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Learning Advanced Industrial Technologies

Linking VET teachers and SMEs in the move towards
the Factories of the Future (Industry 4.0)

Friday 3rd November 2017

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Industry 4.0: Agenda

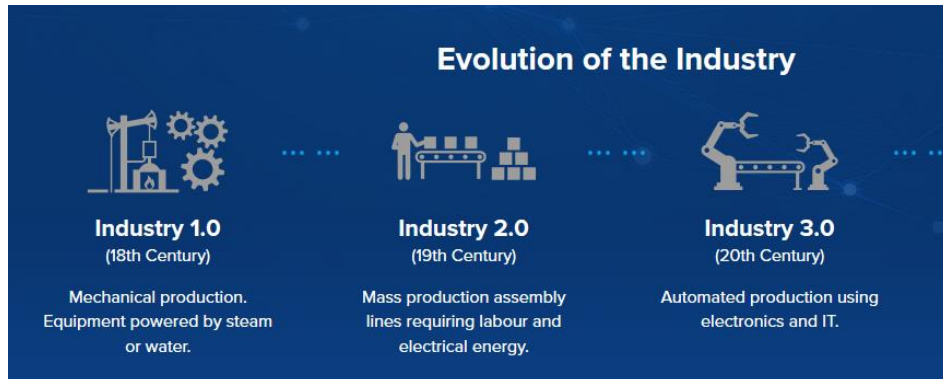
IoT & Data Analytics	Collation and exchanging of data with connected devices (IoT or IIoT); extracting useful information from Big Data using analytics such as data mining and machine learning.
Robotics	Introduction to Flexible and Collaborative robotics.
Additive Manufacturing (3D Printing)	Creation of physical objects directly from computer generated 3D models. 3D Printing processes and latest trends. There will be demonstration videos and 3D print samples.
Sensoring	Introduction to sensors for maintenance; optimising the maintenance activity with oil and vibration sensors.
Business Model	Impact of Industry 4.0 on business models; relevance of Service approach rather than traditional product approach.

Industry 4.0: An Introduction

Learning Advanced Industrial Technologies (LAIT).

What are advanced industrial technologies?

Images (1), (2)



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Lait4.0

Background

Forschungsunion

Wirtschaft und Wissenschaft
begleiten die Hightech-Strategie

acatech
NATIONAL ACADEMY OF
SCIENCE AND ENGINEERING

ROYAL
ACADEMY OF
ENGINEERING

Foreign &
Commonwealth
Office
BIS

UK
Science &
Innovation
Network

EPSRC
Engineering and Physical Sciences
Research Council

Ceed

Centre for Engineering
Education & Development

Securing the future of German manufacturing industry

Recommendations for
implementing the strategic
initiative INDUSTRIE 4.0

Final report of the Industrie 4.0 Working Group

Industrie 4.0 – What can the UK learn from
Germany's manufacturing strategy?

4 February 2014



GASCOTLAND
Precision Engineering
A Pryme Group Company

BBC
NEWS

UK must prepare for fourth industrial
revolution, says report

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DUNDEE AND ANGUS
COLLEGE

The Drivers

Market Demands

Reduction in **costs**

Shorter product life cycles

Efficient, flexible and sustainable production

Increased **variability** of the product

Mass customisation

Dynamic value chain networks

Skilled labour and response to **ageing** society

Technology Enablers

Advances & lower cost of **ICT**

ICT as a **Service**

Internet of Things (IoT)



The Technologies

- Additive Manufacturing
- Cyber Physical Systems (Simulation)
- Cloud Computing
- AI & Machine Learning
- Big Data and Advanced Analytics
- Industrial Internet of Things
- Collaborative & Autonomous Robotics
- Augmented Reality
- Machine Vision
- Cyber Security



The Difficulties

As with many new technologies and rapid changes there can be difficulties:

- Implementation Strategy
- Training and Skills
- Transitional Support from Government
- Rapidly Evolving Marketplace
- Standards
- Cyber Security
- Social Cohesion



Courses
Support
Future Talent
School Zone
International Students



Manual / Mechanic



Specification

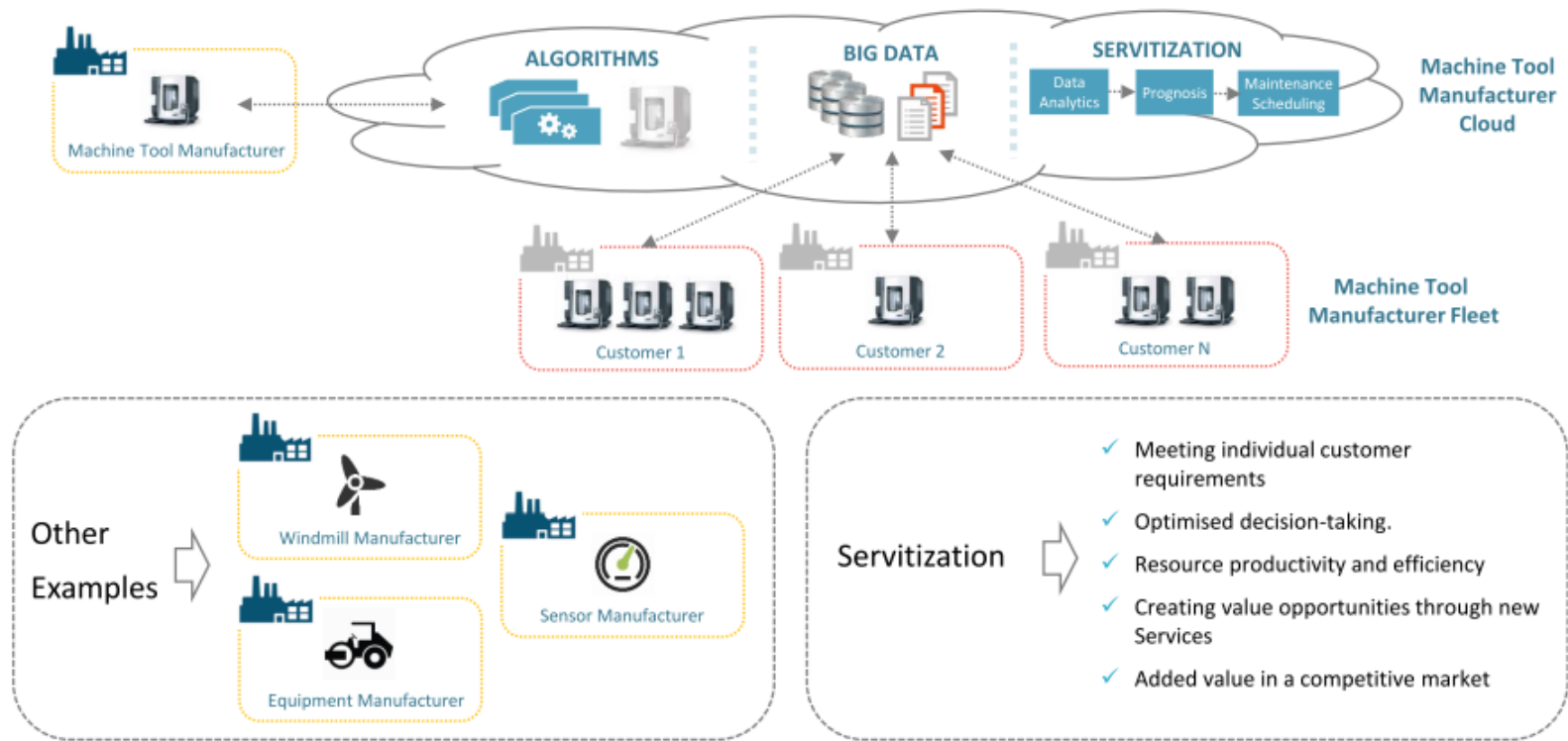
Monitoring

Supervising production

Interdisciplinary

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Servitization



References and Bibliography

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