**Made Smarter Innovation**

The Made Smarter Innovation challenge funds businesses and researchers to deliver a resilient, flexible, more productive and environmentally sustainable UK manufacturing sector.

This challenge will support the transformation of UK manufacturing by pioneering the development and integration of new and existing industrial digital technologies (IDTs), including artificial intelligence (AI) and virtual reality.

The challenge will support manufacturers and technology developers to:

* prove their ideas
* quickly develop with experts
* scale ‘out of the box’ digital technology solutions

The challenge is funding projects in:

* smart connected factories
* connected and versatile supply chains
* adaptable, flexible manufacturing operations and skills
* new ways to design, test and make products

This challenge helps take the risk out of innovation for UK manufacturers who want to make change happen. It supports collaborations between UK manufacturing sectors to create innovative digital solutions, with the help of leading industry experts in digital technologies.

Key digital technologies in this challenge include:

* artificial intelligence, machine learning and data analytics
* additive manufacturing
* robotics and automation
* virtual reality and augmented reality
* the Industrial Internet of Things and connectivity (5G, LPWAN)

### Made Smarter Innovation network

This network, delivered by the Knowledge Transfer Network, is a national programme for manufacturers looking to innovate, and the developers of innovative digital technologies and solutions.

It will deliver a vision of UK manufacturing that is more productive, competitive and sustainable through the development of a powerful ecosystem of innovative industrial digital technology providers.

[Learn more about Made Smarter Innovation and join the network](https://iuk.ktn-uk.org/programme/manufacturing-made-smarter/).

### Made Smarter Innovation hubs

The innovation hubs are a national network of facilities available to the manufacturing industry, to develop, demonstrate and test digital solutions for manufacturing and supply chains.

Digital Catapult will deliver the £10 million [Made Smarter Innovation digital supply chain innovation hub](https://digitalsupplychainhub.uk/). This 4-year programme will create an effective and integrated ecosystem to develop new solutions and transform manufacturing.

The hub is designed to drive innovation for all potential users, including large and small technologies providers and manufacturers. It will also form part of a national network, made up of clusters of test beds, living labs and other developmental environments.

Ulster University will deliver the £12.3 million [Smart Manufacturing Data Hub](https://smdh.uk/). The hub will support small and medium-sized manufacturers to capture and better utilise their data, helping them unlock key productivity, growth and sustainability gains. Businesses in sectors spanning food and drink, aerospace, and many more will be supported to develop, test and adopt the latest data-driven innovations.

The digital smart factory will provide manufacturers with expert analysis of their production data from data scientists, gain impartial advice, and offer training on key digitalisation technologies.

### Research programmes

#### InterAct

This £4.4 million ESRC-led programme is a network for academics from the economic and social sciences to support the innovation and diffusion of digital technologies that will result in a stronger, more resilient UK manufacturing industry. The programme will run from November 2021 to December 2024.

[Find out more about the InterAct network](https://interact-hub.org/).

#### Made Smarter Innovation research centres

This £25 million programme will see 5 university-led research centres help the UK’s manufacturing industry become more productive and competitive through innovation and adoption of digital technologies.

As well as being at the forefront and driving developments in their areas of expertise, these research centres will help bridge the gap between basic research and its application in manufacturing. This will provide a pipeline of digital technologies for the future.

##### Centre for People-Led Digitalisation (PLD)

Based in Bath, Nottingham and Loughborough Universities, PLD aims to achieve the highest level of manufacturing productivity by increasing the digital knowledge and awareness of manufacturers.

It also aims to create ‘needs-driven’ processes to support the industry in realising the potential of a people-led approach to digitalisation, placing ‘people’, their most valuable assets, at the core of solutions. The centre will work in close partnership with industry to sustain and grow an enduring competitive advantage, by increasing people’s digital skills and processes for UK manufacturing.

[Find out more about PLD](https://www.madesmarter.uk/made-smarter-innovation/research-centres/centre-for-people-led-digitalisation/).

##### Digital Medicines Manufacturing Research Centre (DM2)

Led by the University of Strathclyde, DM2 aims to transform medicines development and manufacturing productivity and drive patient-centric supply.

To achieve this, DM2 will work with industrial partners to develop and accelerate the adoption of industrial digital technologies (IDTs) in the pharmaceutical sector. This will enable the required transformations in data exploitation needed to empower users across pharmaceutical supply chains.

The programme’s research objectives are to:

* accelerate digitalisation in the pharma sector
* transform medicines development and manufacturing productivity
* revolutionise quality control
* drive patient-centric supply
* enable the workforce of the future

[Find out more about DM2](https://www.madesmarter.uk/made-smarter-innovation/research-centres/digital-medicines-manufacturing-dm2-research-centre/).

##### Research Centre for Smart, Collaborative Robotics (CESCIR)

Led by Loughborough University, CESCIR will work with industry to identify 4 priority areas of research:

* collaboration
* autonomy
* simplicity
* acceptance

CESCIR will create a network of academia and industry, connecting stakeholders, identifying challenges or opportunities, reviewing progress and sharing results. Open access models and data will enable wider academia to further explore the latest scientific advances.

Within the manufacturing industry, large enterprises will benefit as automation can be brought into traditionally manual production processes. Similarly, better accessibility and agility will allow more small and medium-sized enterprises to benefit from automation, improving their competitiveness within the global market.

##### Connected Factories

Led by the University of Nottingham, Connected Factories proposes a radical new approach to building the manufacturing infrastructure of the future based on autonomous connected factories. It will challenge traditional manufacturing systems science and allow future manufacturing operations to be delivered by ubiquitous production units that can be easily repurposed, relocated, and redeployed in response to changing product requirements and volume demand.

The research will be supported by both an underpinning programme of fundamental research in system design, modelling, control and integration, and a set of application studies addressing emerging industrial needs. This will provide the UK industry with a blueprint for a unique connected network of future smart factories able to cost-effectively manufacture complex products on-demand while exhibiting new levels of resilience and market responsiveness.

[Find out more about Connected Factories](https://www.madesmarter.uk/made-smarter-innovation/research-centres/research-centre-for-connected-factories/).

##### Materials Made Smarter Centre (MMSC)

MMSC will develop the advanced digital technologies and tools to enable the verification, validation, certification and traceability of materials manufacturing. It will also work with partners to address the challenges of digital adoption. The digitalisation of the materials thread will drive productivity improvements, realise new business models and change the way we use materials.

Led by the University of Sheffield, MMSC will work with:

* High Value Manufacturing Catapult Centres, including:
  + the University of Sheffield Advanced Manufacturing Research Centre
  + the Manufacturing Technology Centre (MTC)
  + the Materials Processing Institute
* industrial partners, including:
  + Rolls-Royce
  + Tata
  + Constellium

[Find out more about MMSC](https://www.madesmarter.uk/made-smarter-innovation/research-centres/materials-made-smarter-research-centre/).

#### Made Smarter Innovation standards

This £250,000 programme will implement guidance for emerging digital industries to promote the greater abilities of IDT, including cyber awareness and best practice. The programme will identify gaps in the current regulations and build on existing standard through:

* workshops
* guides
* helpful tools

The programme will create a common open standards environment for manufacturing IDTs that will allow developers and users to rapidly exploit the benefits of IDT while minimising operational and cyber risks.

Read more about the challenge, programmes and projects in the [Made Smarter Innovation challenge brochure](https://www.madesmarter.uk/made-smarter-innovation/).