is leading for the AMRC on additive manufacturing, or 3D-printing. In particular, the AMRC North West leads on metallics. Conlon explains: "We work with companies to do prototyping using our additive manufacturing to see if a particular part can be printed." In terms of the facilities available, she says: "We have four or five different types of additive metallic systems and we can print aero-structures of up to two metres by two metres."

Another area of interest for the AMRC is visual recognition and data capture.

INNOVATION MEETS BUSINESS

EVENT

From its globally renowned universities to pioneering companies operating in a diverse array of sectors, the North West has world-leading innovation capabilities. We want to tell the exciting stories emanating from the sector. At the beginning of September, *Insider* launched a new fortnightly newsletter, SPARK, which celebrates North West innovation. *Insider* will also be hosting a series of events under the SPARK banner, the first of which will take place on 13 October and showcase media, communications, new channels and content producers. This event will be hosted at MediaCity, home to BBC North, one of Europe's biggest TV facilities for the past ten years.



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Conlon says: "We're looking at the way machines perform as well, so we've [added sensors to them] to see how we can get a machine worth £200,000 to perform like a £500,000 one, which is a real game-changer for SMEs."

The AMRC's Radar programme, aimed at manufacturing SMEs, is running until March 2023, and is open to businesses from the local area. Conlon explains how the AMRC can help companies through this programme: "We have a grant to work with SMEs, so our engineers will go to the SMEs and do a line walk and suggest to the company projects we can work with them on that will improve things."

She adds: "We want to take SMEs on a journey. They can implement something that will lead to a return on investment, which they can then use to do the next thing and so on, to improve their productivity and make them more competitive." ■