



Inspiring Great British Manufacturing

Report Title: *An opportunity to develop the UK supply base of the NHS*

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Executive Summary / 60 Second Summary

An opportunity to develop the UK supply base of the NHS

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A research study “The Health and Life Sciences sector in the Midland Engine: Developing and supporting manufacturing capacity”, was commissioned by the Midlands Engine and was carried out by a consortium led by the MTC.

This research study identified the key company capabilities that allow businesses to transform their operations and repurpose their capabilities to successfully enter the healthcare sector and competitively deliver innovative products and services. The results of this research identified the key capabilities that enable general manufacturing companies to repurpose their capabilities to manufacture products for the healthcare sector.

The study engaged with 14 companies, at CEO and MD levels, and industrial feedback was collected via the structured Supply Chain Readiness Assessment (SCRA) methodology of the MTC, suitably expanded to include Repurposing. The results clearly identified three clusters of business capabilities that characterise successful healthcare sector entry and competitive new product development via repurposing of business knowledge and assets. These clusters are:

- a. Agility, Transformation and Long-Term Planning
- b. Customer Focus, Sector Knowledge and Networking
- c. Innovation, Technology and Skills

The results of this study describe the goals for strategic capability development for the integration of general manufacturers into the healthcare supply chain. The presented insights demonstrate that strategic capability development can unlock the opportunity to significantly expand the UK supply base of the NHS through targeted capability development of UK manufacturers. Integration of additional UK manufactures into the NHS supply chain enables the creation of a stronger, dependable and more innovative domestic supply chain and reduces the risk of exposure to disruptions of global supply chains. In addition, this offers opportunities for reshoring production capabilities and enhancing the UK export potential, plus making it easier to develop green manufacturing and supply chain practices.

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1 Introduction

This research study identified the key company capabilities that allowed businesses to transform their operations and repurpose their capabilities to successfully enter the UK healthcare sector and deliver innovative products and services during the Covid-19 pandemic. The call to action by the NHS catalysed successful local manufacture of healthcare consumables and service provision by companies who repurposed their capabilities and developed these for the manufacture of healthcare products. This study worked with 14 Midlands-based manufacturers to identify the key capabilities that provided companies with the agility and ability to transform their business operations to deliver goods and services into the NHS/healthcare sector. The results of this study exemplify the capabilities that companies required to take advantage of local manufacturing opportunities offered by the NHS/healthcare sector.

1.1 Background

Significant growth opportunities are offered to the UK economy through the repurposing of manufacturing capability into new sectors. For example, healthcare consumables can be manufactured locally by manufacturers from other sectors who repurposed their manufacturing capabilities to manufacture for the healthcare sector. A local purchasing strategy of the NHS, will increase the domestic demand for manufacturing capacity and offer the UK regions the opportunity to develop additional manufacturing capacity. Thus, local manufacture of healthcare consumables offers a significant opportunity for realising the levelling up strategy of the UK economy. In addition, the domestic supply chain will reduce the risk of exposure to global supply chains and make it easier to develop green manufacturing and supply practices. To transform into the healthcare sector, local companies from other sectors, require the agility and ability to change their business operations to repurpose their capabilities and deliver new goods and services.

1.2 Objectives

The objective of this study was to identify – via data obtained in the context of “the call to action by the NHS” during the pandemic – the key capabilities companies from other sectors required to repurpose their capabilities to provide goods and services to the healthcare sector / NHS. The call to action by the NHS offered companies from other sectors the opportunity to manufacture goods and provide services to the healthcare sector. Companies that successfully responded to this call of action are exemplars of the ability to transform and repurpose business operations. These companies exemplify the capabilities required to bolster the resilience of health sector supply chains and to take advantage of the levelling up strategy for the UK economy.

1.3 Design and methodology of the study

14 companies who responded to the call of action were recruited for this study, including eight companies that deployed a new product/service into the healthcare sector and six companies that did not deploy a new product/service, plus several manufacturing companies as a comparator group in the Midlands. The organisations were interviewed with the MTC-SCRA methodology, and the responses were analysed via 3 independent methodologies including, SCRA¹ data analysis, analysis of industry leader opinions, and text clustering of the interview narrative.

Methodology 1 - SCRA data analysis. For this study, the structured – MTC SCRA capability analysis tool was contextualised for repurposing and was deployed in the healthcare sector. The company capabilities relevant for healthcare repurposing were identified via 50 questions in structured, consultant lead interviews and scored in accordance with the four SCRA maturity levels.

Methodology 2 - Analysis of industry leader feedback. As part of the interviews, industry leaders were asked to select the top three capabilities (out of eight options) that according to their experience, are key to the repurposing of company capabilities into other sectors.

Methodology 3 - Analysis of the contextual interview narrative. A detailed text clustering analysis of the interview responses for repurposing was conducted and clustering of the text was identified that describes key capabilities that enable repurposing and the occurrence of similar concepts.

Integration of the research results from Methodologies 1, 2 and 3. Methodologies 1, 2 and 3 generated independently three results and perspectives and narratives that describe the key capabilities that enable repurposing. Finally, these 3 sets of results were rationally integrated. The integration and analysis showed that the 3 independent data analysis approaches generated very coherent results.

¹ The MTC developed the Supply Chain Readiness Assessment methodology as a modular assessment methodology to classify the operational capabilities of supply chain companies. The methodology is modular and can be extended to accommodate specific technical and business capability. For reference see [The Manufacturer](#).

2 Results

2.1 Methodology 1 - SCRA data analysis

The SCRA data for the healthcare group of companies was arranged into two cohorts (eight companies *who deployed repurposing* and six companies *who did not deploy*). For both cohorts, the average score for each SCRA thread/capability was calculated. Then, capabilities were identified that displayed a significant difference in the SCRA score between the deployed (green) and not deployed cohort (orange). The histogram bars in Figure 1 show in green the score achieved by companies who deployed and in orange the score of the not deployed companies. Thus the two colours of each bar portray a significantly different capability profile between deployed and not deployed companies with regards to the listed SCRA sub-threads/capabilities. Rational integration of the sub-threads leads to the definition of 3 capability clusters.

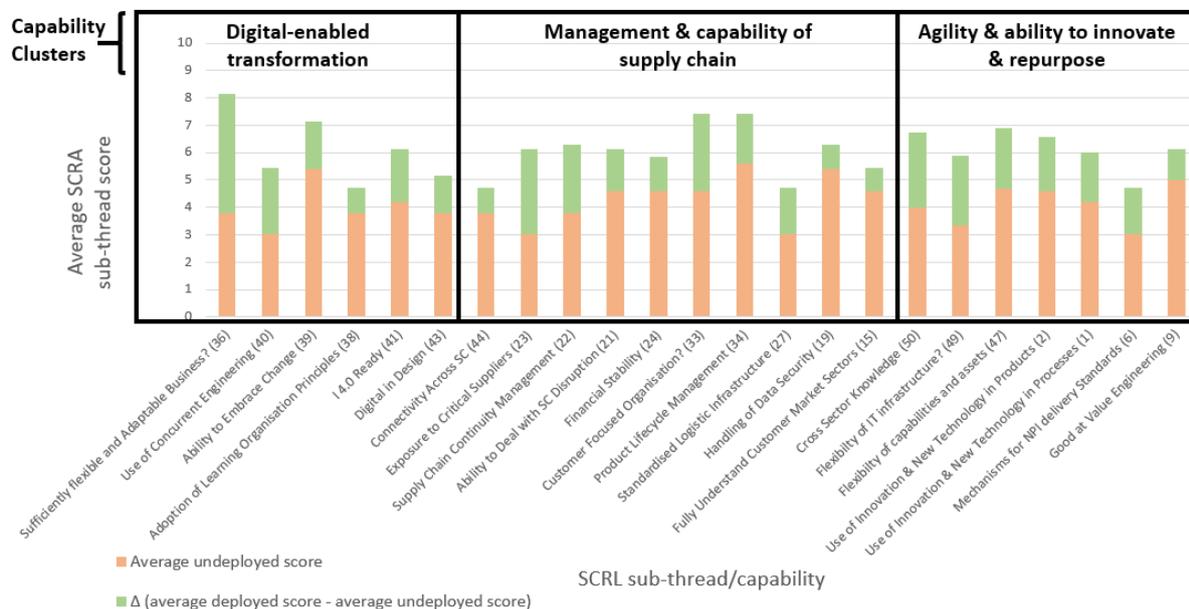


Figure 1: Histogram showing the relative capability difference for selected SCRA threads and integration of these into 3 capability clusters that enable repurposing into the medical sector.

2.2 Methodology 2 - Analysis of industry leader feedback

Industry leaders were asked to identify three out of the nine key capabilities that, in their opinion, were most impactful to successful repurposing / sector entry. The histogram in Figure 2 clearly shows the summary of the industry leaders' opinions on this matter, with the four most significant capabilities for repurposing receiving a substantial number of leaders' votes. This is a significant finding as it clearly shows a clear majority agreement of industry leaders regarding what business capabilities are significant for successful sector entry.

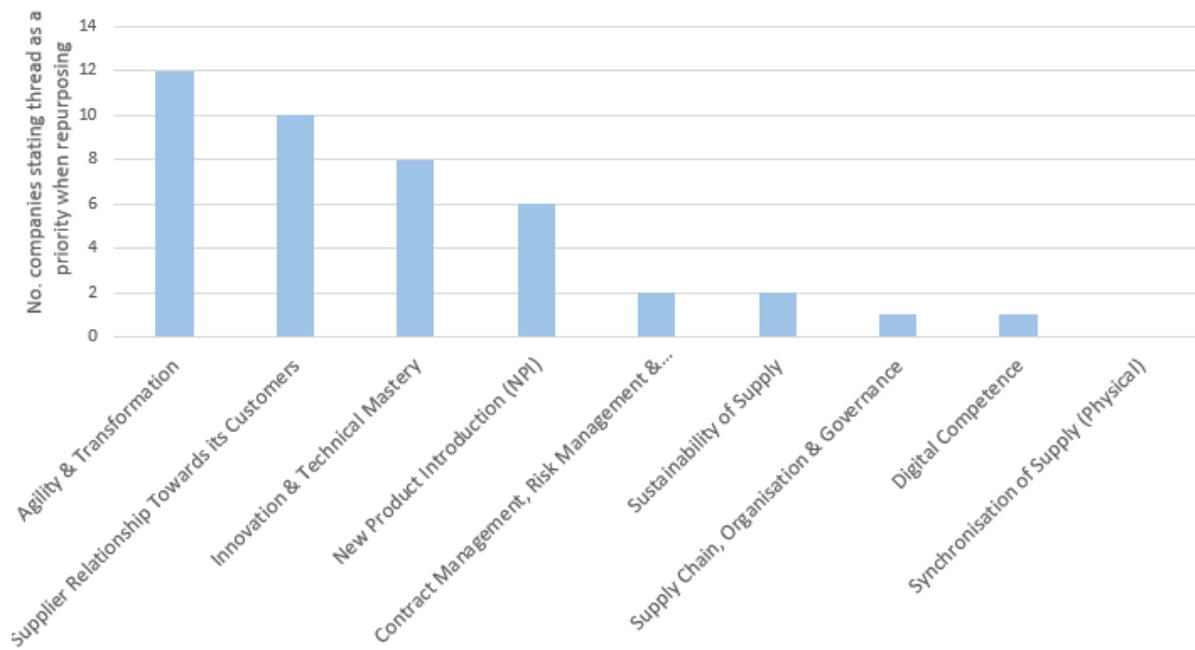


Figure 2: Histogram representing key repurposing capabilities according to the opinion of the industry leaders.

2.3 Methodology 3 - Analysis of the contextual interview narrative

Text clustering was performed on the company responses for the repurposing threads. The histogram bars in Figure 3 contrast the capability statements made by the companies who deployed (green) and not deployed (orange). The colour shading of the histogram bars illustrates a significantly different perception of capabilities that enable repurposing and product deployment into the healthcare sector. The responses of companies who deployed lead to the identification of capability clusters (see top headings) that describe the key capabilities for medical repurposing.

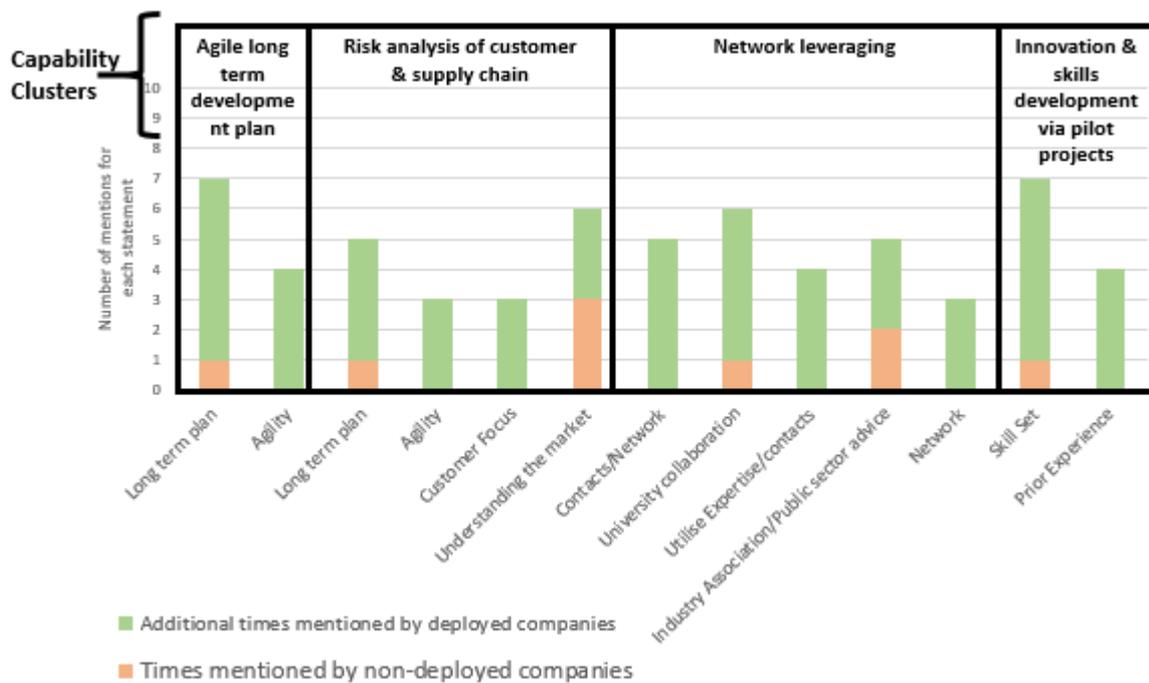


Figure 3: Histogram showing the contextual narrative of the SCRA repurposing discussion for industry leaders who successfully deployed

2.4 Integration of the research results from Methodology 1, 2 and 3

Rational integration of capability clusters identified by methods 1, 2 and 3 shows that the analysis results of all three methodologies are coherent. Figure 4 shows the rational integration approach.

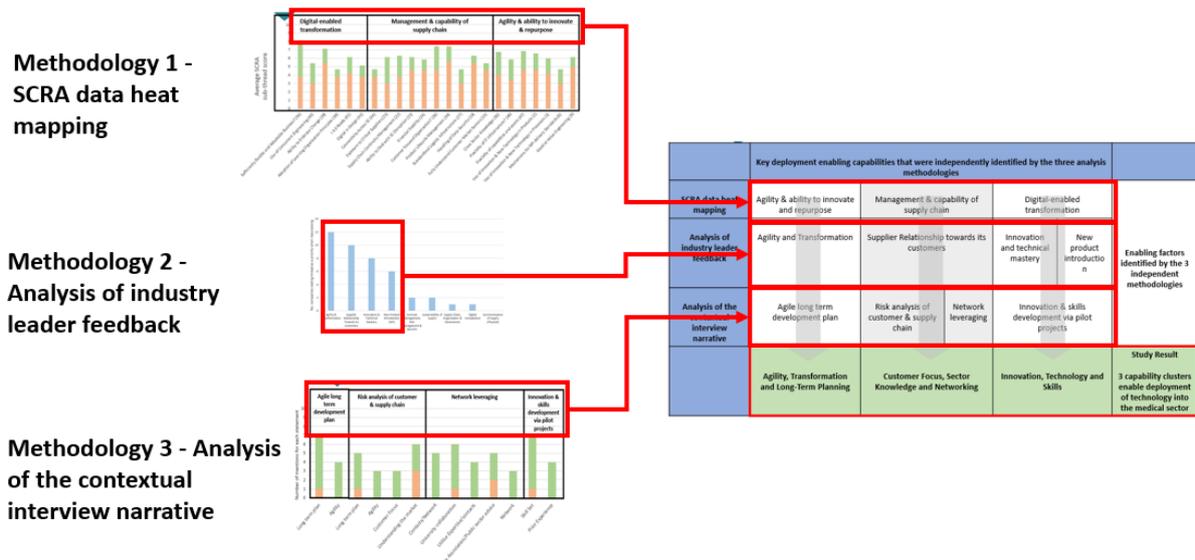


Figure 4: Flowchart that illustrates the integration of the of the capability clusters that were identified with methods 1, 2 and 3.

The Matrix in Figure 5 shows the integration of the capability clusters from methodologies 1, 2 and 3. The bottom row in Figure 5 (green) shows the 3 capabilities that enable the repurposing of manufacturing and service capabilities from other sectors into the healthcare sector. Each capability cluster is based on the integration of related capabilities that were previously identified in methodologies 1, 2 and 3.

	Key deployment enabling capabilities that were independently identified by the three analysis methodologies			
SCRA data heat mapping	Agility & ability to innovate and repurpose	Management & capability of supply chain	Digital-enabled transformation	Enabling factors identified by the 3 independent methodologies
Analysis of industry leader feedback	Agility and Transformation	Supplier Relationship towards its customers	Innovation and technical mastery New product introduction	
Analysis of the contextual interview narrative	Agile long term development plan	Risk analysis of customer & supply chain Network leveraging	Innovation & skills development via pilot projects	
	Agility, Transformation and Long-Term Planning	Customer Focus, Sector Knowledge and Networking	Innovation, Technology and Skills	Study Result 3 capability clusters enable deployment of technology into the medical sector

Figure 5: The three capabilities that enables repurposing of manufacturing & service capabilities from other sectors for the healthcare sector

3 Conclusions & Recommendations

This study shows that in order to repurpose manufacturing capabilities into the healthcare sector it is critical for a business to have a high level of capability in the following three areas:

- a) Agility, Transformation and Long-Term Planning
- b) Customer Focus, Sector Knowledge and Networking
- c) Innovation, Technology and Skills

The research study identified these capabilities as the key differentiators that provide companies with the agility and ability to transform their business operations. Hence, this study provides guidance for strategic capability development of UK PLC to repurpose manufacturing capabilities from other sectors for the local manufacture of new products such as healthcare consumables.

Further, the insights from this study provide a baseline understanding of the capabilities required to deliver goods and services to the NHS. A targeted capability development program for UK manufacturers is required to develop an opportunity to expand the UK supply base of the NHS and to strengthen the NHS's supply chain. The results of this study are summarised in 5 recommendations for the strategic development of general manufacturing companies to supply into NHS supply chain partners.

- **Recommendation 1: Develop Agility and Transformation Ability.** Agility is a broad and complex capability having aspects that require technological, digital and systems/supply chain competencies and responses. Development of these will strengthen the ability of companies to embark on business transformation programs.
- **Recommendation 2: Enhance the Management of Supply Chains.** Focus on the development of relevant skills. Key areas of focus would include skills development for key staff together with the introduction of methods for enhancing Customer-focus approaches, facilitating & learning from other sectors and leveraging knowledge and best practice from business networks.
- **Recommendation 3: Foster the Innovation Capacity and Technological Mastery.** The ability to rapidly industrialize innovation is mission-critical for the success of companies in the context of stiff global competition; this is especially important within supply chains, as a substantial proportion of value added is via supply chains and SMEs. Closely aligned to this are aspects of technological and digital capabilities and know-how that underpin new product introduction and allow companies to remain productive and competitive.
- **Recommendation 4: Provide guidance for supply chain learning and best practice.** Disseminate knowledge of supply chain best-practice and what makes a sector entry successful. Communicate knowledge of supply chain capability blockers and enablers as well as knowledge on how to balance opportunities and risks. Support companies to learn from other sectors and leverage knowledge and contacts from business networks.
- **Recommendation 5: Review and integration of NHS procurement policy.** Integrate NHS procurement with policies from the Department for Health and BEIS to ensure that manufacturing companies get consistent and coherent messages from Government. In particular, enhance the transparency of the NHS procurement process and requirements to lower the healthcare sector entry risk via a well-defined procurement and competition environment.

Strategic supply chain capability development based on these recommendations will bring significant benefits to the UK in terms of allowing the creation of a stronger, dependable and more innovative domestic supply chain for the NHS, reducing the risk of exposure to disruptions of global supply chains. In addition, it will offer opportunities for reshoring production capabilities and enhancing the UK's export potential, plus making it easier to develop green manufacturing and supply chain practices.

The Midlands Engine Observatory, the MTC and the consortium that delivered this study are keen to explore the follow-up actions identified in this research, by defining programmes that will enhance the capabilities identified as key to repurposing within the UK's manufacturing supply chain, in order to realise the significant growth opportunities for the UK economy through the repurposing of our manufacturing capabilities into the healthcare sector.

Version Control

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V1	27/03/2022	Thorsten Kampmann	Draft	Document created
V2	08/04/2022	Thorsten Kampmann	Draft	Response to client feedback
N.0			Issued	Document revised and issued

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Keywords

Insert some relevant keywords into the field below. This will allow your work to be easily located and referenced to benefit future MTC projects.

SCRA, repurposing, medical, manufacturing,