# Midlands Engine Quarterly Economic Briefing

**INSIGHTS**

On 20th March 2024, the Midlands Engine Observatory convened key stakeholders from across the region for an online Quarterly Economic Briefing (QEB) on the topic of technology and digitalisation, including AI, and our region's opportunities and challenges in this sector.

The Midlands is among the fastest-growing technology clusters in the UK, with globally-renowned universities and tech businesses.

The region attracts 29% of all Innovate UK spend (2020/21), and accounts for 25% of the UK's video game output through the 'Silicon Spa' cluster in Leamington Spa, which employs 37,000 people across 230 companies.

Key sectors such as Medtech and life sciences contribute £6bn in GVA to the regional economy, and there are opportunities for growth in areas such as e-health and diagnostic technology, robotics, pharmaceuticals and engineering biology.

The region has the potential to spearhead the net zero transition with its expertise in smart energy – potentially saving up to £70bn in the lead-up to 2050.

Against the backdrop of this regional opportunity, the event brought together keynote speakers including **Pim van Baarsen**, Chief Executive Officer at the Silverstone Technology Cluster (STC), and **Sarah Windrum**, Future Mobility Cluster Lead at Horiba Mira, who provided valuable insights into the current digital and innovation landscape. Their presentations set the stage for an informative panel discussion where they were joined by **Malcolm Barnes**, Director of Hollywood Gaming, and **Prof. Samir Dani**, Deputy Director of Keele Business School.

## Enabling a cross-sector ecosystem

Kicking off this Quarterly Economic Briefing, Pim van Baarsen and Sarah Windrum outlined the important roles of the Silverstone Technology Cluster and Horiba Mira.

The Silverstone Technology Cluster (STC) is a not-for-profit cluster support organisation formed by and for industry in 2017. The cluster has around 160 member businesses specialising in advanced engineering, electronic engineering and software, with a focus on research and development (R&D).

> *"This is the best place in the world for advanced engineering. It's quite a bold claim but, if you think about it, there's ten Formula 1 teams in the world of all different nationalities... eight of them have bases in this area and their whole supply chain is here."* **Pim van Baarsen, Chief Executive Officer, Silverstone Technology Cluster**

Horiba Mira is a global leader in transport R&D. The business is comprised of three distinct components – a vehicle engineering consultancy, test engineering services, and a technology park on the Leicestershire/ Warwickshire border. The organisation primarily operates within the new vehicle development space, as well as enabling technologies such as electrification, hydrogen and autonomous systems, facilitating their transition to market.

A common theme which emerged was enabling business growth and knowledge exchange, particularly when it comes to addressing the skills gap in engineering. STC is facilitating multiple schemes, including pooled apprenticeships, and inspiring the next generation of engineers in schools. Similarly, Horiba Mira works with higher and further education providers to train 17,000 delegates through its MIRA Technology Institute, as well as delivering the Mira Skills Academy, and establishing PhD partnerships in electromagnetic capability testing, vehicle testing and connected vehicles.

## Technology, digital and AI

### Opportunities

Panellists highlighted key regional opportunities arising from the digital revolution. Malcolm Barnes reflected that the best emerging opportunities for the region include artificial intelligence (AI) and augmented reality (AR), while urging caution that AI is not a silver bullet. AR technology can streamline training by allowing young people to experience technologies in a virtual environment. It also presents a golden opportunity to improve productivity, for example, by cutting down the number of prototypes needed, and thereby cutting down costs and emissions.

AI and AR technology can also speed up the engineering process by reducing computation time and speeding up simulation time. The real opportunity is an increase in efficiency, alongside the integration of digitalisation into traditionally non-digital sectors, like 3D printing. The inherent digital skills of young people further amplify this opportunity, offering unlimited growth potential in our talent pool.

> " We support business growth – we are a real enabler, supporting a number of tenants to that billion-dollar [unicorn] valuation.
>
> **Sarah Windrum, Future Mobility Cluster Lead, Horiba Mira**



**The QEB panel from L-R:**
Sarah Windrum
Pim van Baarsen
Prof. Samir Dani
Malcolm Barnes

> " It's all about collaboration. We can't all stay in our individual siloes and hope for the best. We need to collaborate and understand what we're all doing, together.
>
> **Pim van Baarsen, Chief Executive Officer, Silverstone Technology Cluster**

Yet, as highlighted by the panellists, while the next generation demonstrates innate adaptability, the UK faces a core skills challenge – particularly in mathematics, computing and practical application.

The Midlands has a key opportunity to lead the way in sectors we already excel in, such as Agri-tech, advanced manufacturing, fintech, logistics and net zero. However, to fully capitalise on these opportunities, the region must level up its ecosystem. This entails addressing critical challenges like digital infrastructure, the digital divide and sustainable energy solutions. By levelling up its digital capabilities and addressing infrastructure gaps, the Midlands can position itself at the forefront of innovation and economic growth.

> *"Our greatest opportunity is also our greatest challenge in the sense that, as a region, we have that broad range of applications, but that means that we're not going to be known for just one thing, which is often a much easier narrative to sell."*
>
> **Sarah Windrum, Future Mobility Cluster Lead, Horiba Mira**

> " The Midlands will become the testbed for infrastructure planning of the future.
>
> **Prof. Samir Dani, Deputy Director, Keele Business School**

### The cluster landscape

Discussing challenges facing the dynamic cluster landscape, partners emphasised on three crucial ingredients for cluster success: a collaborative spirit, robust investment, and clear and supportive policy frameworks developed alongside industry and government.
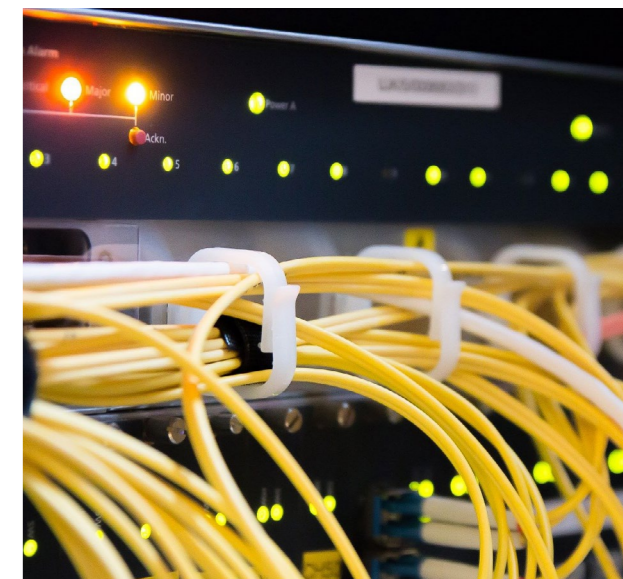
Panellists agreed that open collaboration is necessary to build a thriving business ecosystem and empower SMEs to work with larger companies. Central to this is a common talent pool. Speakers promoted the idea of a 'cluster of clusters' to facilitate cross-sectoral and cross-cluster collaboration. Clusters need to look outward to address common barriers, as there is a tendency for clusters to operate as closed-loop systems. There are already success stories of collaboration between cluster organisations – for example, Horiba Mira and Tyseley Energy Park have worked together on net zero solutions.

Med-tech clusters can similarly support defence and aerospace clusters, providing multi-sectoral solutions and creating new business opportunities.

Speakers agreed on a need for further investment. R&D is capital intensive, and SMEs and micro-businesses are unable to fund their own R&D, but engagement with policymakers doesn't aways translate into public funding. Speakers agreed that, while there is plenty of funding available, it isn't being channelled into commercialisation.

And, although the region excels in research, there's a notable deceleration when transitioning to development. This discrepancy underscores the need for strategic redirection of funding to bridge this gap and realise the region's full potential.

The final challenge identified by speakers was an insufficiently enabling policy landscape. This points to a need for innovators, policymakers and other relevant stakeholders to come together and co-design an industry-led roadmap to achieve the UK's 'science superpower' ambitions. It was suggested that, because technology is currently developing at a faster pace than policy, the lack of infrastructure is undermining market-readiness for some technologies. However, panellists stressed that this change needs to happen on a national scale through a phased approach to avoid disruption.

# MIDLANDS ENGINE



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## This has been a year of collaboration.
**Malcom Barnes**
**Director,**
**Hollywood Gaming**

## Skills

Panellists agreed that the greatest skills challenge was the availability of qualified staff, including attracting young people to engineering careers. The industry is facing a shortage of 173,000 engineers in the UK and every year there are 18,000 more engineers retiring than there are new ones entering the field.

On the point of digital skills, panellists acknowledged that university curricula are unable to keep pace with the rapid advancement of technology. At the same time, they questioned whether industry actually wants graduates with up-to-the-minute specialisations. It was suggested it would be more beneficial to industry if universities train 'generic engineers' with a range of relevant core competences, leaving industries to provide more specialised training, instead of specialising students too far at university, meaning that they need to be reskilled upon graduation. In the same vein, panellists stressed the importance of training teachers in new technologies, increasing the dialogue between industry and educators and developing a long-term outlook for education.

*"The skills piece is complicated in a CreaTech environment because the perfect person is somebody who's hybrid – not just a programmer or just a designer... it's very difficult for academia to deliver those types of people."* **Malcom Barnes, Director, Hollywood Gaming**

The importance of AI in driving productivity was acknowledged, but concerns were raised about AI being used as a shortcut for skills, potentially exaggerating skills shortages rather than solving them. However, Prof. Samir Dani offered the counterpoint that AI is encouraging and inspiring students to enter industries such as computer science or fintech, with many universities already offering modules on the effective use of AI via 'prompt engineering'. Digital tools can also now be used to enhance apprenticeships and short courses, increasing the population's core digital skills across the board. With data becoming more and more integral to our lives, helping people understand data better will boost their understanding of everything around them. Panellists agreed that the narrative around AI needs to change to look more at the positive possibilities.

## Looking to the future

The key message from this Quarterly Economic Briefing was one of hope. Panellists expressed their excitement for the seismic shifts taking place in the relationships between technology, industry and academia, creating opportunities which were previously non-existent. They also reflected on the potential for harnessing AI, space technologies, digital manufacturing and groundbreaking advancements in advanced manufacturing which have already enabled scientists to grow human tissue in zero-gravity conditions.