



# Simon Barnes

Commercial Director  
HSSMI

## *Sponsors*



IHS Markit



Johnson Matthey  
Inspiring science, enhancing life

trueform

Collaborate. Innovate. Deploy. >>>>

## Digital Readiness Level For LCV 2017

## Challenges

Increased global competition, amalgamation, regulation, and expectation

Drive to reduce energy usage and waste materials

Demand for ever more differentiation = Reduced batch sizes and more flexible manufacturing

Manufacturing systems becoming more complex = Cost increases, versus Constant pressure to reduce development, BOM, and manufacturing time & cost

Manufacturing  
is changing  
faster than ever!

Manufacturing

## Opportunities

Large-scale disruption of supply-chains, business models, customer demands, and value-chains...

Opens the door to new players and a global redistribution of the industry

New technologies bring new sectors into engagement with manufacturing


Pressure for step-change in reducing time & cost means industry is open for radical ideas

# Creating Value



 Technology Readiness Levels (TRL)

1 PRINCIPLES 2 APPLICATION 3 EXPERIMENT 4 VALIDATION 5 PERFORMANCE 6 PROTOTYPE 7 TEST 8 DEMONSTRATE 9 LAUNCH

 Manufacturing Readiness Levels (MRL)

1 PROCESS 2 MATERIALS 3 TECHNOLOGY 4 CONCEPT 5 TOOLS 6 COSTS 7 SKILLS 8 PILOT 9 PRODUCE

 Supply Chain Readiness Levels (SCRL)

1 BASIC SUPPLIER LINK 2 TRC RELATIONSHIP 3 PERFORMANCE 4 ALIGN SYSTEMS 5 ASSET SHARING 6 DATA EXCHANGE 7 KNOWLEDGE ALLIANCE 8 TECHNOLOGY INTEGRATION 9 COLLABORATION REAL-TIME

 Digital Readiness Levels (DRL) trade mark HSSMI

1 DATA CAPTURE 2 PLATFORM STANDARDS 3 SINGLE SOURCE OF TRUTH 4 COMPREHENSIVE SENSING 5 DIGITAL REPRESENTATION PEOPLE/ASSETS 6 ADV. ANALYTICS SUPPLIER INTEGRATION 7 NEW SKILLS VE AR ALGORITHM 8 BUSINESS STRUCTURE 9 PRE-EMPTIVE DECISION MARKING



## Digital Readiness Level (DRL) – developed by

- HSSMI
- DETC
- HVM Catapults
- Digital Catapult
- The Manufacturer Magazine
- IET
- Innovate UK
- Cranfield University
- Gambica

This is a collaborative approach – to address an industry need



## DRL – the Objectives (1 to 4)

1. Create a clear language and communication platform for digital discussion
2. Support resilience of manufacturing sector through the process of change – move digital from the what toward the how
3. Express the business benefits of new technologies and processes
4. Illustrate new business opportunities through digitalisation

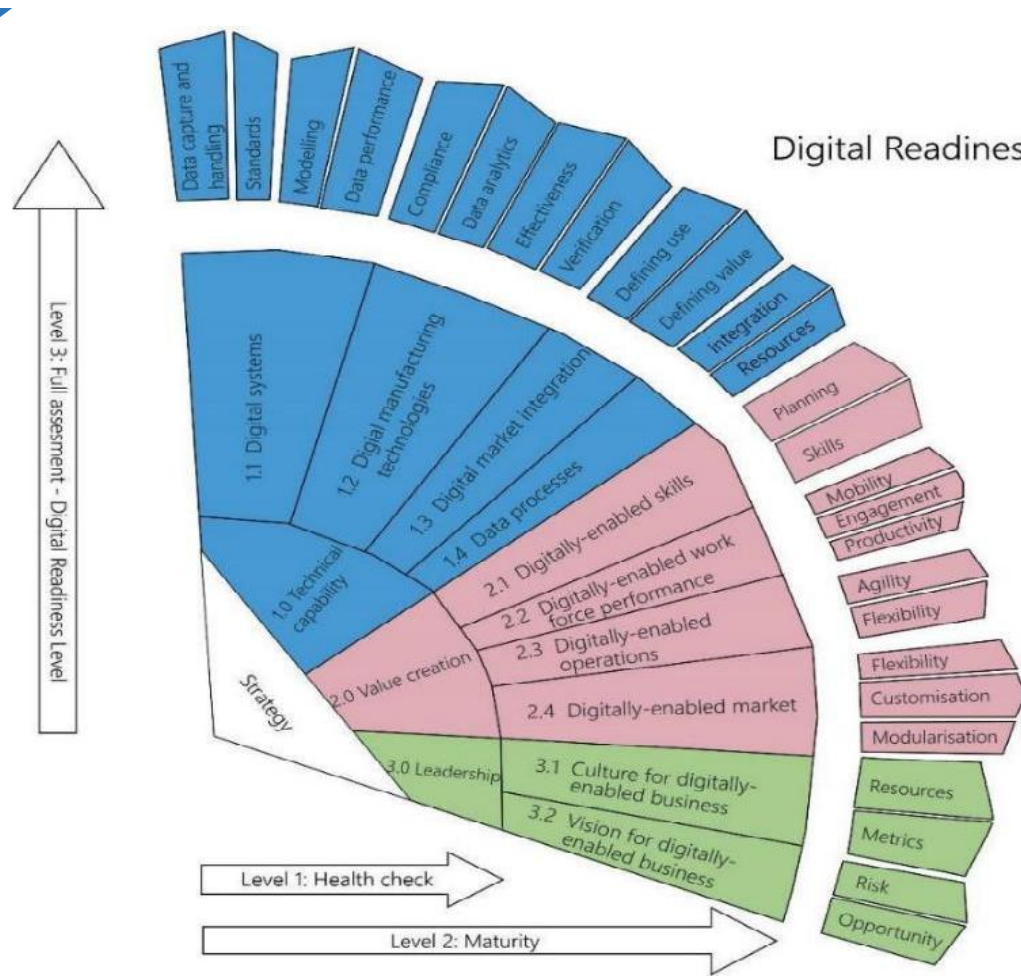


## DRL – the Objectives (5 to 7)

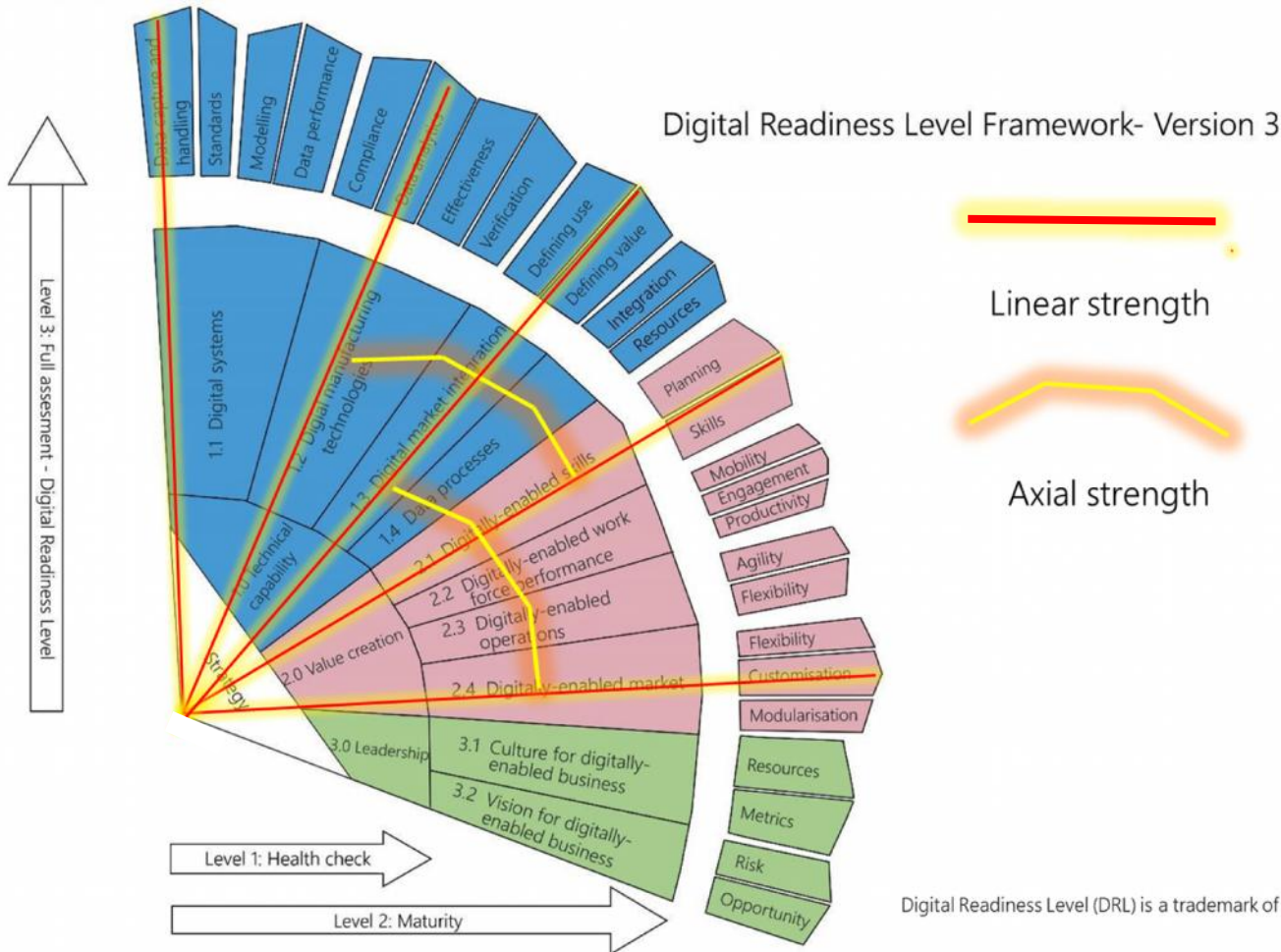
5. Highlight areas of weakness and enable a planning platform for improvement
6. Enable an assessment of impact of driving digital improvement
7. Provide a reference point for investors and external stakeholders

In summary to develop a digital thread throughout business – term used by McKinsey

## Digital Readiness Level Framework- Version 3







Digital Readiness Level Framework- Version 3

Linear strength

Axial strength

Digital Readiness Level (DRL) is a trademark of HSSMI



Technology	Digital systems
Technology	Digital manufacturing technologies
Technology	Integration with your suppliers, customers and partners
Technology	Business processes aligned with your business objectives
Value	Employees' contribution
Value	Employees' enabled to perform
Value	Operating model
Value	Interaction with customers, suppliers and partners
Leadership	Organisational culture
Leadership	Vision for your organisation



LEVEL 2	LEVEL 2 SCOPE	LEVEL 3 SCOPE AND QUESTIONS <i>With examples of best practice</i>	CAPABILITY 1 (weak) to 5 (strong)				
<b>1.3 Digital market integration</b>	To what extent are your digital systems and technologies <b>integrated with your suppliers, customers and partners</b> to support your business objectives?	1.4.1 Are you able to <u>work with other organisations</u> such as suppliers, customers and partners to ensure effective integration of digital systems, technologies and processes? <i>Eg: Are you developing 'cloud-based' or similar data technology sharing systems with your suppliers, customers and partners?</i>					
		1.4.2 Are you able to <u>identify activities</u> that are critical to <u>digital integration</u> with other organisations? <i>Eg: As part of your regular business process review do you identify digital benefits and require other organisations to comply or are you led by your customers/suppliers to adopt them. Are you seeking out integration providers?</i>					
		1.4.3 Are you able to <u>identify the technologies</u> that are needed to enable <u>digital integration</u> with other organisations? <i>Eg: Do you task your IT team to identify technologies and report with business cases at regular development meetings or do you rely on third parties to "sell" to you suitable systems – lead or be led?</i>					
		1.4.4 Are you able to identify <u>key resources and capabilities</u> required for <u>digital integration</u> with other organisations? <i>Eg: Your IT department is able to identify missing capabilities and then train or recruit suitable candidates or do you rely on third party support on a contract basis?</i>					
		1.4.5 Are you able to identify the <u>cost structure and potential</u> revenue streams from <u>digital integration</u> with other organisations? <i>Eg: Do you have a business review team that identifies digital business solutions and ranks them using a cost benefit analysis or do you implement reactively?</i>					
		1.4.6 Are you able to evaluate and <u>manage risks</u> associated with <u>digital integration</u> with other organisations? <i>Eg: Do you complete risk analysis and business recovery solution against each new digital process?</i>					
		1.4.7 Can you identify a policy for <u>defining the ownership of data</u> amongst interest groups relevant to your organisation?					



## DRL – next stage of development

- Verify the model questions with businesses
- Build the model in a digital format – September October 2017
- Launch the model – November 2017 – Innovate UK
- Secure funding for the model development
- Ensure the model reaches its maximum potential



[simon.barnes@hssmi.org](mailto:simon.barnes@hssmi.org)



**cenex**