

# HOW 4IR IS TRANSFORMING MANUFACTURING PRODUCTIVITY

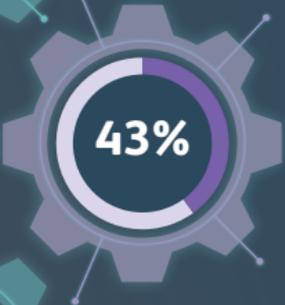
## MANUFACTURING IS UNDERGOING A DIGITAL TRANSFORMATION TO THE 4TH INDUSTRIAL REVOLUTION (4IR)

TWO YEARS ON FROM OUR MANUFACTURING  
AND THE 4TH INDUSTRIAL REVOLUTION  
FACT CARD WE FIND:

A circular gear-shaped infographic with a teal-to-white gradient. The number 64% is centered in white. The gear has several teeth and small lines extending from its perimeter.

**64%**

of manufacturers say they  
are familiar with the concept  
of 4IR

A circular gear-shaped infographic with a purple-to-white gradient. The number 43% is centered in white. The gear has several teeth and small lines extending from its perimeter.

**43%**

of firms have moved  
beyond the initial  
'conception' phase  
and are making  
investments

A circular gear-shaped infographic with a teal-to-white gradient. The number 44% is centered in white. The gear has several teeth and small lines extending from its perimeter.

**44%**

of firms agree their productivity would  
be even better if they were more  
innovative in their use of technology

A circular gear-shaped infographic with a purple-to-white gradient. The number 5% is centered in white. The gear has several teeth and small lines extending from its perimeter.

**JUST  
5%**

of firms disagree  
4IR will be a  
business reality  
by 2025

# WHY 4IR MATTERS FOR UK MANUFACTURING

4IR is the **future of factories** and can deliver a step change in manufacturing productivity



All countries are undergoing this transformation but just one in four UK manufacturers would agree the UK is in a **leadership** position



That's important as over the last decade productivity growth in UK manufacturing has flat lined, eroding **international competitiveness**



4IR can repair this, 'being innovative in the use of technology' is seen by manufacturers as the number one factor to help **boost productivity**

## THE THREE PHASES TO THE 4IR TRANSFORMATION – WHERE ARE MANUFACTURERS?

PHASE 1:

### CONCEPTION



How can it help?

What is this?

What are others doing?

PHASE 2:

### EVOLUTION



Current business practice



Optimised with technology

PHASE 3:

### REVOLUTION



Step change in how value is derived

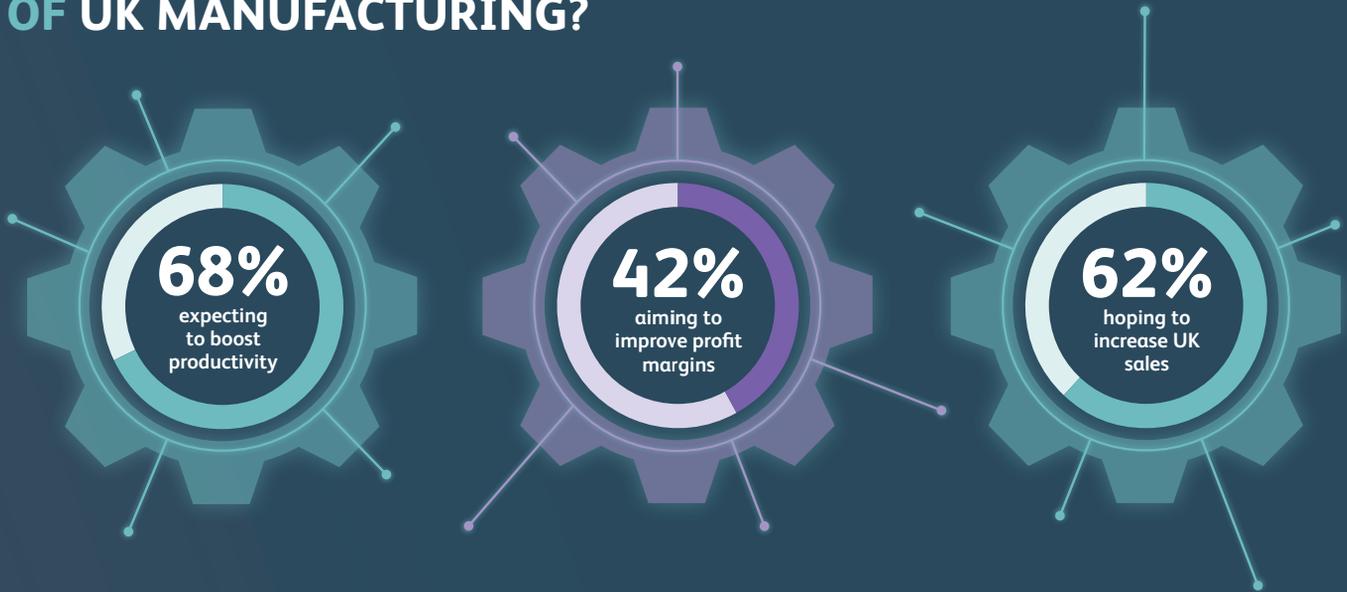


UNDERPINNED BY COMPANY STRATEGY AND AMBITION

30%

of firms are in the 'pre-conception' phase - doing nothing on 4IR

# WHAT IS THE STRATEGIC AMBITION OF UK MANUFACTURING?



## TECHNOLOGIES HELPING TO MEET THAT AMBITION

### IOT + ANALYTICS

The Internet of Things (IoT) is a network of sensors embedded in objects, which send and receive data. It allows for a closer integration of factory equipment and IT systems, and closer supply chain and customer integration. Sensors gather operational and strategic data which can be used to improve process and product optimisation. Predictive analytics is closely linked to IoT.

A large specialist materials manufacturer began using sensors to track and control manufacturing processes in their factory. This allowed them to know exactly where all orders are in the factory, to plan for scheduled delivery, and give accurate delivery information to customers and suppliers.



### AUGMENTED REALITY

Augmented reality is technology that superimposes a view of the real world with computer generated sound, video, graphics, or location data. It can be in the form of head-mounted displays, handheld displays, and projected spatial displays. It can offer remote training, help to enhance product design more realistically, and assist warehouse workers to work with greater accuracy.



AR can monitor safety levels by revealing temperature, risk of chemical exposure or other diagnostic information from IoT devices. A car manufacturer used spatial display to see potential designs over a prototype to scale. This improved decision making, collaboration and efficiency.

### COBOTS

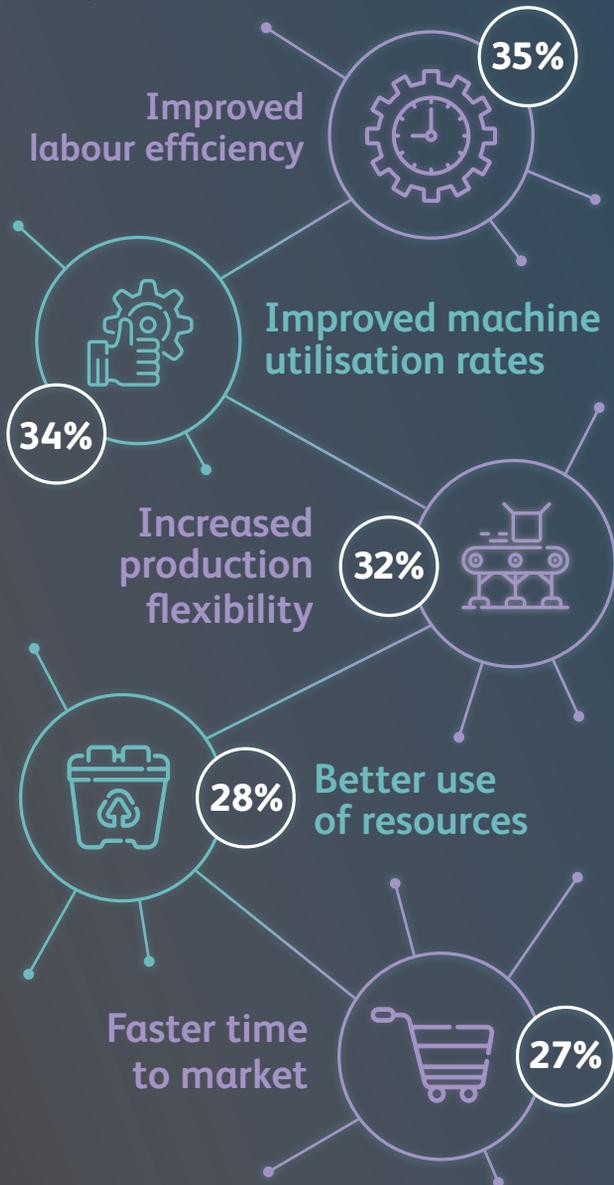
A cobot is a type of robot that is free of any fencing or enclosures, designed for direct physical interaction with humans in a shared workspace. Cobots are smaller, safer, less costly, work more quickly and are more adaptable to different tasks than traditional robots. They do not require programming and can be instructed by workers, whilst interacting with IoT factory equipment.

Cobots can perform tasks that are dangerous or difficult for humans to perform, or tasks that need a high level of accuracy or repetitiveness. A technology manufacturer's usage of cobots alongside workers for repetitive tasks reduced their failure rate from double digits to less than 1%.



# BENEFITS EXPECTED OR BEING REALISED IN THE 4IR EVOLUTION PHASE

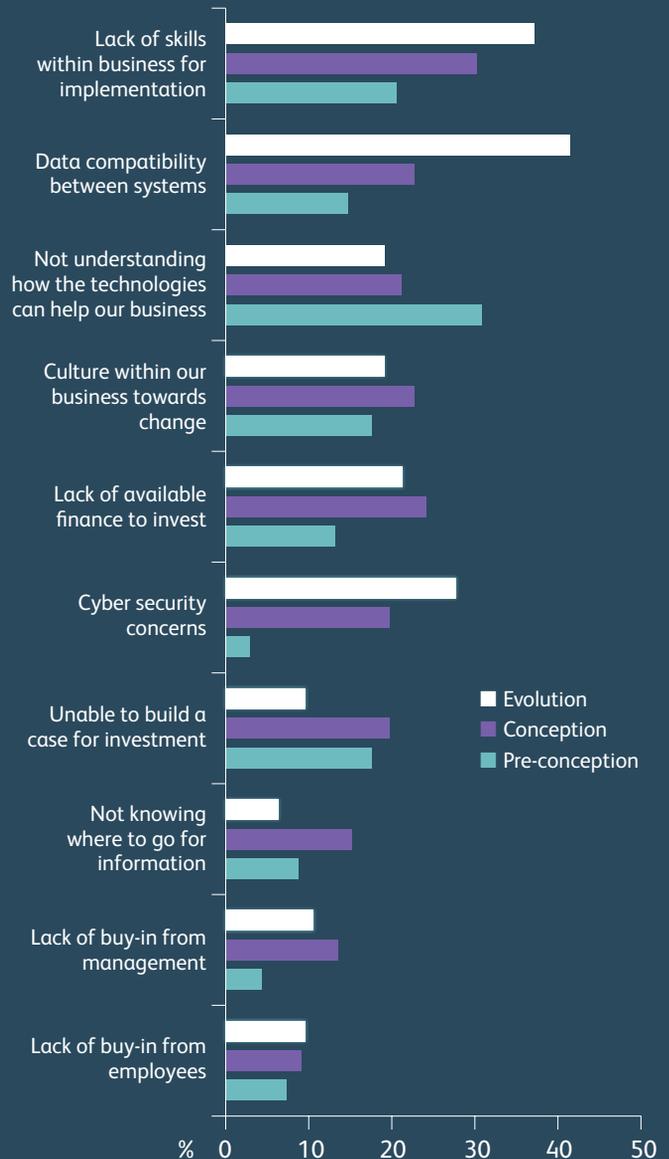
Benefits companies have achieved, or anticipates achieving, when adopting 4IR technologies and techniques



Source: EEF Manufacturing Outlook Survey 2018q2

# BARRIERS STANDING IN THE WAY OF THE 4IR DIGITAL FUTURE

Barriers companies have experienced, or anticipates experiencing, when adopting 4IR technologies and techniques



Source: EEF Manufacturing Outlook Survey 2018q2

 eef

The  
manufacturers'  
organisation

## Getting manufacturing from here to a digital future



The widespread adoption of 4IR digital technologies will reshape and transform manufacturing processes, supply chains and business models. This has the potential to get manufacturing productivity, which has flat-lined for the past decade, back on track and drive productivity gains across the whole economy.

Some manufacturers are already grasping opportunities, but others are still to take their first steps on the 4IR journey. Industry needs to take a global view – this technological change is happening around the world and countries that are ambitious about change will harness the benefits. Government needs to play a part in the 4IR journey too, aligning industrial strategy ambitions and actions to a digital future for manufacturing.

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Our membership and business services packages deliver expert support to thousands of companies in the UK, helping them to improve processes and productivity, maintain safe workplaces and attract, develop and retain skilled, productive and flexible workforces.

And, because we understand manufacturers so well, policy makers trust our advice and welcome our involvement in their deliberations. We work with them to create policies that are in the best interests of manufacturing, that encourage a high growth industry and boost its ability to make a positive contribution to the UK's real economy.

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