Inspiring Great British Manufacturing

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Prepared For: *Midlands Engine*

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Executive 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 deliver innovative products and services in a competitive manner. The results of this study provide the foundations to enhance UK supply base for the NHS and to reshore manufacturing. The study was led by the MTC, working together with the Universities of Birmingham and Warwick.

The study engaged with 14 companies, at CEO and MD level, and industrial feedback was collected via the structured Supply Chain Readiness Levels methodology of the MTC, suitably expanded to include Repurposing. The responses were analysed via three independent methodologies: SCRL data analysis; analysis of industry leader opinions; and text clustering of the interviews narrative.

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

These results provide the opportunity to significantly expand the UK supply base of the NHS through targeted capability development of UK manufactures to facilitate their entry into the healthcare sector and strengthen NHS's supply chain. This would 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 our export potential, plus making it easier to develop green manufacturing and supply chain practice.

The Midlands Observatory, the MTC and the consortium that delivered this study are keen to contribute regarding the identification of follow up actions from this research, to realise the significant growth opportunities for the UK economy through repurposing of our manufacturing capabilities into the healthcare sector.

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1 Introduction

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 deliver innovative products and services. The call to action by the NHS catalysed successful local manufacture of healthcare consumables and service provision by companies who repurposed the capabilities of their operation for development and manufacture of healthcare products. This study worked with 14 midlands based manufactures to identify the key capabilities that provide 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 companies require to take advantage from local manufacturing opportunities that are offered by the NHS/ healthcare sector.

1.1 Background

Significant growth opportunities are offered to the UK economy through repurposing of manufacturing capability into new sectors. For example, healthcare consumables, can be manufactured locally by manufactures 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, domestic supply chain will reduce the risk of exposure to global supply chains and make it easier to develop green manufacturing and supply practice. In order to transform into the healthcare sector, local companies from other sectors require the agility and ability to transform their business operation to repurpose their capabilities and deliver new goods and services for the NHS / healthcare sector.

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 require 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 who successfully responded to the call of action are exemplars for the ability to transform and repurpose business operations and thus these companies exemplify, the capabilities that are required from companies to take advantage of the levelling up strategy for the UK economy.

1.3 Design and methodology of the study

24 companies who responded to the call of action were recruited for this study, including 8 companies who deployed a new product/service into the healthcare sector and 6 companies who did not deploy a new product/service, plus a number of manufacturing companies as a comparator group in the Midlands. The organisations were interviewed with the MTC-SCRL methodology, and the responses were analysed via 3 independent methodologies including, SCRA data analysis, analysis of industry leader opinions, and text clustering of the of the interview narrative.

Methodology 1 - SCRA data analysis. For this study the structured – MTC SCRL capability analysis tool was contextualised for repurposing and was deployed into the healthcare sector. The company capabilities relevant for healthcare repurposing were identified via 50 questions in structured, consultant lead interviews and scored in accordance to the four SCRL 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 8 options) that according to their experience, are key to 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, clustering of text 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.

2 Results

2.1 Methodology 1 - SCRA data analysis

The SCRL data for the healthcare group of companies was arranged into 2 cohorts (8 companies who deployed repurposing, 6 companies who did not deploy). For both cohorts, the average score for each SCRL thread/capability was calculated. Then, capabilities were identified which displayed a significant difference in their SCRL score between the deployed and not deployed cohort. The histogram in Figure 1 shows the average SCRL sub-thread score for threads in which the deployed companies (green) scored significantly higher than the not deployed companies (orange). The histogram illustrates a significantly different capability profile between deployed and not deployed companies. Rational integration of the sub threads leads to the definition of 3 capability clusters.

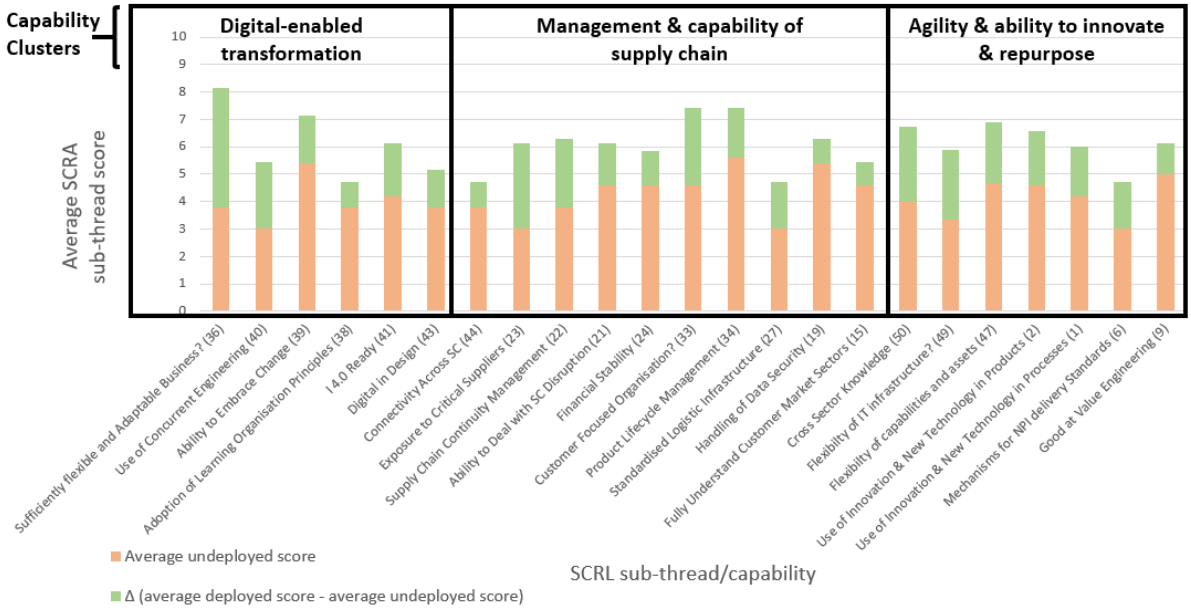

Figure 1: Histogram showing the relative capability difference for selected SCRL threads and integration of these into 3 capability clusters that enable repurposing into the medical sector.

2.2 Methodology 2 - Analysis of industry leader feedback

Industry leaders were asked to identify 3 out of the 9 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' opinion on this matter, with the 4 most significant capabilities for repurposing receiving 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.

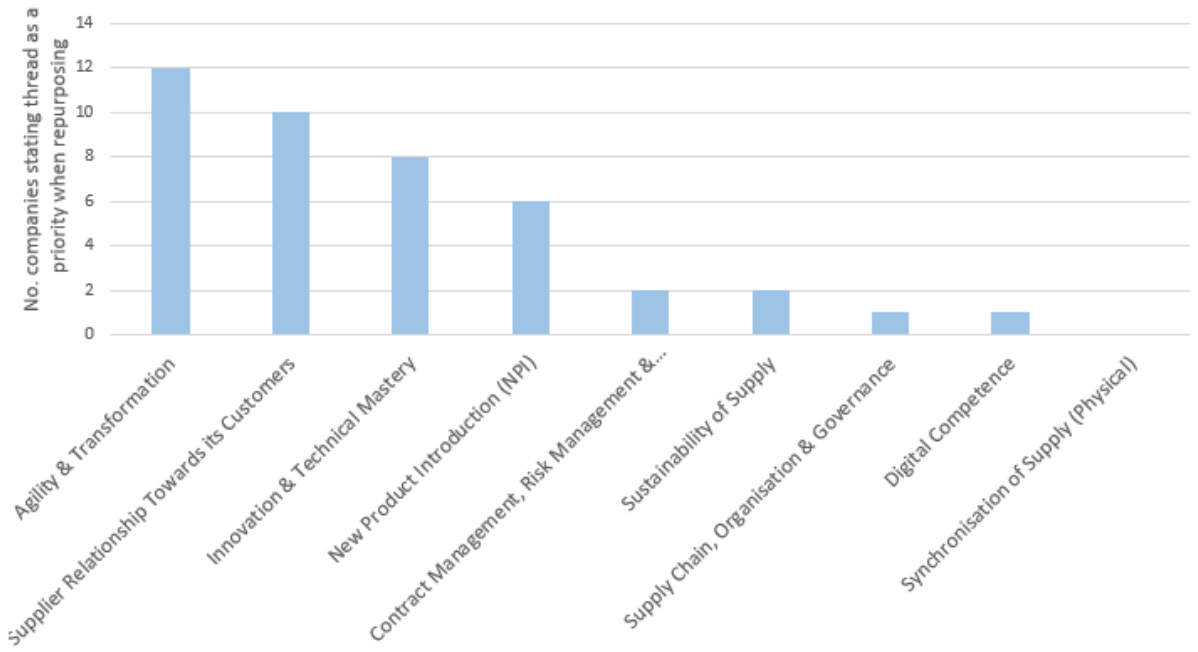

Figure 2: Histogram representing key repurposing capabilities according to the opinion of the industry leaders.

2.3 Methodology 3 - Analysis of the contextual interview narrative

Text clustering was performed of the company responses for the repurposing threads. The histogram in Figure 3 contrasts the capability statements made by the companies who deployed (green) and not deployed (orange). The histogram 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 identification of capability clusters (see top headings) that describe the key capabilities for medical repurposing.

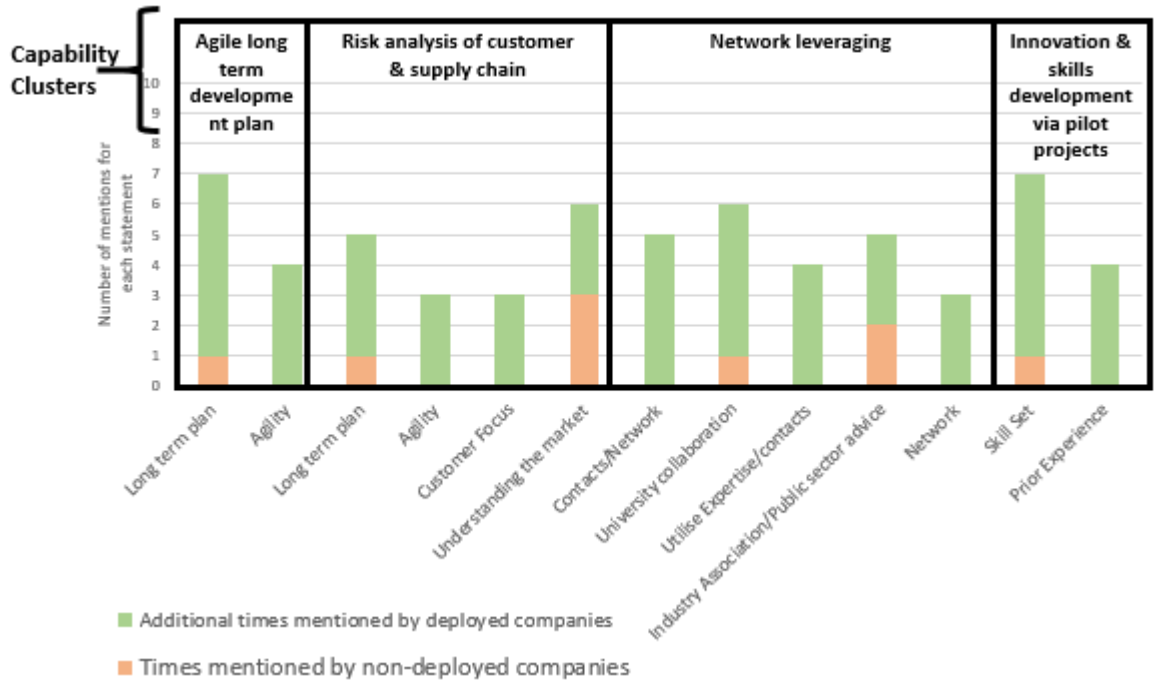

Figure 3: Histogram showing the contextual narrative of the SCRL repurposing discussion for industry leaders who successfully deployed

2.4 Integration of the research results from Methodology1, 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.

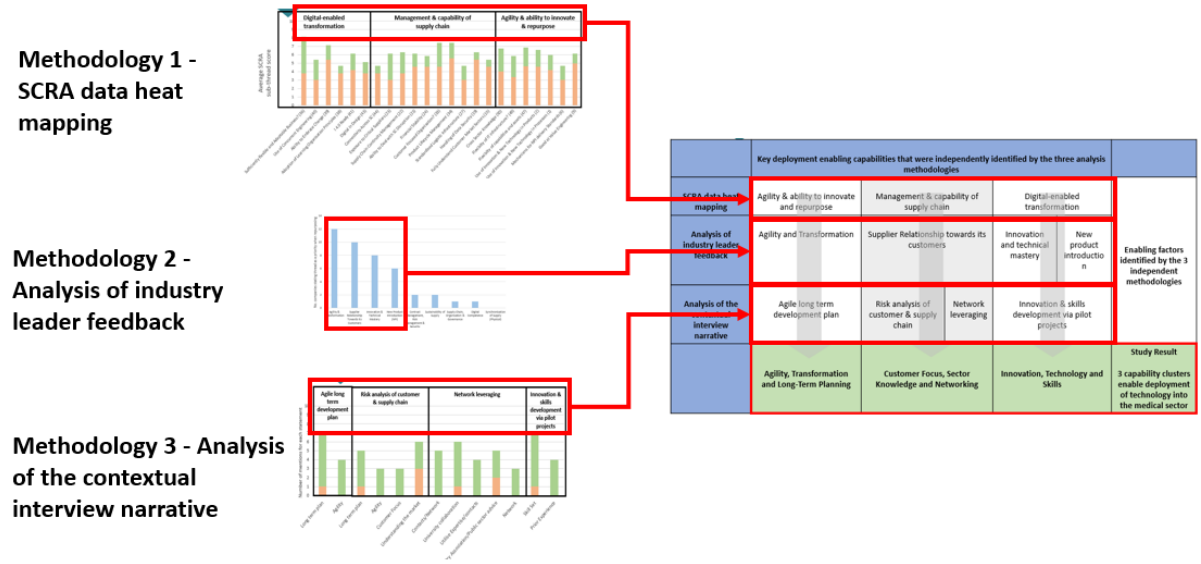

Figure 4: Flowchart that illustrates the integration of the of the capability clusters that were identified with methods 1, 2 and 3.

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 enables 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 my methodologies 1, 2 and 3.

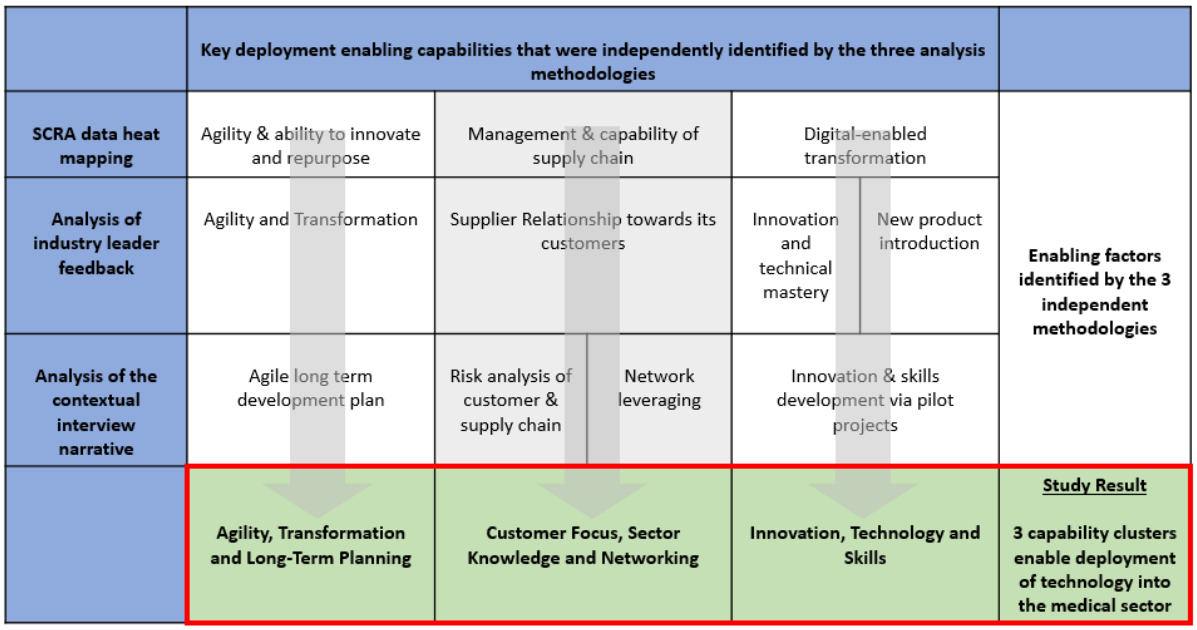

Figure 5: The three capabilities that enables repurposing of manufacturing & service capabilities from other sectors for the healthcare sector

3 Conclusions

This study shows that in order to repurpose its manufacturing capabilities in to the healthcare sector it is critical for a business to have a high level of capability in the following 3 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 the base line understanding of the capabilities required to deliver goods and services to the NHS. A targeted capability development program for UK manufactures, which focuses on the results of this study is required in order to offer the opportunity to expand the UK supply base of the NHS and to strengthen NHS's supply chain. This would 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 our export potential, plus making it easier to develop green manufacturing and supply chain practice.

The Midlands Observatory, the MTC and the consortium that delivered this study are keen to contribute regarding the identification of follow up actions from 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 repurposing of our manufacturing capabilities into the healthcare sector.

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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.

SCRL, repurposing, medical, manufacturing,