



Industry 4.0 & Digital Transformation

John McClune
Operational Excellence Manager

Friday, 29 December 2023

Help businesses make the work
Easier - Better - Faster - Cheaper

“The pace of change will never be this slow again” (McKinsey)

Industry 4.0 - next phase in the digitalisation of the manufacturing sector, driven by disruptive trends including the rise of data and connectivity, analytics, human-machine interaction, and improvements in robotics.

The application of digital technology to manual + analogue processes to create better outcomes

What?

How?

Why?

Support?

Digital transformation embeds digital technologies in your business to improve efficiencies, reduce costs, create new products + services, business models etc.

In the News (on August 15)

Lifesaving drone being trialled on Cornish beach



The new Emergency Response Drone Pilot rescue service is being tested in Cornwall and could help save lives.

[Read more >](#)

AI offers huge promise on breast cancer screening



By Nick Triggie
Health correspondent



Swedish study found computer-aided detection could spot cancer at similar rate to two radiologists.

[Read more >](#)

Devastating wildfires spur new detection systems

By David Silverberg
Business reporter, Toronto



Firms are using AI, drones and satellite tech to help detect and suppress wildfires.

[Read more >](#)

UK's first drone mail service begins in Orkney



Royal Mail and Skyports will distribute letters and parcels between the islands using drones.

[Read more >](#)

THE ECONOMIC TIMES · 7h

How Industry 4.0 is transforming the HR functions

In Industry 4.0, as automation and digitisation have started to upend many manual and routine tasks, HR has been encouraging ...

Police use drones to crackdown on caravan crime

By Pritti Mistry
BBC News



Lincolnshire Police says nearly 40% of residential burglaries were in mobile homes along the coast.

[Read more >](#)

Smart socks on trial at Exeter dementia care home

By Jen Smith
Health correspondent, BBC Spotlight



The socks monitor heart rate, sweat levels and motion, giving a warning when a patient is anxious.

[Read more >](#)

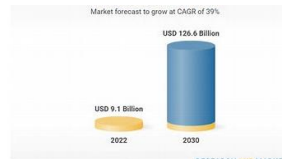
How digital transformation can curb economic downturn

High energy costs have also brought organisations to their knees, and forced them to take a more fundamental look across ...

yahoo!finance · 1d

Global Digital Twins Market Driven by Industry 4.0 and Predictive Maintenance, Expected to Reach \$126.6 Billion by 2030

Global Strategic Business Report™ report has been added to ResearchAndMarkets.com's offering. The global market for Digital ...



Workplace automation: A threat or an opportunity?

Automation is a growing field because it enables companies to reduce the requirement for labour.

15 November 2022 · News · Northern Ireland



Automation could replace 1.5 million jobs, says ONS

In England, the jobs of women, the young and part-time workers are most at risk from automation.

25 March 2019 · News · Business



23



IoTtechnews.com · 1h

Enterprises accelerate IoT deployments to drive digital transformation

In the ever-evolving landscape of digital t, IoT deployments have emerged as a pivotal component in the strategies of ...



INDEPENDENT · 6d

Integration for all: why SMEs shouldn't fear digital transformation

aerospacemanufacturinganddesign.com · 20h

What's taking shape with additive manufacturing and robotics?

AM is ideal for repairing old parts, customizing production parts, or prototyping/modeling new ones for manufacturers needing ...



The workers already replaced by artificial intelligence



AI police van detects drivers using mobile phones

Hampshire & Isle of Wight



For manufacturing, digital transformation is no longer a choice — it's a necessity.

'My AI bionic arm is giving me my freedom back'



A mother has had an AI bionic arm fitted after two underground trains ran over her nine months ago.

Automation will put half of NI jobs at risk

More than 400,000 jobs are at risk because of an increase in automation, a report claims.

18 January 2018 · News · Northern Ireland

Is AI a threat to the world of fabric design?

© 5 days ago



Stephanie Power started with an AI-designed Christmas card, before moving on to AI-powered fabric design.

Industry 4.0 Evolution & Foundations

- Interconnectivity
- Decentralisation
- Virtualisation / Simulation
- Real time capability

1st Revolution
1780 – 1840
Mechanisation, Water
/ Steam Power



2nd Revolution
1830's - 1915
Mass production, electricity



3rd Revolution
1969 – 2010's
Computers, PLC's,
Automation





Issues - Drivers



Labour Challenges



COSTS



Productivity



Competition



Net Zero



Integration



Supply Chain
Disruptions



Energy Costs

**A 10X
ECONOMY**

Digital Opportunities

23% of world's energy wasted through tribological contact (wear, friction, lubrication)

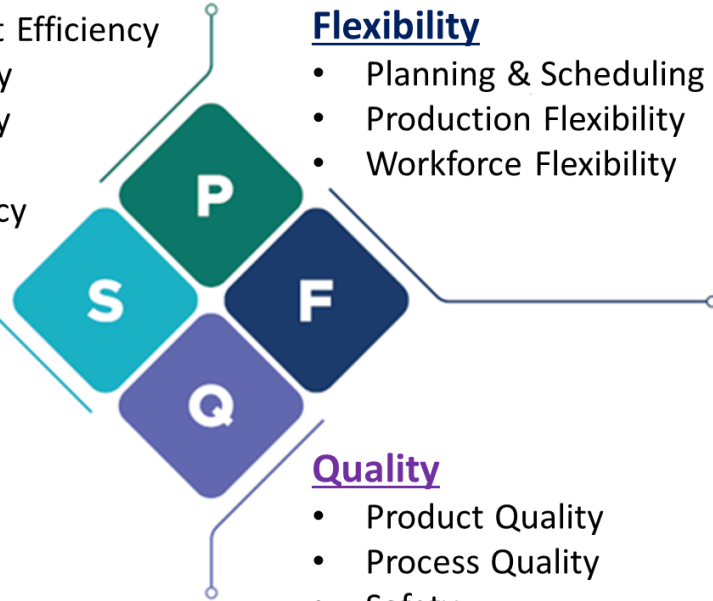
Indicative quantification of value drivers:

Productivity

- Asset & Equipment Efficiency
- Inventory Efficiency
- Materials Efficiency
- Utilities Efficiency
- Workforce Efficiency

Flexibility

- Planning & Scheduling Eff
- Production Flexibility
- Workforce Flexibility

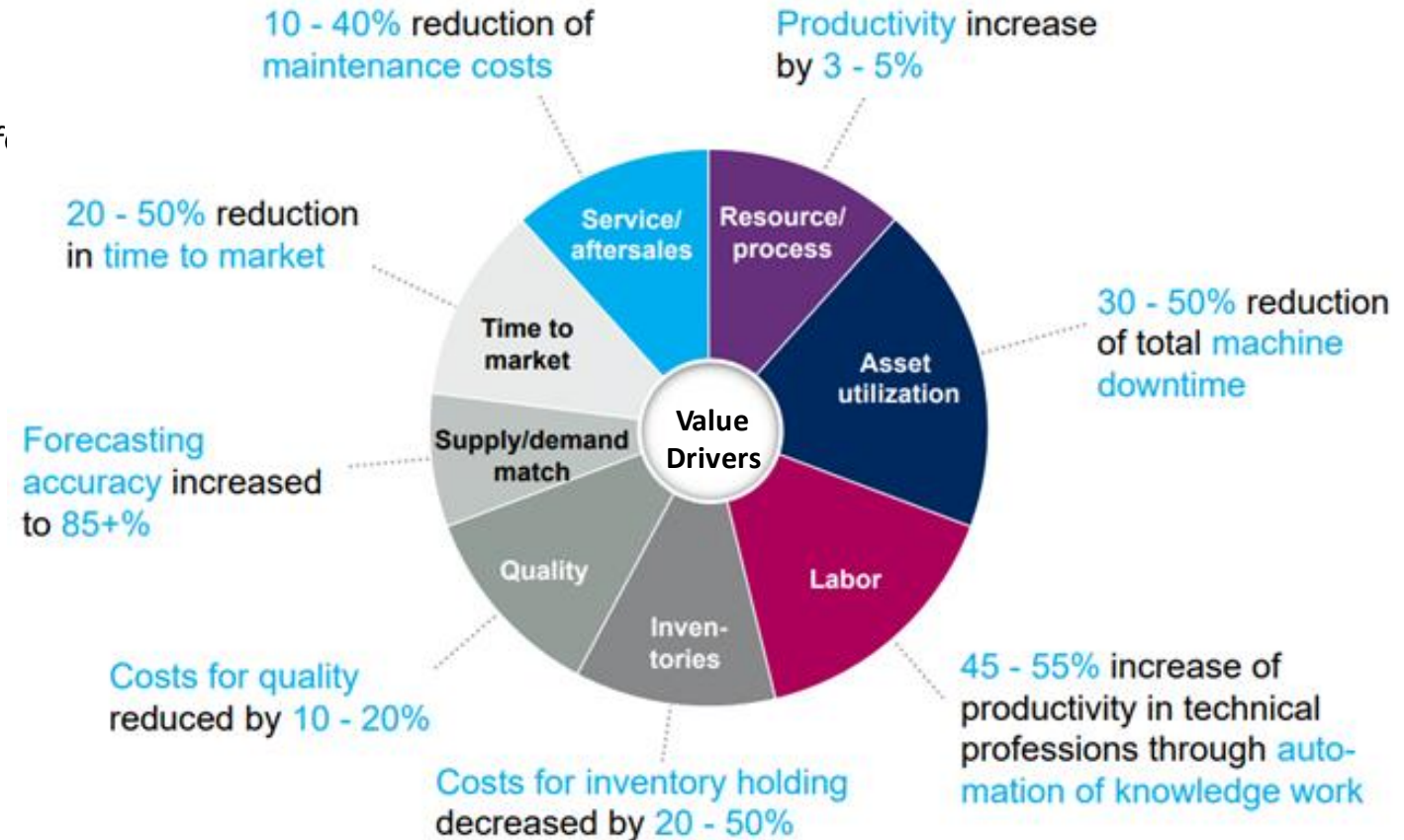


Speed

- Time to Market
- Time to Delivery
- Project Delivery
- NPI

Quality

- Product Quality
- Process Quality
- Safety
- Security



Source: McKinsey, How to navigate digitisation in the manufacturing sector

By 2030 the world of work will be very different (..... 7 years!)

- 800 million jobs lost through automation;
- 890 million new jobs created;
- 14% of workers will have been forced to change occupation;
- Use of social & emotional skills in work up by one quarter;
- Time spent on physical & manual work down by 14%;
- 1 billion jobs to be transformed by technology.

McKinsey 2018: 'AI, automation, and the future of work'

Automation brings new opportunities

- WEF estimates net increase of 58 million jobs globally due to automation.
- About two-thirds of these will be higher skilled.
- Uncertainty over extent to which entire jobs or tasks within roles could be automated.

Emerging Opportunities

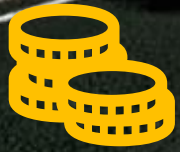
- Data analysts
- Blockchain
- Process automation
- Information Security
- 'gig' economy workers with specialist skills
- Big data science specialists
- Developers
- Machine learning specialists
- Sales & marketing professional

Diminishing roles

- Secretarial roles
- Assembly & factory work
- Cashier / clerk roles
- Finance
- Call centre
- Customer service
- Office support

Need to be thinking of Jobs of the Future / Job re-design now

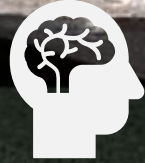
Obstacles



Costs



Investment



Skills / Capability



Direction /
How to get there



Security

Issues - Drivers



Labour Challenges



COSTS



Productivity



Competition



Net Zero



Integration



Supply Chain
Disruptions



Energy Costs

**A 10X
ECONOMY**

First Things First!

The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency

~ Bill Gates ~





Transformation (Change) is not a one-off event
Support is available to assist you through this.

Range of INI support available to help your digital journey

- Enabling Advisory / Financial supports
- **Talk to us today**





A 10X ECONOMY

- Innovation
- Sustainable
- Inclusive

GEMX

Collaborative Growth

Financial + advisory support to help businesses work collaboratively to develop new opportunities / markets

People + Skills Development

Financial + advisory support to develop people + business skills

Leadership + Capability Development

To develop leadership skills + capabilities for future growth

Operational Excellence

To develop Operational Excellence capability to improve productivity

Supply Chain Resilience + Development

To develop Supply Chain capability to enhance value, reduce risk and improve competitiveness

Innovation, Research + Development

Financial + advisory support to help businesses innovate and develop new products, services, processes

Energy + Resource Efficiency

Financial + advisory support to achieve sustainability objectives and environmental improvements

Technical Development

Financial + advisory support to address technical, product or process issues i.e. IP / certifications / accreditations

Selective Financial Assistance

Capital and employment grant to support investment projects which contribute to increased employment and productivity

Access to Finance

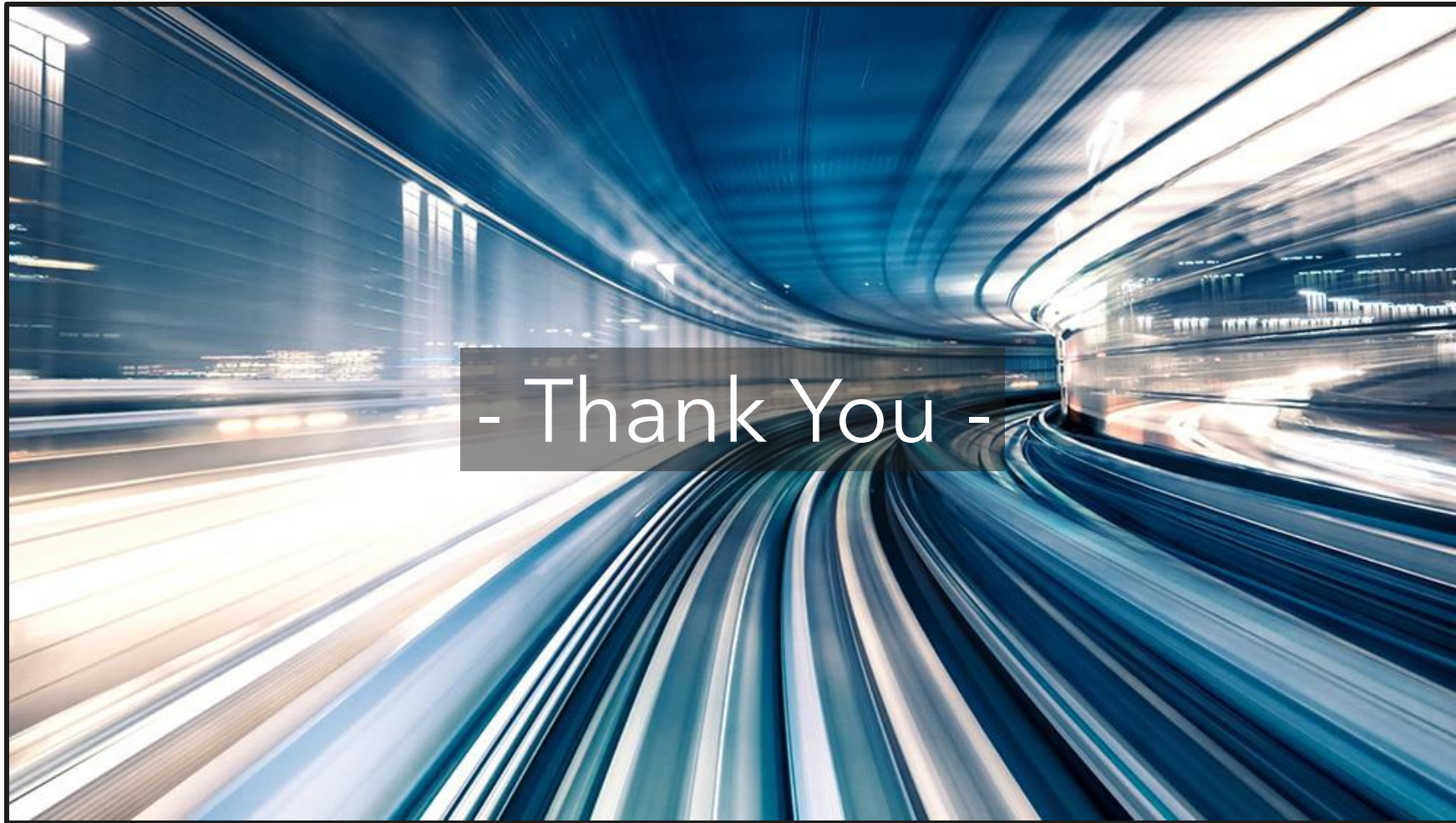
Support to improve access to finance to support growth + development

Property

Support for identification + development of new property solutions to achieve growth plans

Trade

Financial + advisory support to help businesses enter new markets + develop export capability



- Thank You -