

# Understanding Strategic Workforce Planning Needs in Engineering and Manufacturing: *An Enginuity Report*

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## Skills at the heart of strategic workforce planning

The challenge of effective workforce development underpins the UK engineering and manufacturing sector at all levels, as operational efficiency and product and service development goals play out against a backdrop of environmental sustainability and technological innovation.

This study of workforce planning in engineering was funded by Innovate UK and conducted by Enginuity in partnership with Teesside University. It concludes that businesses of all sizes are faced with the challenge of organisational development in the context of immediate and longer-term changes affecting skills requirements.

Support for strategic workforce planning in the sector is in high demand as businesses continue to struggle to attract new talent, retain skilled colleagues, and build a workforce with a multifaceted and future-proofed skillset.

## Decade of change

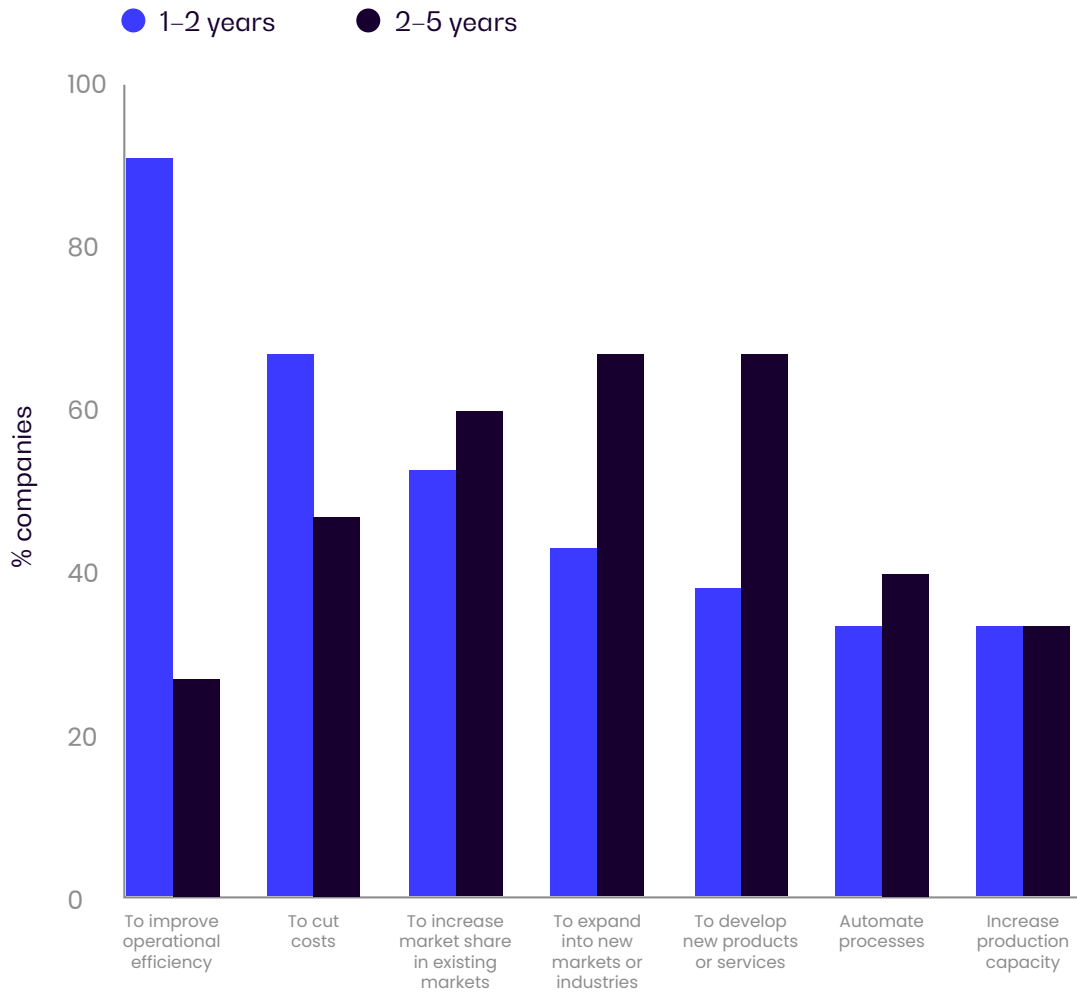
Over the last ten years, the UK engineering and manufacturing sector has been required to adapt with agility in order to effectively overcome external pressures generated by Brexit, the global pandemic, and the drive for Net Zero. The need to remain competitive has necessitated workforce development to ensure a pipeline of skilled individuals who can meet the sector's changing requirements.

## Business strategy in engineering and manufacturing

In our survey of engineering and manufacturing sector employers, we asked a combination of large businesses and SMEs about their key strategic goals (figure 1). These encompassed:

- Increasing operational efficiency to reduce costs
- Boosting product and service development to satisfy clients' needs
- Improving safety and quality standards
- Harnessing technological innovation
- Delivering environmental sustainability to meet customer demands

Figure 1: Main strategic goals



Medium-term strategic goals see large businesses prioritising operational efficiency and production capacity. SMEs are more focused on expanding into new markets and developing new products and services in the long term. For both, efficiency and cost cutting remain immediate priorities with a future focus on innovation and market expansion.

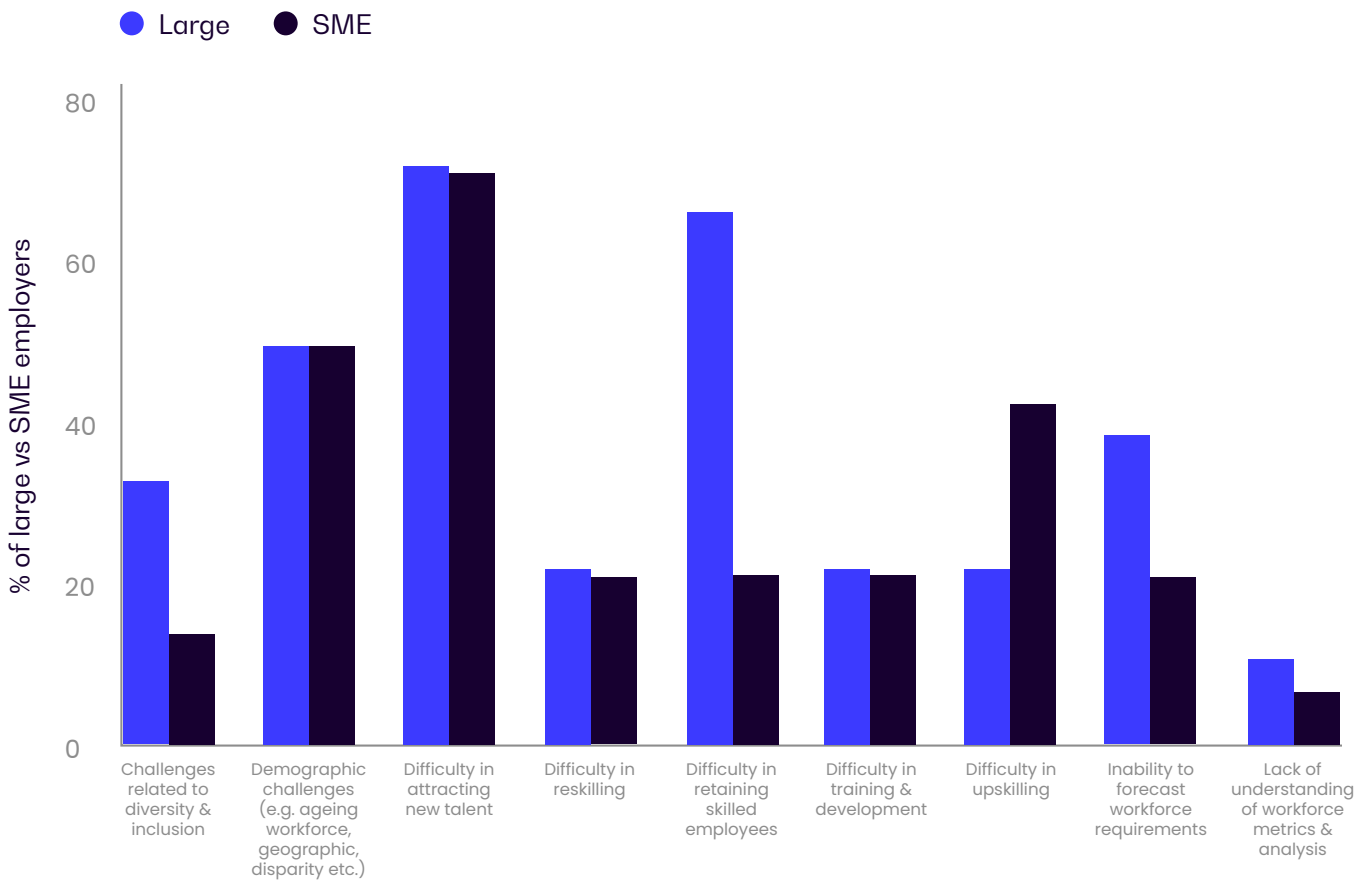
In the longer term, large organisations are more focused on technological advancements and geographical expansion while SMEs are turning to diversification and restructuring through subcontracting to boost their agility and responsiveness.

## The engineering and manufacturing workforce

Businesses of all sizes continue to report major challenges around the recruitment and retention of new talent to the workforce. As shown in Figure 2, large businesses are more likely to report difficulty in retaining the skilled individuals they need, while SMEs find upskilling and reskilling more challenging than their peers in larger organisations. This may be in part because SMEs are more vulnerable to associate difficulties such as:

- Rising costs
- Increased pay expectations
- Finding the right training provider

**Figure 2: Key challenges related to the engineering workforce**



## Policy and technology driving change

The most significant external, legal, and regulatory pressures affecting workforce development in the sector include:

- Inflation
- Taxation
- Employment law and regulation
- Immigration policy

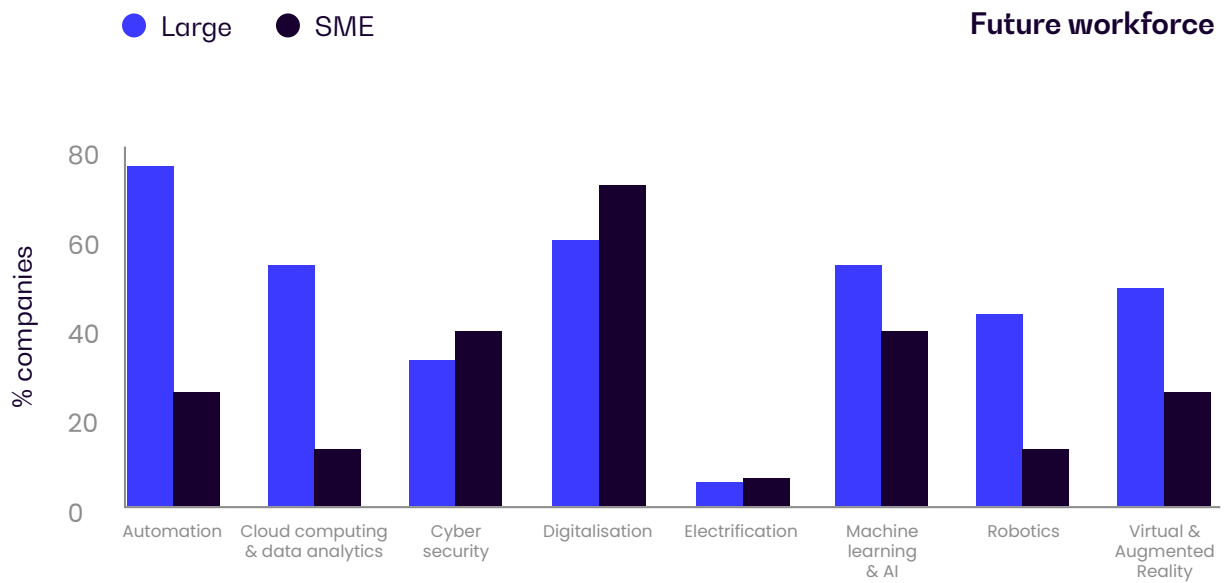
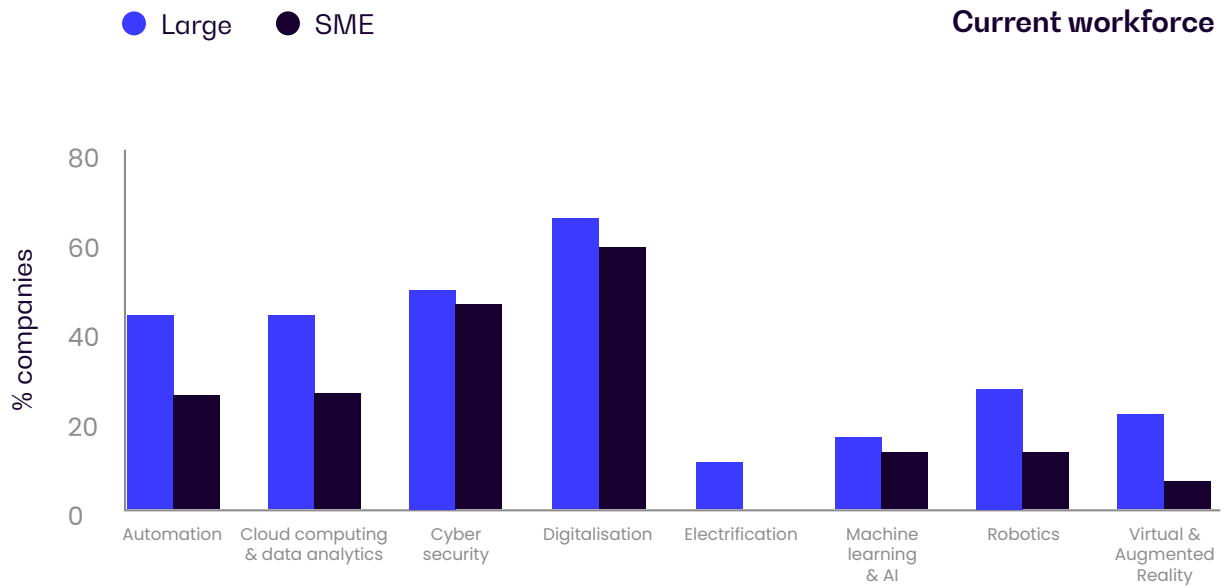
In Figure 3, we explore the technological factors affecting the current and future workforce, and show that digitalisation is viewed as a factor that will impact both SMEs and larger organisations now and in the future.

Technological advances shaping future workforce planning needs include:

- Digitalisation
- Cybersecurity
- Automation
- Electrification
- Sustainability
- AI and machine learning
- VR and augmented reality

As shown in Figure 3, large businesses are more likely to be focused on adapting to technological change more immediately, while SMEs tend to see this as a future challenge.

Figure 3: Technology factors cited as affecting the workforce

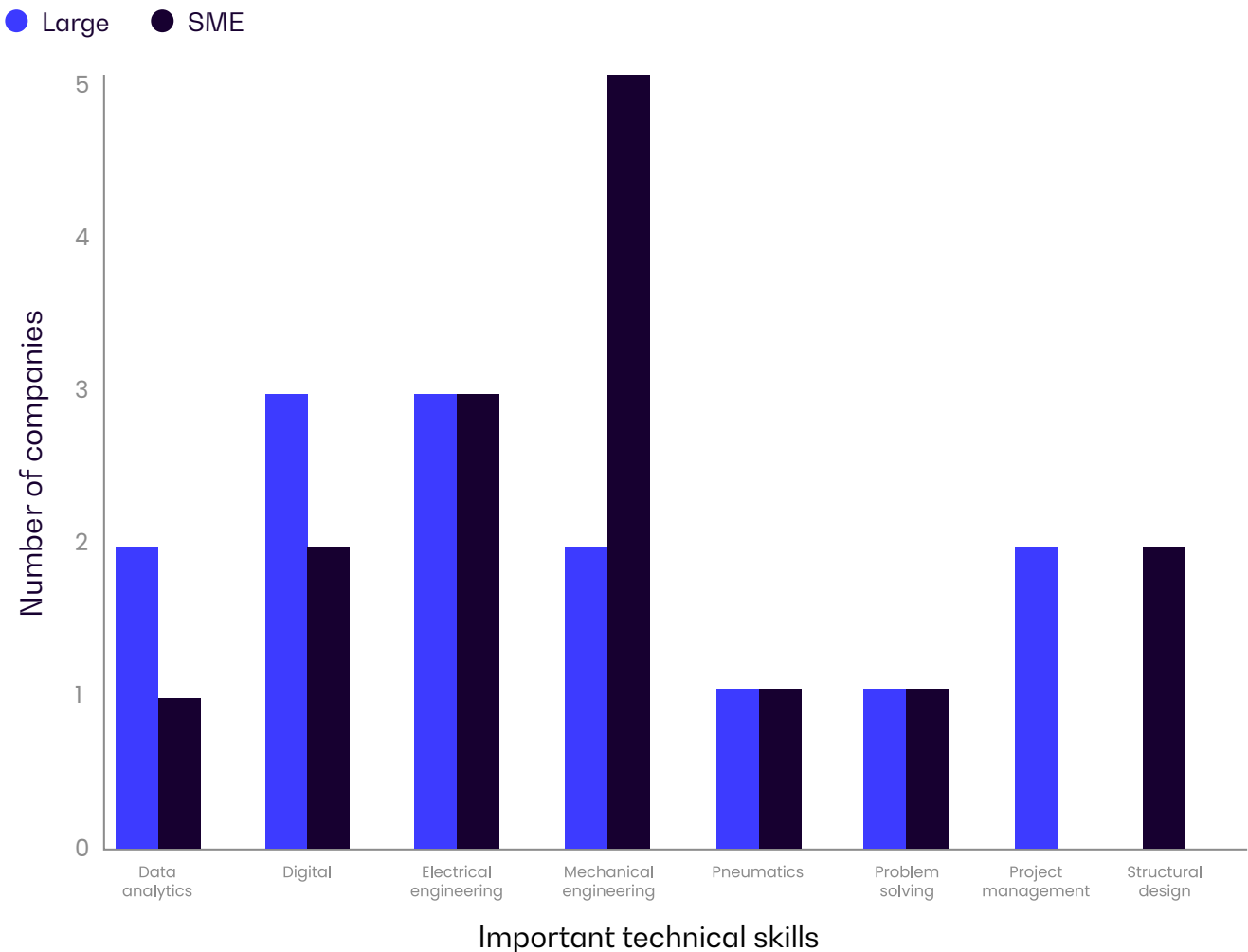


## Job roles and skills

Around half of all respondents said that they are experiencing job role changes within their organisations. The technical skills in highest demand include digitalisation, automation, electrification, and sustainability. Communication, collaboration, leadership, and sales expertise lead the requirement for soft, non-technical skills.

Large businesses experience greater demand for more highly skilled roles as the digital transformation takes effect, particularly in frontline maintenance, project engineering, and sales. SMEs increasingly depend on digital skills and advanced technology, as well as leadership and communication skills for technical staff and managers. Unsurprisingly, the skills in highest demand include digitalisation and automation, which aligns with the main technological changes we see impacting the sector.

**Figure 4: Key challenges related to the engineering workforce**

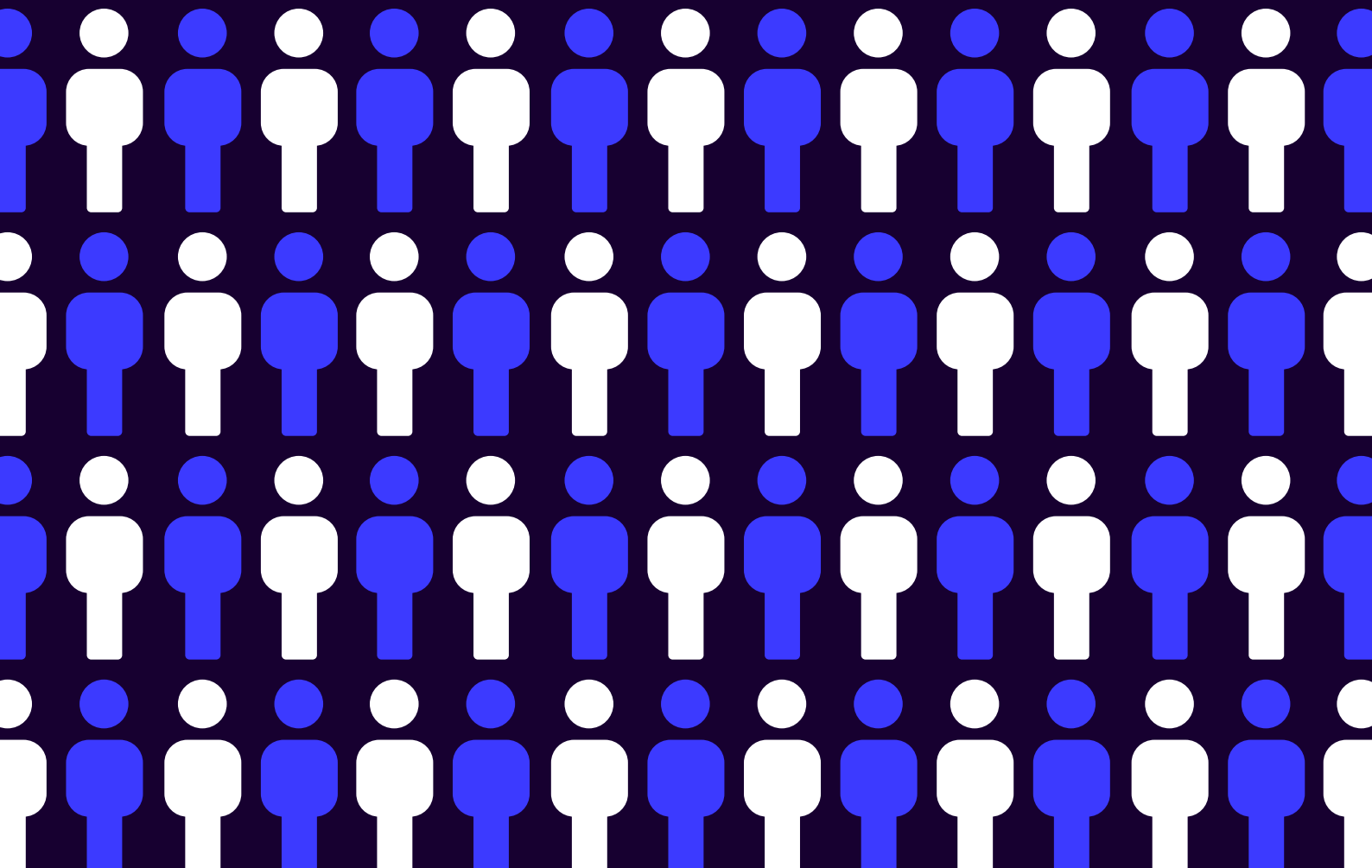


## Get involved

The ability of the UK engineering and manufacturing sector to fulfil its strategic ambitions in a competitive and fast-paced market will depend on its capacity to develop a future-ready workforce in the context of rapid change.

Enginuity is committed to helping support the sector through the development of strategic workforce planning tools. Businesses are invited to get involved and help to influence this work, and we would be delighted to hear from you.

[Get in touch.](#)







## About Enginuity

Enginuity is a charity dedicated to helping employers find new ways to close the skills gap.

We combine a unique approach to sector data with a deep understanding of skills challenges to help employers ensure the sector has a highly skilled, globally competitive workforce now and in the future.

