

MAKING IT



Advanced Manufacturing in the Liverpool City Region to 2020

The Liverpool City Region (LCR) has a vision to become a global manufacturing hotspot with the smartest networks, talent, technology and investment. IfM Education and Consultancy Services (IfM ECS) worked with the LCR Local Enterprise Partnership (LEP) to identify how it could best achieve both short-term 'quick wins' and long-term competitive advantage through developing its industrial strategy. The 'Making It' project brought together a wide group of stakeholders from academia, government and industry to review the opportunities, and to produce a shared vision and an agreed plan for the future of Advanced Manufacturing in the region. An early outcome came when the region was designated a UK 'Sensor City', and Connected Liverpool now has a vision for Liverpool to become a 'Smart City'.

The genesis of the Making It project was the UK National Competency Framework for High Value Manufacturing (HVM) study carried out in 2012 by IfM ECS. This mapped out the environment that will shape the UK's HVM and innovation base over the next 15-20 years, and identified a number of challenges and opportunities for UK manufacturing. It led to the identification of key 'national competencies' that were recommended for further development. IfM ECS' experience in delivering the HVM National Competency study, combined with its strong track record of providing intelligence and advice to regional as well as national authorities, led in 2013 to a request for a Liverpool regional study from the Executive Director of Key Growth Sectors at the Liverpool City Region LEP. The IfM ECS consultancy process was tailored to suit the particular challenges that were faced from rapidly changing technologies and supply chains in the greater Liverpool region, and the need to develop more service-based and environmentally sustainable business models.

IfM ECS worked with the LEP, the Department for Business, Innovation &

Skills (BIS) and the Technology Strategy Board (now Innovate UK) to undertake a detailed analysis of the assets and capabilities of the City Region, developing an understanding of the global and national landscape and the region's position within it.

Bill Colquhoun, Principal Industrial Fellow at IfM ECS, led the project, which had at its heart a simple question: "What is the future for Advanced Manufacturing in the Liverpool City Region?" A four-stage approach was taken, spread over a six month period, to ensure that stakeholders were able to attend workshops and meetings, and so that adequate reflection could happen at each stage, leading to a firm consensus on conclusions.

The IfM ECS process

IfM ECS designed a number of workshops at which invited stakeholders met to discuss their visions of what needed to be done and the scope of the project. These stakeholders included academics (Liverpool John Moores University and the University of Liverpool), industry representatives from companies of all sizes ranging from multi-nationals such as Siemens to small engineering fabricators.

Public sector representatives included local government representatives from the Liverpool region, the LEP and STFC Daresbury Laboratory.

➤ **Stage 1:** The group considered external factors, opportunities and threats, and the existing capabilities and competencies in the region. These were mapped to provide insights into specific technologies, products and services that would be critical to develop going forward. The focus on products and services enabled gaps as well as strengths to be agreed, along with identification of the 'enablers' e.g. funding that would be required for success. The outcome was a landscaped roadmap of the opportunities the group discovered, and a statement of their collective vision that would inform the rest of the project. Opportunities were developed and prioritised, with a timescale going out to 2030.

➤ **Stage 2** saw the facilitation of a workshop designed to develop the taxonomy for production of a 'heat map' on which specific identified capabilities were plotted by sector. Areas regarded as 'hot' to 'cool' were allocated and gaps identified. Effectively, the group then had a chart of the intensity of competence by

IfM ECS

IfM Education and Consultancy Services works with companies of all sizes to help create and capture value, and with national and regional governments to support and grow their industrial sectors. It does this by transferring the new ideas and approaches developed by researchers at the Institute for Manufacturing (IfM) through a programme of education and consultancy services. IfM ECS is owned by the University of Cambridge. Its profits are gifted to the University to fund future research activities. For more details on its work visit: www.ifm.eng.cam.ac.uk/services

LCP LEP

Liverpool City Region Local Enterprise Partnership was created in 2012 to bring together businesses and civic leaders to drive private-sector led growth and job creation. Its focus is on improving the economic prosperity of the City Region for those who live, work, invest and study there. As part of the UK's largest manufacturing region the City Region has a diverse mix of companies including Jaguar Land Rover, Unilever, Pilkington and Ineos, Getrag, Johnson Controls, ABB as well as innovative SMEs, engineering and fabrication companies and manufacturing start-ups. www.liverpoollep.org

References:

Making It report: http://www.ifm.eng.cam.ac.uk/uploads/Resources/Reports/MAKING_IT_2020FINAL.pdf

Working with government: http://www.ifm.eng.cam.ac.uk/uploads/Services/Images/Government_and_Agencies/Creating_the_conditions_for_growth_web.pdf

High Value Manufacturing Study: http://www.ifm.eng.cam.ac.uk/uploads/Resources/Reports/TSB_UKHighValueManufacturing.pdf

sector and application field.

► In **Stage 3**, this was further refined at a more detailed level. Priority opportunities were also identified, and more detailed 'heat maps' of specific opportunities were produced.

► **Stage 4** involved the group agreeing which were their priority programmes for further attention, as well as the identification of some 'quick wins'. The final vision was agreed, and final landscape and heat maps produced. Sector clusters identified as high priority included: Process Industries, Transport and Energy, Built Environment, Retail and Digital.

Making It - Outcomes

The final project report 'Making It - Advanced Manufacturing in Liverpool City Region to 2020' outlines the vision for advanced manufacturing, and identifies several short term opportunities and a number of global competencies on which the city region can grow.

Significant EU funding has been obtained for initiatives that fit the regional capabilities in line with established national priorities. An early outcome of the process came in 2014 when the Liverpool City Region successfully bid for the UK's first University Enterprise Zone, 'Sensor City'. Connected Liverpool has a vision to enable Liverpool to become the first 'Smart City' in the UK with ongoing monitoring of resource deployment. In 2015, LCR LEP, in conjunction with MerseySTEM, ran a series of Robotic Challenge heats, encouraging young people's motivation in STEM subjects.

Simon Reid, Sector Manager for Advanced Manufacturing, Liverpool City Region LEP, said: "The 'Making It' project is the most in-depth study of its kind in the UK. It has identified the longer term competencies that the Liverpool City Region needs in order to remain competitive. These opportunities provide a justification for future investment through the national manufacturing strategy. The IfM ECS team was hugely instrumental in helping us with the research process, bringing with it both knowledge of the National Competency framework as well as a wealth of expertise in stakeholder engagement and facilitation."



Above: Advanced robotics in manufacturing processes
Front: Robots at JLR Halewood plant

However, the principal outcome has been the shared vision of the manufacturing possibilities within the region. LCR now has a set of short-term opportunities that build on existing strengths, and a compelling vision for the future.

Informing and advising governments

The Making It project is typical of the work IfM ECS carries out when working with international, national, regional and local policymakers to develop joined-up industrial strategies. Its team of experienced consultants works with governments and their agencies to support industrial innovation. IfM ECS uses powerful methodologies to identify opportunities for growth, understand which capabilities are needed to make the most of those opportunities and to put in place actionable plans. It has delivered successful projects for governments including: EU, UK, Mexico, Australia and Chile.

The facilitation skills of IfM ECS consultants enables IfM to apply its proven research-based framework and, with the existing expertise of its clients, to synthesise new and practical strategies for sustainable competitive advantage from manufacturing.

"IfM ECS brought ...a wealth of expertise in stakeholder engagement and facilitation"



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