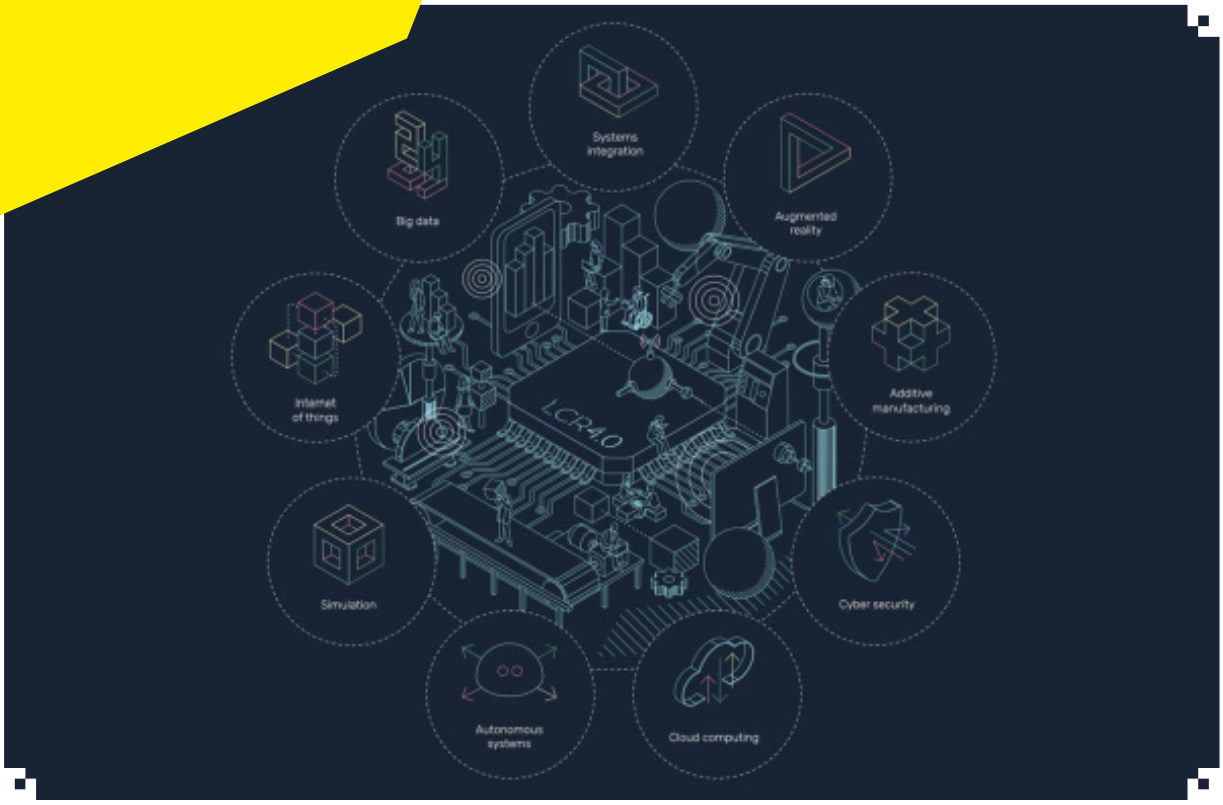
VEC VIRTUAL ENGINEERING CENTRE

European Union
European Regional Development Fund

NORTHERN POWERHOUSE HM Government



LCR4.0 generates over £121m in GVA as it drives innovation and economic growth for SMEs in the Liverpool City Region and beyond

BACKGROUND

LCR4.0 was an ERDF-funded initiative (European Regional Development Fund), driving the growth of the manufacturing industry across the Liverpool City Region through the adoption of Industry 4.0 technologies. The initiative was a successful collaboration between businesses, academia, and local government and created an ecosystem of innovation that will enable SMEs and start-ups to embrace the digital revolution, now and into the future.

THE CHALLENGE

The LCR4.0 initiative was launched in 2016 in order support the rapidly evolving manufacturing industry, which is being transformed by Industry 4.0 technologies such as the Internet of Things, big data, and artificial intelligence. This collaborative project was led by the Virtual Engineering Centre (VEC) and the University of Liverpool, leading partners Sensor City, Liverpool John Moores University, the Science and Technology Facilities Council, and the Growth Platform for Liverpool City Region.

The original project objectives were to assist manufacturers in identifying their challenges and obstacles and addressing these with Industry 4.0 technologies, leading to innovative digital solutions to enhance productivity, efficiency, and competitiveness.

THE SOLUTION

In addition to providing tailor-made recommendations to manufacturers, the team also sought to bridge the technology skills gap by hosting local knowledge exchange workshops. They explored methods to help industry understand and adopt new technology, encouraging innovation internally and externally through industrial application and a unique paradigm shift.

Since launching, the LCR4.0 projects have supported hundreds of companies including Heap and Partners Ltd, Beverston Engineering, SamsonVT, Inovus Medical, DriverNet and many more. Collaborating with GenLabs, a manufacturer of industrial ovens, the team developed a simulation of the factory floor, which allowed for efficient testing and boosted confidence in the layout leading to a 20% increase in performance efficiency while reducing risk in the process.

Collaboratively, the LCR4.0 projects were also responsible for several large-scale events across the region including the Creative Arts Digital Sandpit. This brough together an array of creative individuals and

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groups to learn more about how Industry 4.0 technologies can be implemented for streamlining operations, generating new lines of revenue, and becoming more inclusive as a sector.

Lead partners, the (VEC) launched the UK's first Digital Heritage Symposium, bringing local museums and heritage foundations with decision-makers and technology providers to St George's Hall for collective learning of how these technologies can help in the preservation of heritage assets in addition to helping us to learn more about heritage sites and our history. The symposium was well received and with ongoing conversations and planning the VEC was recognised by the Arts and Humanities Research Council (AHRC), leading to the development of a National Centre for Digital Heritage and Research at the Sci-Tech Daresbury campus that will enable long-term support and exploration for improving this sector.

By embracing Industry 4.0 technologies, manufacturers in the region have improved their product quality, reduced costs and increased their speed to market enabling them to compete more effectively in the future in addition to helping attract new investment and talent to the area.

THE IMPACT

Building on the influence of LCR4.0 along with the introduction of the Levelling Up initiative, two additional ERDF-funded projects were launched in 2020: LCR4 START and LCR4.0 Holistic. These initiatives provided further aid to businesses seeking to create strategic business plans and enhance the local digital supply chain.

Since launching, the LCR4.0 projects have jointly supported over 650 SMEs including 139 start-ups, contributing to the economic ecosystem across the Liverpool City Region. The initiative has helped to develop 228 new products through 581 R&D collaborations, with 104 new products launched to market. As a result, these businesses are now better positioned to attract and retain customers and generate additional revenue.

The LCR4.0 initiative also supported the creation of 226 new jobs with a further 1,462 predicted in the next nine years. By 2032 it is anticipated that LCR4.0 will have generated £121.7m in GVA, demonstrating a significant economic impact on the region, its businesses, and supply chains for the future.

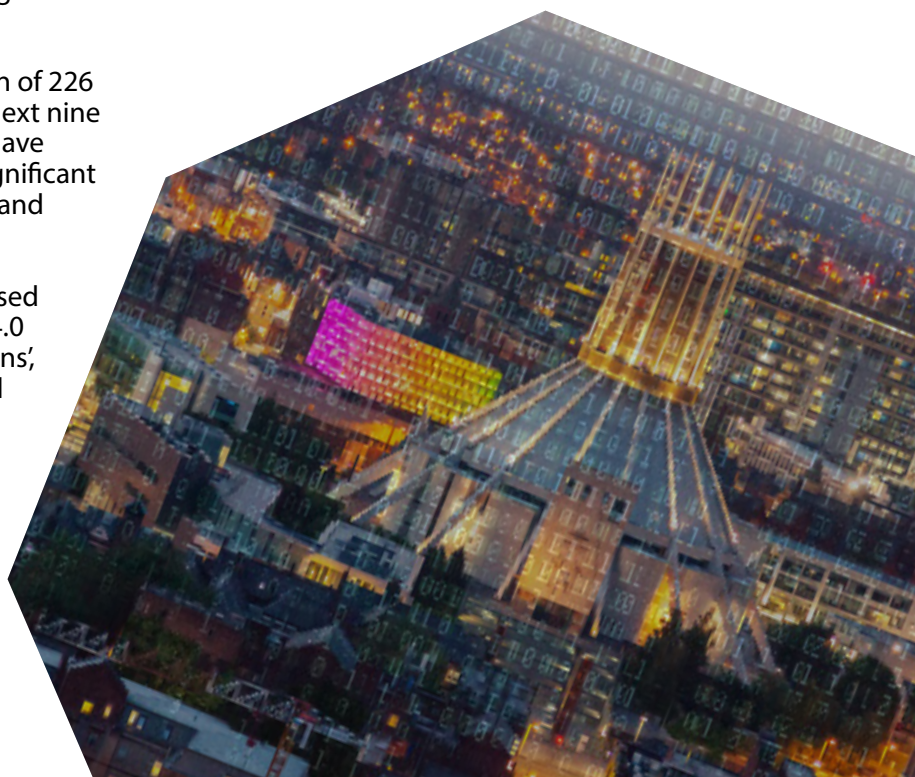
The success of the LCR4.0 initiative was recognised nationally, as The Financial Times included LCR4.0 within their 'Top 100 European Digital Champions', leading to the creation and launch of additional exemplary programmes such as Made Smarter.

LCR4.0's success has empowered delivery partners to expand their outreach into new regions, including Cheshire and Warrington. They launched CW4.0 in 2020, which supported 166 more businesses in adopting Industry 4.0 technologies. Through this initiative, SME beneficiaries were able to create 75 new jobs. By 2032, the CW4.0 project predicts the creation of 265 more new jobs and £64m in GVA, further adding to the overall impact of these projects on the region.

LCR4.0 has facilitated the building of relationships between manufacturers, technology providers, research institutions and government agencies, leading to increased innovation, competitiveness, and resilience for the region, in addition to further collaborations and new support projects being launched based on the large success of LCR4.0.

> *"The success of the LCR4.0 programmes has proven the potential for HEIs to deliver economic value and support to the local supply chain, boosting competitiveness for their local communities on a national level.*
>
> *This has enabled businesses to scale up and confidently take advantage of Industry 4.0 technologies, creating new jobs and driving innovation throughout the region, learning from the challenges of both Brexit and COVID-19 to realise new potential for our UK industry."*

- Dr Andrew Levers, Executive Director for the Institution for Digital Engineering and Autonomous Systems (IDEAS), University of Liverpool and Principal Investigator LCR4.0, LCR4 START and LCR4.0 Holistic.



LCR4.0 (2016-2019) and additional projects LCR4 START and LCR4.0 Holistic (2020 – 2023) were all ERDF-funded initiatives (European Regional Development Fund).
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