

EDITORIAL

A STRATEGY FOR A DIGITAL FUTURE



Dr Scott Steedman

The government's *Building our Industrial Strategy* Green Paper, published in January, highlights two great challenges for the UK that have hitherto defied solution. The first is low productivity and the second is geography. Not surprisingly, these two issues are linked.

Productivity is a measure of economic output compared to input. Higher productivity is a result of higher efficiency (better use of resources) or higher value in output (per worker, per hour). Comparisons from the OECD (Organisation for Economic Co-operation and Development) suggest that the UK as a whole is some 20% less productive per hour worked than the US, France or Germany, but that the 'productivity gap' is regional. Government data in the Green Paper show that in 2014 productivity in London was 72% above the national average, whereas productivity in Wales, the North East and Northern Ireland was at least 20% below the national average. Tackling the geographic challenge is clearly essential.

The Green Paper outlines a strategy that sets out to "deliver a high-skilled, competitive economy that benefits people throughout the UK". There is a focus on the role of

engineering in stimulating growth, and the importance of skills and technical education. The Green Paper promises investment in infrastructure and digital connectivity. What is missing, however, is the bigger picture. The Green Paper lacks an overarching vision of how the strategy will enable the UK to succeed in the rapidly emerging global digital economy.

A digital revolution, or digitisation, must be an important part of any vision of how the UK can tackle the challenges of productivity and regional disparity. At the World Economic Forum in 2013, digitisation was described as the mass adoption of connected digital services by consumers, enterprises and governments. Digitisation has already swept through some industrial sectors (financial services, media) and will inevitably revolutionise others (healthcare, construction). Consumers have seen extraordinary benefits, from online bookings to social media and free communications. Digital platforms including Uber and eBay have challenged historic business models and brought new services to billions of people. The near zero cost of servicing new digital customers enables successful companies to grow at breathtaking pace.

Digitisation brings productivity gains through new business models, new ways of reaching the customer, more efficient production methods and, of course, new ways of connecting employees to their work. There are risks too. McKinsey Global Institute's *Digital America* report, published in 2015, describes the 'hollowing-out' of middle-skilled employment in developed countries, as automation and software replace production and administrative work.

The digital economy, underpinned by engineering and technology, will be transformational because of the revolution it brings in access to markets, both in the

ability to reach and connect with customers and the ability of people to offer their labour. Evidence from the McKinsey report shows that 97% of the companies in France that sell online export, compared with just 15% of SMEs without an online presence. Enabling companies to exploit digitisation means that they can readily reach new markets.

A bold and ambitious industrial strategy would tackle the linked issues of low productivity and regional diversity. The goal should be to promote digitisation and to build confidence in the value of investment in automation and production efficiencies in parallel with investment in online platforms aimed at new markets, innovative business models and connectivity with a widely distributed labour market.

None of this will be possible without the physical and digital infrastructure or the education and skills agenda promised in the Green Paper. Successive governments have talked of providing the physical infrastructure needed to create a 'northern powerhouse', and as the Green Paper puts it, to provide "development funding for major infrastructure upgrades". Providing digital infrastructure, intellectual as well as physical, is at least as important if we want to eliminate the UK's internal productivity gap.

Neither of these pillars alone can deliver the real benefits that digitisation could bring to the UK. The industrial strategy has the elements for success. What we need now is for the engineering profession to deploy its unique skills and to seize the opportunities to transform the economy through digitisation; not as a bolt-on enabler of other aspects of the national vision, but as a dominant force that drives innovation and enhances the UK's access to global markets.

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