

The biggest and most important week in the manufacturing calendar

SMART FACTORY EXPO

LEADERS CONFERENCE

STILL TIME TO REGISTER

Join the UK's biggest showcase for the Fourth Industrial Revolution

Digital Manufacturing Show Guide

15-16 November 2017
Exhibition Centre Liverpool

As part of The Manufacturer Live events

www.themanufacturerlive.com



THE Manufacturer
Flagship issue of The Manufacturer Magazine



Europe's largest digital manufacturing showcase

Welcome to the The Manufacturer Live 2017 - Digital Manufacturing Week, the UK's largest series of events dedicated to advanced manufacturing.

Within the following pages you will see why over 4,000 manufacturing professionals will be in Liverpool for The Manufacturer's Smart Factory Expo, Leaders' Conference, MX Awards and Top 100 2017 Report Launch.

Individually, these exhibitions, conferences and awards represent the largest manufacturer-to-manufacturer events in the British calendar – collectively they create a compelling reason for every ambitious manufacturing team to be present in Liverpool.

The Manufacturer Leaders' Conference is the UK's largest manufacturer-led conference, featuring 100 speakers across four streams, and bringing together over 500 senior manufacturing executives. Dedicated sessions for CEOs, Tier 1s, Mid-Tier and High Growth manufacturers ensure that the entire industrial ecosystem is represented in the event, which helps set the national manufacturing agenda.

This year the Leaders' Conference features four streams – Connected Factories, Big Data, Smart Design and Supply Chain – as well as a CEO workshop, and an innovative round table format that allows delegates to sit alongside keynote speakers for a series of small group discussions.

If you want to hear the country's most successful manufacturers talk through their roadmaps for success in 2018 – this is the one conference you cannot miss.

Smart Factory Expo is the largest dedicated digital manufacturing showcase in the country – with more exhibitors, start-ups, 'open conference' sessions, and free advisory sessions than any other advanced manufacturing show in the UK.

As Smart Factory Expo has grown in size, it has also grown in ambition: this year we have added dedicated exhibition

zones for Industrial Automation, Digital Transformation, Industrial Internet alongside Smart Factory – and created spotlights on innovation, entrepreneurship, women and STEM skills.

British manufacturers have a clear advantage over our international peers in at least one respect – our world-class technology sector is going to be key for companies looking to make a success out of the Fourth Industrial Revolution (4IR). The Innovation Alley zone of the Smart Factory Expo is your chance to engage with dozens of homegrown pioneers of the next generation of disruptive manufacturing technologies.

Liverpool City Region was the natural partner for The Manufacturer's Digital Manufacturing Week, with the region setting the pace for the UK's transition to higher-value, technology-enabled advanced manufacturing. Our **Manufacturing Tours** to some of the region's most exciting businesses and industrial accelerators allow you to see the region's capabilities at first hand. I know you will be impressed by what you see.

To pull together something the scale of Digital Manufacturing Week is a massive undertaking, and would not have been possible without our many, many partners, exhibitors and sponsors – and I thank them here for their support. It would also not have been possible without the talented and very hard-working team here at *The Manufacturer*. I hope you and your team gain real benefit from all this hard work – and enjoy seeing digital manufacturing spring to life in Liverpool this November!



James Smith,

Director (Digital + Events),
The Manufacturer

[@ManufacturingUK](#)

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Letter from Liverpool

I am looking forward to welcoming you to the Liverpool City Region on 15-16 November for the Smart Factory Expo and Leaders Conference. The events will bring together over 4,000 innovative and forward-thinking professionals from the world of manufacturing, and provide a fantastic opportunity to showcase Liverpool City Region's diverse and dynamic manufacturing ecosystem.

Manufacturing is a £3.2 billion economy for the Liverpool City Region. We are a region on the up and have been the focus of significant inward investment from giants of the manufacturing world.

In Halewood, Jaguar Land Rover produces a car every 80 seconds and has seen over £500m of investment since 2010. Down the road in Speke, AstraZeneca and Sequiris have invested nearly £90m in their bio-manufacturing facilities. While Alstom have just invested £25m in Widnes to create the largest rail modernisation facility in the UK, and Unilever have invested £200m in their state-of-the-art manufacturing and innovation centre in Port Sunlight.

But it's not just about the big companies.

Liverpool City Region is bursting with innovative manufacturing and engineering SMEs in emerging technologies like composites, additive manufacturing, robotics, virtual and augmented reality, the Industrial Internet of Things and big data analytics.

We're building on a proud manufacturing tradition to forge a new identity at the forefront of innovation and digitalisation.

We were the first region in the UK to embrace Industrial Digitalisation not just as a hypothetical possibility but an urgent practical imperative. Through our pioneering LCR 4.0 initiative we have established the UK's first business support programme working with SME manufacturing and engineering companies to help them on the Industrial Digitalisation journey. Since launching last year, LCR 4.0 is currently helping over 100 companies develop new processes and new products and open up new market opportunities.

The future prosperity of the Liverpool City Region is ultimately dependent not only on our capacity to drive technological innovation, but also on our ability to develop a well-qualified and highly skilled workforce. The driving mission of my mayoralty is to align investment in skills and training with identified skill deficits and the needs of our future economy.

That's why the Liverpool City Region is working hard to meet this challenge through a series of trailblazing initiatives and investments to equip our future workforce for the economy of tomorrow. With facilities such as the Studio School UTC in the heart of Liverpool's Baltic Quarter; Knowsley College's Digital Academy; the Engineering College in Birkenhead and the UK's only Microsoft-certified Academy at City of Liverpool College, we truly are a region on the cutting edge of digital technology.

Once again, I look forward to welcoming experts from across the world of advanced manufacturing to Liverpool and to have the opportunity to showcase some of the exciting and innovative work being done across our City Region.

Best wishes



Steve Rotheram,
Metro Mayor, Liverpool City Region

15 November



Leaders Conference Opening

Lights, cameras, action: the start of the largest manufacturer-led conference in the country - with over 500 senior manufacturing executives taking it in turns to speak, listen and learn across four different streams: Connected Factories, Big Data, Smart Design and Supply Chain. **See Page 37**

🕒 09.00

Smart Factory Expo opens

The UK's biggest standalone Industry 4.0 show with more world-class technology companies exhibiting under one roof than any other digital manufacturing show in Europe! Four exhibition zones - Smart Factory, Industrial Automation, Digital Transformation, Industrial Internet - an Innovation Alley featuring the UK's hottest manufacturing tech start-ups; and free-to-attend learning sessions in our Solutions Theatres.

🕒 09.00

Hack & Pitch

Be a fly-on-the-wall and watch as teams of engineers compete to tackle knotty manufacturing challenges. The drama will unfold live across both days of Smart Factory Expo as the teams first brainstorm solutions, then practice - pitch their ideas to industry experts, before battling it out live on 16 November.

🕒 10.00

Leaders' Conference Working Lunch with Speakers

Buckle-up for a special speed-networking session where conference delegates enjoy three 30-minute sessions, rotating between small group discussions led by different speakers. **See Page 51**

🕒 12.25



Top 100 2017 Report Launch & Networking Drinks Reception

Register to join us for a special event to announce The Manufacturer's pick of the Top 100 rising stars in British manufacturing, featuring individual apprentices, young managers, and senior executives who have made the biggest difference in 2017.

FREE to attend: register via themanufacturertop100.com

🕒 18.00

16 November

The Manufacturer Leaders Conference & Smart Factory Expo opens for the day.

It takes two days to do justice to the digital manufacturing opportunity - whether you are registered for the Leaders' Conference or attending one of the many activities being organised during Smart Factory Expo.

🕒 09.00

Women in Digital Manufacturing

The future is female! Tapping in to female talent will be crucial for the success of British manufacturers - and this special networking session takes place inside Smart Factory Expo. Encourage the female talent in your team and make sure they are registered to attend this event - free for all exhibition attendees, and generously supported by IBM. **See Page 14**

🕒 11.00

Cognitive Manufacturing, Smart Factory Solutions Theatre.

An interactive session showing how manufacturers can use IBM Watson to optimise your manufacturing process using visual and speech recognition to gather data from manufacturing operations and make recommendations to your engineering team.

🕒 10.30

Access STEM, Industrial Internet Solutions Theatre.

2pm-4.30pm. Smart Factory Expo opens its doors to the next generation of manufacturing talent as we invite manufacturing apprentices and young adults considering a career in manufacturing to walk round the show floor and attend a special STEM workshop.

🕒 14.00 - 16.30

The Manufacturer Manufacturing Excellence Awards.

Wrestle with your bow tie or put on your party frock at the UK's biggest annual celebration of manufacturing success - The Manufacturer Manufacturing Excellence Awards! Watch the drama unfold as the country's best manufacturers go head-to-head - there will be plenty of drink on hand for celebrations/commissions!

Get tickets to the glittering gala dinner:
www.themanufacturermxawards.com



🕒 18.30

Manufacturing Tours

14 & 17 November

From 9am throughout the day. Venture beyond Exhibition Centre Liverpool and join one of our tours to see the companies and people behind the North West's advanced manufacturing success story. Available Manufacturing Tours include Jaguar Land Rover, Sensor City, The Knowledge Quarter Liverpool, Sci-Tech Daresbury including the Virtual Engineering Centre, and Liverpool John Moores University.

14 Nov 🕒 09.00

From 10am and throughout the day. Stretch your legs and your horizons with a last chance to join one of our Manufacturing Tours - and take a look at the capabilities that make Liverpool and the surrounding region the UK's advanced manufacturing hub.

17 Nov 🕒 10.00

2017 Exhibitors include:



2017 Partners include:





SMART FACTORY EXPO

—
Europe's biggest digital
manufacturing event

SHOW GUIDE

Brought to you by:

THE **Manufacturer**

🕒 Register For **FREE**

www.tmsmartfactoryexpo.com

General Information

Opening hours

Wednesday 15 November
9.00am – 5.30pm

Thursday 16 November
9.00am – 4.30pm

Admission

Admission to Smart Factory Expo is by official event badge only. To register for the event and pick up your badge please visit the registration booths with your e-ticket. Your exhibition badge is valid for both days of Smart Factory Expo. The organiser reserves the right to refuse admission to the exhibition.

Registrations on site will incur an admin fee of £10

Wi-Fi

There is free visitor WiFi access across the Exhibition Centre Liverpool.

Cloakrooms

Cloakroom facilities are available next to the entrance in the Atrium.



First Aid

The Exhibition Centre Liverpool has first aid-trained staff available. If there is an accident or incident please ask the nearest member of the Exhibition Centre Liverpool or *The Manufacturer* staff. You will be able to find event staff in the registration area.

Travel & Accommodation

We have an accommodation booking page offering a range of local hotel options. Visit the Travel & Accommodation page on the event website for full details and for help planning your visit.

Parking: Attendees are entitled to a 25% discount at Liverpool Waterfront Car Park. You will need to collect a discount ticket from Guest Services, to be used with your existing car park ticket, when leaving the venue to claim this discount.

Local Discounts

A delegate card will be available to all attendees to collect at the event, this offering you discounts to many restaurants and local attractions in Liverpool.

Public address system

The public-address system is for official announcements and emergency messages only. It is not available to exhibitors or visitors under any circumstances.



Please tweet about your time at Smart Factory Expo using @TheManufacturer and #UKMFGweek



Share an update to your network using #UKMFGweek



Check in to to the Smart Factory Expo to share the event with your peers

Event Management

Smart Factory Expo is organised by *The Manufacturer*, A Hennik Group publication, 5th Floor, Elizabeth House, 39 York Road, London SE1 7NQ. Canvassing at this event by unauthorised personnel is strictly prohibited. Display or distribution of printed materials, except by exhibitors from their stands, is not permitted and will result in visitors being removed from the hall.

Up-to-date information

We have made every effort to ensure this guide is correct at the time of print. The event website and app have the most up-to-date event information. For full details on how to download the app. **See Page 12**

Bring your A-Team to Europe's biggest digital manufacturing show. Register today. © www.tmsmarfactoryexpo.com

Two words to define your future growth



The past 18 months has seen an incredible amount of emphasis placed on the 'Fourth Industrial Revolution' (4IR). Akin to Japan's Industrial Value Chain Initiative or the United States' Advanced Manufacturing Partnership, 4IR is heralded as the UK's response to Germany's pioneering Industrie 4.0 initiative.

Something of a catch-all term for almost any and every technological advancement, the over-emphasis of 4IR risks alienating exactly those who should be encouraged to engage with it the most. We need to move away from binary questions such as 'Are you 4IR ready?' or 'Will you survive the Fourth Industrial Revolution?' and take a different approach.

Perhaps the answer lies within continuous improvement. Every organisation – industrial or otherwise – has some form of continuous improvement programme, typically driven by strategic champions working across various levels and business functions.

Rather than being pitched as an operational panacea or viewed as having a fixed end-point, continuous improvement is exactly that – an ongoing effort to generate incremental or breakthrough improvements to products, services or processes.

1. Assessment

The most vital part of any continuous improvement programme is assessment – frequent appraisals which clearly define past, present and future performance. Often represented as a journey, continuous improvement looks very different from business to business, there is no one-size-fits-all approach.

There are numerous advantages to applying a continuous improvement mindset to 4IR – the first step of which is to substitute the arguably nebulous term 4IR for the more easily defined 'digital'.

By its very definition, continuous improvement leads to open-ended, strategic questions. In relation to digital, these could include: How does your business currently use digital technology? How are your competitors using digital technology? What paper-based processes currently hold up your new product introduction? What data does your organisation already collect, but doesn't make use of?

Of course, the answers to questions such as these will evolve over time in relation to how, where and when your business adopts digital technology. It also depends on the form of technology adopted – from cloud computing and additive manufacturing, to artificial intelligence and machine learning.

2. Value

Determining which digital technology your business invests in and when requires an understanding of what value it brings to both your own and your customers' business.

It's worth noting that the common definition of 'value' is monetary, either an increase in revenue or a decrease in operating costs; however, it can also be delivered through additional capabilities or the creation of a strategic relationship, for example.

Regular assessments should be undertaken to determine the tangible value a specific technology brings and how relevant it is to your organisation – a constantly moving target thanks to the ferocious pace of technological advancement.

An industrial robot, for example, may have been initially dismissed because of uncertainty around the size of the investment and how many different operations it could viably perform: two factors almost every automation provider has worked hard to address.

Alternatively, moving critical processes into the cloud may not have been the right fit for your business, but the advent of edge or fog computing may have made the transition more relevant.

Digital Manufacturing Week

Irrespective of how you define your digital transformation, you will be faced with a multitude of questions. One approach to answering these questions is to listen to the experiences of those who have faced and overcome the very same challenges.

The events which await you as part of The Manufacturer Live 2017 offer the perfect venue to do this, representing a true vision of what's possible today, not some distant point in the future.

The Smart Factory Expo, the Leaders Conference and Factory Tours offers you the opportunity to learn how world-class manufacturers are already seeing the benefits of digital transformation, and hear how leading technology providers can support your future growth.

We don't just discuss what's possible, we show you.

Jonny Williamson Editor, *The Manufacturer*

@Jonny_Will_28
j.williamson@hennikgroup.com
020 7202 7487



Show Features

Smart Factory Expo attracts thousands of manufacturing executives every year with the biggest selection of 'Industry 4.0' exhibitors under one roof - and a range of high-tempo activities for you and all of your senior team.

Four Exhibition Zones

Over 90 exhibitors spread across four key zones:

Smart Factory, Industrial Automation, Digital Transformation, Industrial Internet.

Take a closer look at the new tools of the 'Fourth Industrial Revolution'.

Solutions Theatres

Learn from some of the biggest names in European manufacturing - BMW, ThyssenKrupp, JLR, Airbus, Tata Steel, SKF - **FREE** to attend for all Smart Factory Expo visitors!

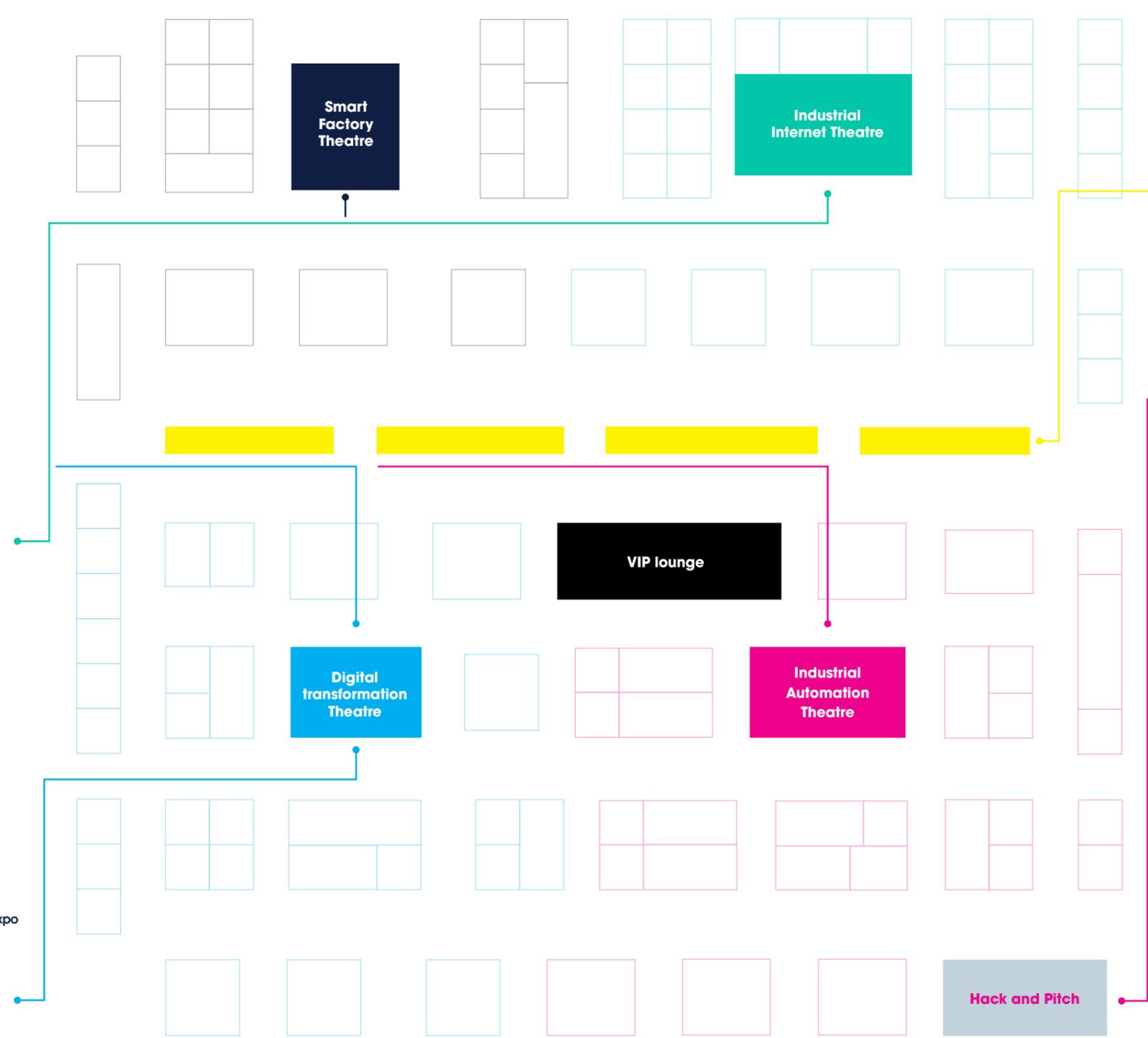
Manufacturing tours

Attend Smart Factory Expo, and register for one of our tours - Jaguar Land Rover, Sensor City, The Knowledge Quarter Liverpool, Sci-Tech Daresbury including the Virtual Engineering Centre, and Liverpool John Moores University - and see what the region's manufacturers, technology parks and industrial accelerators are achieving.

Apply for a free place on one of our Manufacturing Tours. Register today @ www.tmsmartfactoryexpo.com/register-smartexpo

Free Workshops

Organised by Cambridge University's Institute for Manufacturing. Turn to **page 19** for details.



Coaching Clinic

Drop in to a free manufacturing advisory service, provided by Hennik Edge, the consultancy arm of *The Manufacturer* magazine. Hennik Edge's experts will provide **FREE** one-to-one sessions throughout both days of the exhibition - just turn up to book an available session.

Innovation Alley

The UK's hottest manufacturing tech start-ups are lifting the lid on the future of British manufacturing in Smart Factory Expo's dedicated innovation zone.

Sponsored by: **Innovate UK**

Hack & Pitch

Watch teams of industrial engineers as they are challenged to generate, map out and then present their solutions to a key manufacturing challenge. All of this happens in full view of show visitors - enabling everybody to see an industrial-grade brainstorm in action. Your own company planning sessions will never be the same again!

Delivered by: **CATAPULT Digital**

British Manufacturing Showcase

Smart Factory Expo is proud to celebrate the very best of the country's advanced manufacturing with a dedicated showcase featuring products from UK manufacturers, such as vehicles from Jaguar Land Rover's local Halewood plant, as well as from past winners of The Manufacturer MX Awards. Proof that UK manufacturers can look to the future with confidence.

Located in the Exhibition Centre Atrium.

Women in Digital Manufacturing

The future of UK manufacturing is (more) female - and The Manufacturer is celebrating this fact with a special on-floor meeting of the Women in Manufacturing Liverpool Cluster. This showcases how companies are doing the right thing and gaining competitive advantage from harnessing the talents of their entire workforce. And ... there will be cake! **Page 14** for more details.

Industrial Internet Theatre - Speaker Highlights

15 Nov | 11:00-11:20



Postcards from the IIoT Edge - A real world view of IIoT in the SME Market

Charles will discuss how the SME ecosystem is essential to this revolution. How small, medium and large businesses can develop a win-win economy. He will present how Gardner Denver is working with multiple SME vendors to develop a shared servitised revenue stream and transition them from a traditional Cap Ex to an 'As-A-Service' model.

- Digital Transformation requires everyone to change - where do you start?
- IIoT SME business models require proven ROI. What is yours?
- What IIoT data do you need the most?

Speaker: Charles Joel, IoT & Advanced Analytics Director, Gardner Denver

15 Nov | 14:00-14:20



4IR - Beyond the buzzwords

A candid look beyond the glossy PowerPoint slides on what it takes to implement and transform for the next industrial revolution

- Are we in the middle of a digital gold rush?
- Machine performance is no longer not enough
- How to bridge the physical and digital worlds of operations

Speaker: Nicholas Leeder, Director PLM and Standards, SKF Group

16 Nov | 11:00-11:20



4IR and advanced analytics in the process industry

An overview of the application of Industry 4.0 and Advanced Analytics in a traditional process industry focussed on manufacturing initiatives

- Application of 4IR concept
- Advanced analytics of mfg processes
- Business applications of advanced analytics

Speaker: David Hudson, Group Leader, Thought Process Technology Reseach and Technology, Tata Steel

15 Nov | 12:30-12:50



Going from spark to fire with IoT in a multinational business

Discover insights about augmented and virtual reality from early stages of development and deployment in a manufacturing company, and the potential for scalability and cross-industry collaboration.

- The 3 top ingredients for developing breakthrough IoT projects
- How to communicate and engage with your entire organisation
- A blueprint (and re-print) for maximizing value

Speaker: Lucy Antrobus, Strategy & Projects Director, IMI Hydronic Engineering

16 Nov | 10:00-10:20



Building a robust data strategy

Discuss the challenges of building a Data Strategy from multiple data sources

- How to consolidate data sources for a BI solution
- How do you build analytical skills and capabilities in a manufacturing organisation
- Addressing the Cyber Security challenges around data

Speaker: Tony Doran, European Director of IS, NSK Europe Ltd

16 Nov | 14:30-14:50



Big Data - collection, security and insight

The construction industry collects and uses Big Data in the same way as the manufacturing sector. We look at a construction site as a factory without walls. This presentation looks at the ways we optimise our processes based on real time data collection.

- Big Data
- Cyber security
- Advanced Analytics

Speaker: Graham Herries, Director of Digital Technologies & EU Project Coordinator, Laing O'Rourke

15 Nov | 13:00-13:20



Breakthrough manufacturing in the digital era

The digitally-enabled disintegration of traditional straight-line supply chains means competition is increasingly felt at the doorsteps of factories. More than ever, there is need for breakthrough in manufacturing.

- To survive and thrive in the digital era, the role of factories will change from simple supply nodes to product centres and will require a culture shift toward pride in the product
- To achieve a Breakthrough in Manufacturing requires being sensitive to the barriers to performance step change and picking the right approaches to address them that fit the specific company and site situation
- Technology will play a key role in The Breakthrough in Manufacturing and approaches can be supercharged by sifting the right from the hype in digital technologies to get the edge in production innovation, quality and cost before traditional competitors or digital disruptors get there first

Speaker: Nigel, Manager, A.T. Kearney's Manufacturing Centre of Excellence

16 Nov | 15:00-16:00



STEM Showcase

Smart Factory Expo opens its doors to the next generation of manufacturing talent, with a dedicated session for young adults considering, or already studying, for a rewarding career in manufacturing. A specially-selected line-up of senior manufacturing executives will talk about how they got into manufacturing, the key drivers of success in their careers and - crucially - the advice they would give their younger selves! This session is for students and apprentices registered for STEM Afternoon.

For the full list of presentations visit
① www.tmsmartfactoryexpo.com/solutions-theatres
for latest agenda details.

THE POWER OF YOU.

Today, you have more power than any human before you.

More power from data.

More power from expertise.

More power from cloud.

More power from AI.

You have more power to do what you do better.

You can make markets.

You can invent.

You can move products, energy and people from here to there.

You can code apps.

You can live healthier and smarter.

You can do what you could never do before.

Because today, you can couple exponential knowledge
with the exponential power of technology
to realise exponential outcomes.

This is how you can do your best work ever.

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