

UK5G Manufacturing Sector event 30th October 2018

Purpose: Hosted at the Warwick Manufacturing Group (part of the HVM Catapult) on the University of Warwick Coventry campus the purpose of the day was to bring together manufacturing sector expertise and the UK5G community to i) learn of the DCMS 'sector' approach, ii) gain some understanding of the characteristics of 5G and iii) consider collaboratively where manufacturing sector pain points are and where these may be addressed through 5G.

Attendees: A short list of 38 external invitees (organisations shown at Annex A) drawn from manufacturing sectors and the UK5G community joined around a dozen internal participants from DCMS, UK5G and Catapults for the workshop.

Proceedings: Onur Eren, High Value Manufacturing Catapult, welcomed as hosts; Jon Kingsbury, UK5G, gave an overview of the day and also presented a deck supplied by Nissan UK (registered but unable to attend) showing where 5G characteristics mapped to automotive manufacturing challenges; Claire Caminade, Digital Catapult, highlighted some examples of where 5G has been demonstrated in manufacturing; Phil Saw, DCMS, set out the 5G Testbeds & Trials sector approach.

Workshop elements: Participants were asked to work with people they did not know, informally arranging into eight pseudo-randomised groups:

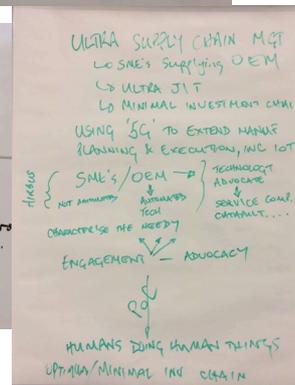
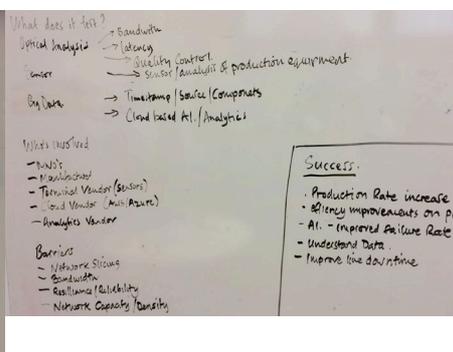
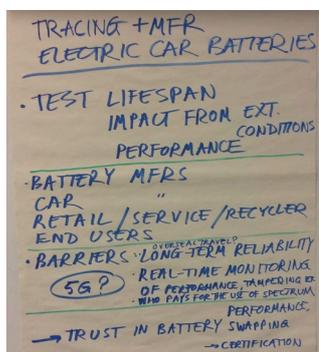
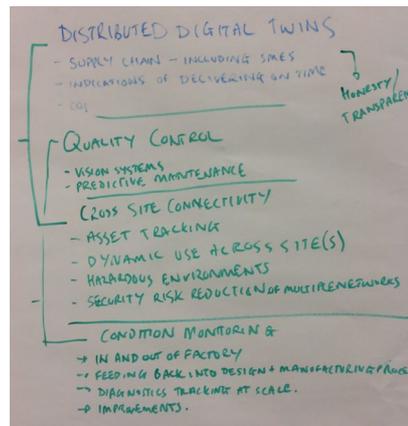
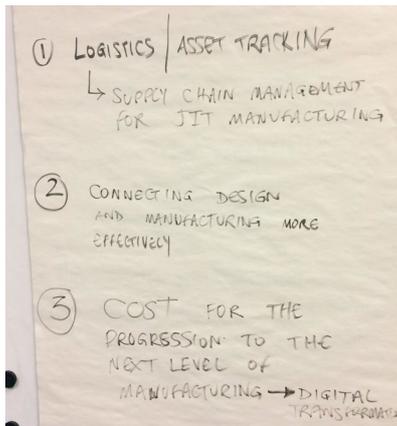


In the pre-lunch session they were invited to consider where manufacturing processes bottlenecks or pain points occur; post-lunch they were asked to consider where 5G may make a difference and what a demonstrator project could entail.

Workshop outputs: The key manufacturing challenge to emerge was extended supply chain management including aspects of asset traceability and transparency/integrity between entities. A second main theme was the management of and value extraction from increasing volumes of data (given the rise of vision systems) and associated issues of security and relevance. The costs of digital transformation also featured.

It was thought that 5G may bring benefits by enabling:

- 'ultra' supply chain management with optimized 'just in time' operating and minimized investment costs. This would require an IoT enabled SME supply chain integrating with a highly automated OEM, such as Airbus.
- the operation of 'distributed digital twins' across a supply chain for optimization but also use of data for quality control and extending into market for condition-based monitoring and feedback into design/processes.
- massive use of vision system sensing during manufacture to generate big data feeding cloud-based AI systems for quality control and predictive maintenance.
- a specific EV battery maintenance/recycling ecosystem.
- enhanced health & safety monitoring with AR assistance, use of real time big data to enable 'zero defects'.
- vertical supply chain integration with scale and precision to obtain 'zero defects'.



The workshop concluded with an overview of the Digital Catapult's role in the DCMS sectoral approach (Dritan Kaleshi) and an exhortation to keep connected with UK5G (Jon Kingsbury) for updates on the Testbeds & Trials programme.

ANNEX A - external invitees

ADS Group Ltd
Athonet
Atkins, Intelligent Mobility and Smart Technologies
Babcock International
Birmingham City University
Black Country Consortium Ltd.
Centre for Process Innovation
CGI UK IT LTD
Cube
EE / BT
Feraru Dynamics
FTI Communication Systems Ltd
GTL Europe
Kx
MediaTek
Nissan Motor Manufacturing UK
Ordnance Survey
Oxford Technical Solutions Ltd
Paremus
PWL
QinetiQ
Real Wireless
Spirent
Swann Engineering Group Ltd
The Manufacturing Technology Centre
The University of Liverpool
Total Control Pro
u-blox
UK Broadband
University of Strathclyde

University of Warwick
University of Wolverhampton
Vesta Smart Packaging
Vislink
West Midlands 5G and Worcestershire 5G
WLEP
WMG
Worcestershire County Council