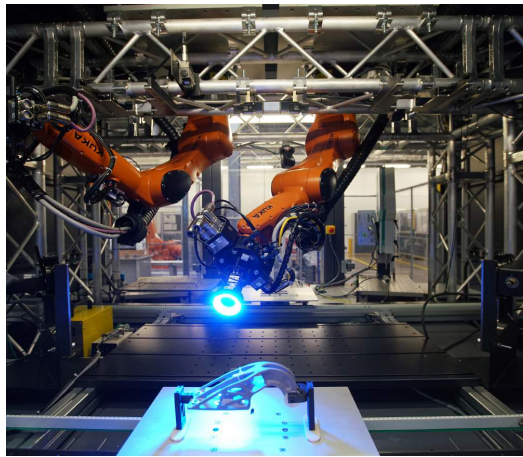


Guide for Small Businesses



Introduction from Adam Marshall

Manufacturing remains hugely important to the economy, creating thousands of jobs and accounting for a significant proportion of UK exports around the world.

I have the privilege of representing thousands of manufacturing firms, of all sizes, in towns and cities all across the UK. Many of these companies are at the top of their game, selling fantastic products into global supply chains and to customers all around the world. Some are amongst the UK's most reliable companies when it comes to investment and training, ploughing their profits back into their firms year after year.

Despite these positives, manufacturers – together with other businesses – are facing uncertainty generated by international trade disputes, Brexit, and slowing UK economic growth. Many companies report significant difficulties when it comes to forecasting demand, future-proofing their operations, and taking the big investment decisions needed in order to step-change their growth potential.

UK manufacturers face competition from emerging markets, potential disruption in access to current customers and suppliers, and the increasing drumbeat of protectionism in a number of key markets around the world.

Too often we see firms put a brake on their ambitions due to concern around political or economic factors at home and abroad, or because of operational issues such as cash-flow, access to finance, or the availability of skills. For the UK to succeed and prosper in the future, we need to build the best possible environment for business growth – which in turn will encourage far greater numbers of firms to take a risk and enter the innovation game.

Now, more than ever, let's grab hold of new opportunities and show the world what our dynamic and diverse businesses have to offer.

So, how in this environment do businesses respond to new economic realities and challenges?

To keep pace with international competition, UK manufacturers need to be offering the right products at the right quality, price and time. With technology evolving all the time, to succeed our businesses need to be harnessing these new developments to maximise productivity, and utilise pioneering processes and materials to work faster and smarter.

This can seem a daunting task for many businesses, particularly for some at the smaller end of the scale. Investing in change involves both risk and costs that some companies are ill-prepared to undertake.

That's why the work of the Catapult centres is so important in helping businesses bridge the gap between concept and commercialisation. They support manufacturers to turn great ideas into reality by providing access to expertise and experience, which otherwise might be out of their reach. We are pleased to work with the High Value Manufacturing Catapult to link firms of all sizes to knowledge, facilities and skills that help them make that crucial leap forward.

Now is the time to showcase the quality and reputation of UK manufacturing to the world – and to ensure that today's manufacturers can flourish in tomorrow's uncertain world. I hope as many businesses as possible take advantage of the support offered by the Catapult centres – as well as Chambers of Commerce and other partners across the country – to innovate, invest and grow.



A handwritten signature in black ink that reads 'Adam Marshall.' The signature is written in a cursive, slightly slanted style.

Dr Adam Marshall
Director General,
British Chambers of
Commerce



The UK has an outstanding track-record of generating good ideas and innovations but too often we fail to turn those great ideas into commercial products in the UK, and the benefits are either lost or picked up by our overseas competitors.

The High Value Manufacturing (HVM) Catapult is here to help UK businesses of all sizes accelerate these new ideas to a commercial reality. Working through seven world-class centres of industrial innovation, HVM Catapult provides access to the specialist equipment and expertise you need to help investigate new technologies and processes and test their applications. We can also help you to improve existing processes. We're here to help you strip away the risks of innovation and hold off making investment decisions until you are confident that an idea can be scaled up to deliver on a commercial scale.



What is the High Value Manufacturing Catapult?

Our offer is available to firms of all shapes and sizes, from FTSE-listed companies to Small and Medium Enterprises (SMEs) deep in the supply chain. It includes:

- Capability which spans from basic raw materials through to high integrity product assembly processes
- World-class facilities and skills to scale-up and prove high value manufacturing processes
- A network of leading suppliers who contribute to key UK industry supply chains
- A partnership between industry, government and research in a shared goal to make the UK an attractive place to invest in manufacturing



How could we help your business?

Our ambition is to grow your business and in so doing the contribution of the manufacturing sector to the UK economy. The seven centres that make up the HVM Catapult Network offer a range of services geared to achieving that ambition, from seminars and workshops to help you understand and use new technologies, to bespoke project support to help you translate great ideas from the page to the production line. The companies we assist could be of any size but will need help either to conduct research into a new technology, scale-up new products and processes to prove they are ready, or to overcome current manufacturing problems

We don't have strict criteria to determine who is eligible for our help, but the companies best suited to our support will be:

Innovative

Want to work on innovation projects that require new manufacturing solutions that are not (yet) generally available?

Growing

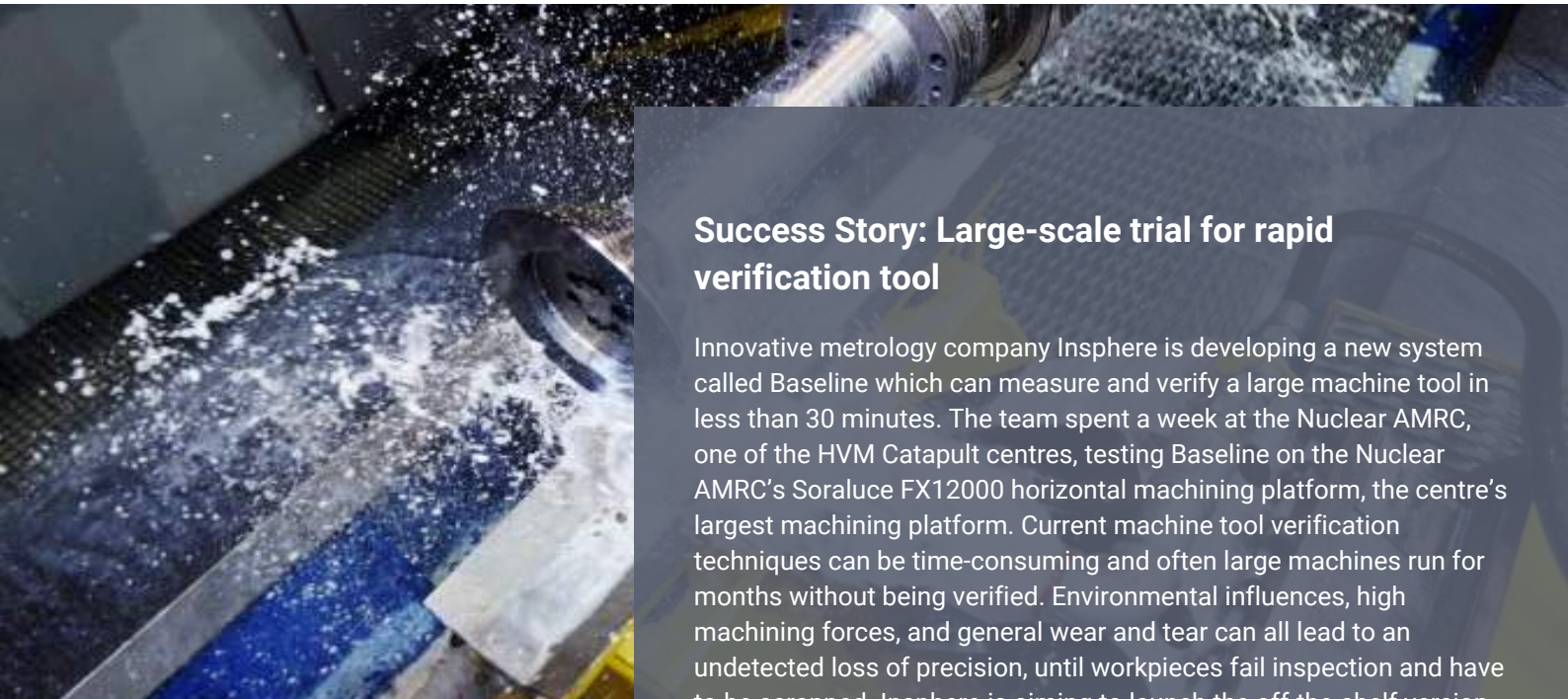
Have the potential to generate jobs and growth in your business and beyond

Proposition

Have a well developed concept or a prototype that proves the principles involved in the solution

Resources

Have the technical/business resources including both time and money to commit to a project



Success Story: Large-scale trial for rapid verification tool

Innovative metrology company Insphere is developing a new system called Baseline which can measure and verify a large machine tool in less than 30 minutes. The team spent a week at the Nuclear AMRC, one of the HVM Catapult centres, testing Baseline on the Nuclear AMRC's Soraluze FX12000 horizontal machining platform, the centre's largest machining platform. Current machine tool verification techniques can be time-consuming and often large machines run for months without being verified. Environmental influences, high machining forces, and general wear and tear can all lead to an undetected loss of precision, until workpieces fail inspection and have to be scrapped. Insphere is aiming to launch the off-the-shelf version of Baseline in early 2019. Ben Adeline, Chief Executive of Insphere, sees the biggest market in the aerospace sector, for companies making large high-value components such as fan casings and large gear components, but the technology could improve productivity across other large-scale high-precision engineering sectors.

How do we work?

At the HVM Catapult, we're keen to help SMEs realise their full business potential.

Our seven centres offer many ways to help businesses, including: early-stage development, access to equipment, toolkits, collaborative R&D with a consortium and more. These activities are aimed at SMEs that want to improve their productivity, reduce costs, develop new products or processes and de-risk the use of technology.

The tricky part can be knowing which of the seven centres to get in touch with. By getting in touch with the HVM Catapult central team at info@hvm.catapult.org.uk we can direct you to the right centre for you.

By providing a no obligation introductory meeting and talking companies through their requirements and the possible technology solutions, both the centre and the company can assess scope for future collaboration.

Success Story: Pascoe Engineering and the AFRC

Recent research into the manufacture of medical devices, in particular cranial brain implants, prompted our Scotland-based centre, the Advanced Forming Research Centre (AFRC), to approach SME Pascoe with a view to helping them enter this new market using their existing skills and knowledge despite having little experience in the medical sector.

To meet the challenge of manufacturing the implants quicker, a new way of stretching titanium sheets to fit individual needs without causing serious damage to the material had to be developed. To achieve this, the AFRC and Pascoe Engineering used a technique called incremental sheet forming, which turns the metal sheet into the final workpiece through a series of small deformations. This approach significantly reduced the cost per piece and increased turnaround time.

With help from the AFRC, Pascoe Engineering has developed a way of providing a faster, higher quality method of manufacturing titanium cranial implants, opening up an entire new market to the business and potentially improving patient outcomes.



Our capabilities

Through our seven centres the HVM Catapult offers technology innovation and scale-up capabilities across the spectrum of process and discrete manufacturing industries. Our 27 key technologies include:



Advanced Assembly



Automation



Biologics



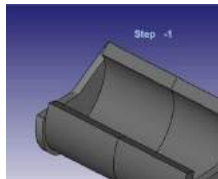
Biotechnology



Casting



Composites



Design



Digital Manufacturing



Electronics



Flexible Manufacturing



Formulation



High Temperature Processing



Joining



Machining



Manufacturing with Polymers



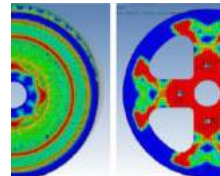
Materials Characterisation



Metal Forming and Forging



Metrology



Modelling and Simulation



Net Shape and Additive Manufacturing



Powder Technology



Power and Energy Storage



Resource Efficient and Sustainable Manufacturing



Printable Electronics



Surface Engineering



Tooling and Fixtures



Visualisation and Virtual Reality

How to access our services

Review the questions below to see whether we could work together

Do you want to work on an innovation project that requires new manufacturing solutions that are not (yet) generally available?

Does your project have strong potential to generate jobs and growth in your business and beyond?

Do you have a prototype or other material that proves the principles involved in the solution but needs development?

Do you have the technical/business resources with time available to commit to a project?

Do you have plans to finance your contribution to a project if it were started?

Do you own – or have right of access to – any Intellectual Property required to start the project?

If you were able to answer yes to all or most of the questions above, then our offer could help you address the innovation challenge you are facing.



How much does our help cost?

There are no charges for an exploratory conversation or a meeting to discuss your ideas and the support you think you need. Should significant work be required to understand/develop your ideas this would be a chargeable service and only proceed with your formal agreement. However, the Catapult team will be able to guide you to potential sources of funding that may offset some of the costs for the work we'd be doing for you. Your Catapult contact will be able to explain all this to you in much more detail when you speak.

Success Story: Tradition and innovation combine for growth

Pashley Cycles is England's longest established bicycle manufacturer. Although a traditional brand, Pashley realised that to continue to grow and develop they must innovate. They had two challenges, the first was the ability to apply decorative finishes and bespoke imagery to metal and plastic parts for limited edition products. The second was around developing the customer experience associated with their high profile brand across their distributor network, sales process, website and social media presence.

WMG SME group has expertise in both materials technology and user insights so they were set to support Pashley Cycles with their exciting plans. So far, a number of new ideas have arisen that Pashley can start to work on to build on the experiences that their potential customers have when buying a cycle. New opportunities have been identified which could significantly grow Pashley's customer and distributor base. Through the work, five jobs have been safeguarded in the business.

"It is an enthusiastic and professional support that a company like ours needs, and we have received this from the WMG SME Team. The WMG SME Group has worked with thousands of SMEs over the past 10 years to help them address technology challenges, exploit new market opportunities and gain a competitive advantage.



Finance

The HVM Catapult does not offer financial incentives such as loans or grants, but if you want to develop an innovative product, process or service, you may be able to apply for support through Innovate UK – the UK's Innovation agency.

Four examples of funding opportunities available to companies that would like to work with us are:

The impact accelerator account

Provides funding for the concepts, technologies and methodologies developed at the AFRC and elsewhere within the university to be introduced into industry and embedded within companies to make an economic impact.

Collaborative research and development

Funds are available from Innovate UK (formerly Technology Strategy Board). They range from feasibility studies, valued from around £10k up to £250k, through to multi-million pound programmes of work with many partners.

REACH programme

For every day of support an SME invests in an eligible project, the REACH programme will fund another day. The MTC offers a complimentary full day review/line walk to manufacturers. This can identify opportunities for cost saving, de-risking and accelerating the introduction of technology and improved processes into your business.

Knowledge transfer partnerships

A recent graduate is recruited to work on a particular project with a company. The project should lead to an improvement for the business either through increasing competitiveness, productivity levels or performance.

FAQS

Where do I start and how do I get in contact with the HVM Catapult?

If you're not sure where to start, get in touch through info@hvm.catapult.org.uk or call us on **+44 (0)1564 711540**. Our central team will connect you with the best centre to help with your needs.

How much will working with the HVM Catapult cost my business?

Every project is different and some businesses may be able to tap into funding available from Innovate UK or other agencies, so it's hard to give a simple answer. An initial conversation with one of our business development officers is cost free and would give a sense of likely costs and funding sources.

What technology support do you offer?

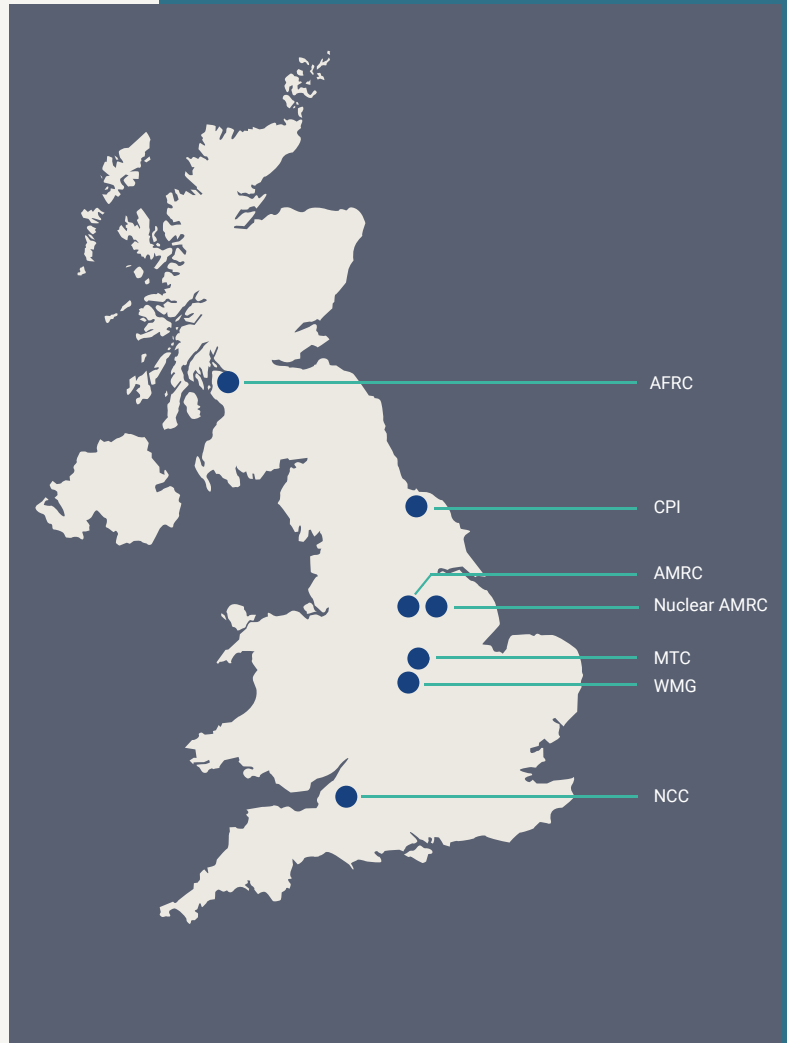
We have capability in a wide range of technologies that can help manufacturers improve their productivity or develop new products and processes. Page 6 of this guide gives you an at-a-glance view of our capabilities.

What industries do you cover?

We're here to help anyone involved in manufacturing.

Where can I find out more about the HVM Catapult?

You can find out more about the work we do through our website at www.hvm.catapult.org.uk. Use the link on the website to sign up for our regular newsletter to stay in touch with latest developments.



Email: info@hvm.catapult.org.uk

Tel: +44 (0) 1564 711 540

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www.hvm.catapult.org.uk

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