

THE IMPORTANCE OF EMBRACING A NEW ERA FOR MANUFACTURING



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Manufacturing has certainly found itself the subject of ever increasing scrutiny and attention in recent months with a never ending stream of suggestions as to the solutions for developing this precious industry in the UK.

Manufacturing remains one of the key sectors with the capacity to enable the UK to achieve economic growth. Manufacturing still accounts for 12 per cent of our economy – and 75 per cent of all business R and D in the UK is in the manufacturing sector. Working with partners and businesses, since 2007 the Technology Strategy Board has invested more than £2.5bn in UK innovation, including around 200 collaborative R and D manufacturing projects involving almost 400 companies – 50 per cent of which are SMEs. It is important to remember that the reason the manufacturing sector needs to survive is not just because it is important in its own right, but because it supports many businesses and services within its supply chains.

As the industry adapts to a changing landscape, where emerging technologies will be the drivers of success, our role, as an organisation seeking to inspire the next generation of innovation, is to consider the most effective ways we can to deliver new technologies that

will place UK companies at the forefront of new markets.

The Technology Strategy Board helps companies seeking to break down the barriers to innovation through a number of different support mechanisms. We sit at a unique pivot point between research, academia and businesses and co-ordinate great ideas. If the UK is to realise its potential in high value manufacturing then continued Government support for R and D is vital.

The role of the Technology Strategy Board is to create impact beyond the initial R and D phase – it is about helping to *commercialise* the technology that has the potential to deliver new products, processes and services to UK industry that will ultimately be what defines our true success. Manufacturing is a perfect example of how scale changes can take many years to be introduced and filter down through different sectors. In the 1960s scientists and companies in the UK first realised the high potential of carbon fibres. It is only recently that we have started to see their wider application in commercial and civilian aircraft, recreational, industrial and transport markets.

In 1969 there was a House of Commons Select Committee enquiry into the ability of British industry to make the best of this scientific breakthrough. There was concern that this invention would be exploited more successfully overseas. Sadly, this was ultimately the case.

It is almost ironic that we face a similar exciting and world leading opportunity with the discovery of Graphene. This has become one of the hottest topics in the materials science arena since its discovery eight years ago. I speak for the majority in the manufacturing world when I urge us to do all we can, not just to develop the science base, but also to create the right environment to manufacture this material at scale, to ensure that it is cost effective, commercially viable and lives up to its potential. We need Graphene to build on the reputation that the UK has for a diverse, well managed and innovative range of products with international appeal.

One of the keys to manufacturing success in the UK is that good ideas and initiatives need to be effectively co-ordinated – cutting edge university R and D facilities are only an advantage if they can attract commercial customers and engage with innovative businesses. Along with my fellow colleagues at the Technology Strategy Board I spend a lot of time ‘cheerleading’ the UK’s innovation capabilities. We have to be bold about correcting negative perceptions that while the UK has moved away from labour intensive, mass production manufacturing, we have entered a bold and sophisticated new era where we are producing hi-tech products at the point of use disrupting traditional supply chains.

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In a report by Price Waterhouse Coopers in 2008 offering an outlook on how to create a sustainable UK manufacturing 'championing your industry' was one of the top five recommendations. 'Talk up your achievements and make sure the widest possible audience knows what you have done and what you can do...' this might sound like a simple marketing philosophy but it is critical – and not just for commercial reasons. The report highlighted that young people will not train for a career in engineering or manufacturing if they believe there is no future for them – and retaining the best young minds in the UK will be essential to attracting continued investment in UK companies.

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As an organisation we have learned not to underestimate the value of communicating and networking. Being the UK's main innovation agency is an important role and our input will have a positive impact on the companies we work with.

UK plc must be known and respected as a brand that represents quality, innovation and dynamism. We lead where others follow and identify the new materials and processes of the future. British manufacturing is starting to adapt to this new 'niche' genre – and is now being recognised for its specialists who have a track record of best practice in development and continuous improvement.

The way in which we use our intellectual and technological capability as a nation is also

changing. Many refer to this as the 'knowledge economy' but labels aside, for me this is the sense that services and manufacturing are truly starting to come together. The days when a single company developed a new product or service and brought it to market in a reasonable time scale are over. The UK's new and emerging industries are built around interdependent services and products, spanning many sectors, involving a range of skills and large and small companies. There is no simple or single recipe for success so collaboration takes on an increasingly important focus. This is where the UK can play to its strength by focusing on the areas where it has the skills, technology capability and experience. Being a leading

player in all sectors is not realistic but being a leader in selected chosen areas of expertise is the way forward.

In a report we recently commissioned by the Cambridge Institute for Manufacturing to look at the future of high value manufacturing we sought to pinpoint those areas where the UK has the best chance of economic success including low carbon technologies, integrated products and services and ICT. A full copy of the report can be accessed at: http://www.innovateuk.org/_assets/pdf/publications/TSB_ifM_HighValueManufacturing_T12-009%20FINAL.PDF

This report has consolidated our decision to open a Catapult Centre for high value manufacturing which has been operational since last autumn. Catapult Centres were

announced as a £200m investment programme by the Government in October 2010, and since then the Technology Strategy Board has been co-ordinating the key stakeholders to deliver these strategically important platforms that will take innovation forward in the UK.

Catapult Centres provide a network to support business in areas that will be economically significant for the UK. They will create a critical mass for business and research innovation by focusing on a specific technology and will be an integral part of the UK's innovation system, making a major long-term contribution to UK economic growth. Catapult Centres will allow businesses to access equipment and expertise that would otherwise be out of reach, as well as conducting their own in-house R&D. They will also help businesses access new funding streams and point them towards the potential of emerging technologies.

Catapult sectors complement and link with other programmes that the Technology Strategy Board manages to promote collaboration between universities and business, and drive innovation and find commercial opportunities for new technology and ideas.

One of our key aims is to shorten the journey between concept and commercialisation. We believe that the targeted focus of Catapults in areas like High Value Manufacturing will deliver tangible commercial opportunities out of Britain's world-class research base. We want the HVM catapult to play a key role in moving the UK's

HVM agenda forward.

An example of this is that through our High Value Manufacturing Catapult Centre there is an exciting opportunity to access strong synergy benefits. We have already identified three areas where the greatest potential for this lies – Applications of Plastic Electronics; Simulation and Modelling and Advanced Metrology – and already we have a number of collaborative Cross Centre Projects taking shape. As technology barriers continue to break down and we develop even more sophisticated and unconstrained manufacturing processes this will inevitably bring designers closer to the point of use or consumption and so create a greater understanding between these communities is critical.

As economies in China, India and Russia continue to attract opportunities away from the UK, timing has been of the essence for us as an organisation and we have moved quickly to implement measures that build on the feeling that things may be getting better at last. I referred to manufacturing as being one of the few sectors with the capacity to drive economic growth and we will continue to drive our efforts in this rebalancing of the economy – where we can attract both foreign and inward investment and export to the rest of the world. As demand for technological change and innovation drives the future economy, we have a central role to play in the recovery of the UK as a new powerhouse of global innovative manufacturing.

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