

LEP – Sub Committee

Skills and Employment Board

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Private and Confidential: No

Science and Innovation Audit – Progress Report.

(Appendix 'A' refers)

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Executive Summary

In May 2016, a joint bid from the LEP and Sheffield City Region to investigate potential impact of science resources on a Northern Powerhouse Advanced Manufacturing Corridor, was accepted as one of five national wave one Science and Innovation Audits.

Over the summer, a team led by Sheffield and Lancaster universities and supported by their respective LEP's have worked to develop an evidence base and to examine the hypothesis that all the major AEM sectors will face a similar challenge – characterised as *Industry 4.0* and to assess how well equipped local science and innovation assets are to support this change.

The report is of specific relevance to the Skills and Employment Board given the level of investment in science and innovation assets which has taken place using Growth Deal Skills Capital resource and because skills levels are repeatedly reported as a key factor underpinning the regional productivity gap.

Recommendation

That the report is noted.

Supporting Documents

1. Introduction

Science and Innovation Audits were announced by Jo Johnson, Minister of State for Universities and Science as part of the 2015 Autumn Statement. Whilst seen as a pilot, the motivation for SIA's was unambiguously to identify areas of world class science and innovation across both education and industry and harness these to drive productivity.



A Lancashire / Sheffield City Region (SCR) proposal to investigate the Advanced Manufacturing corridor which is anchored around these two LEP areas was accepted alongside four other submissions from Edinburgh and the Scottish Boarders, Manchester and Cheshire, South Wales and South West England and the Midlands Engine.

2. Process

Despite the differing geographies and sectoral focus of the five SIA's, each was asked to produce a final report to the same prescribed format. Each consortium was provided with an initial sweep of nationally published data, including headline economic indicators, innovation measures and skills attainment levels.

Technopolis, a specialist innovation consultancy were appointed by BIS to set the template for the SIA, to support consortia in sourcing an evidence base and as a critical friend in the development of the document. In addition to this the Lancs/SCR consortium commissioned SQW to augment the desk research with a range of high level industry and partner interviews and to firmly link the analysis to the emerging recommendations of the North Powerhouse Independent Economic Review.

3. Headline Analysis

The final document combines data analysis and qualitative 'deep dive' research to provide 'showcase examples' of business activity. This analysis suggests that the area has a range of distinctive strengths and capabilities as follows:-

- An ability to exploit new materials, processes & technologies across a broad range of niche sub-sectors
- Strengths in digital design, testing & specialised manufacturing techniques
- The ability to leverage links to other parts of the UK e.g. The Hartree Centre (augmented reality capabilities) – LCR, National Composites Centre – Bristol, Manufacturing Technology Centre – Coventry

The SIA analysis for the area was explicitly focused on the aerospace, nuclear, rail and med-tech sectors. The hypothesis that to remain competitive, all of these sectors would need to adopt the technologies described within the Industry 4.0 typology was used as the basis for examination, with future manufacturing being focused on making value, not just making things.



Figure 1 – Key Technologies – In use and emerging



The analysis summarised in figure 1 sets out the key technological capabilities that are emerging as priorities to drive continued productivity in these key manufacturing sectors. The main themes are around increased digitisation of production, an increased ability to customise products within a mass production environment.

There is a strong match here between some of the capabilities which the LEP and the Skills Board have supported through their skills capital programme e.g. the investment in virtual reality environments and additive manufacturing. Alongside this analysis of future technological need, the SIA also looked at the ability of local innovation assets and centres of excellence to respond and equip business with the expertise required.

The web diagram in Figure 2 compares each of the areas of technology development, with the areas of expertise within local universities. Whist REF results and citations are a limited proxy for the ability of technology providers to actually disseminate their knowledge, it does give some approximation of strengths and weaknesses.



Figure 2.



4. Conclusions and Recommendations

The SIA was submitted to BEIS in mid-September in draft form and we are awaiting further feedback.

The LEP will now build on this work to refresh the smart specialisation analysis of the Lancashire economy, to build a broader local innovation plan taking in other key sectors and innovation providers and to act on the recommendations of the SIA for new facilities, new services and to maximise the effectiveness of those that already exist.

The Skills Board is asked to note this report.