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| **Sector Insights** |
| **Sector Overview:** |
| **Advanced Manufacturing:**<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/439270/150626_AM_SLMI_report.pdf><https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/439274/Advanced_Manufacturing_slide_pack_June_15.pdf>Advanced manufacturing is broadly ‘**manufacturing that is intensive in its use of capital and knowledge and requires a high level of technology utilisation and Research and Development (R&D)**’. It can apply to all manufacturing industries, but is most commonly associated with **high-tech industries** such as:* Automotive
* Manufacture of other transports (aerospace)
* Pharmaceuticals
* Chemicals
* Electronics and electrical manufacture
* Scientific research and developments

**Key facts and figures**<https://www.themanufacturer.com/uk-manufacturing-statistics/>* UK manufacturing is thriving, with the UK currently the world’s eighth largest industrial nation. If current growth trends continue, the UK will break into the top five by 2021
* According to Make UK (formerly EEF), UK manufacturing currently:
	+ employs 2.7 million people – earning an average of £32,500
	+ contributes 11% of GVA
	+ accounts for 45% of total exports – totalling £275bn
	+ represents 69% of business research and development (R&D)
	+ provides 13% of business investment

<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/439270/150626_AM_SLMI_report.pdf>* The advanced manufacturing sector comprises of 29,000 enterprises in the UK (23% of all manufacturing enterprises), which employ approximately 1.3 million people
* Advanced manufacturing employers generated over £72 billion of GVA
* Estimated that approximately **186,000 new engineers and manufacturers are needed every year in the UK up to 2024** but there is **currently a deficit of 20,000 graduates annually** -<https://www.aircraftinteriorsinternational.com/industry-opinion/uk-manufacturing-has-a-skills-shortage-and-its-not-just-due-to-brexit.html>
* **Advanced manufacturing is predicted to see significant growth (compared to overall decline in manufacturing) largely driven by growth in 3D printing, robotics and automation with the number of high skilled jobs projected to increase, however the automation is likely to see a decline in elementary and machine operative roles**
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| **Sector Skills Council/Sector Skills Body contact:** |
| SEMTA customerservices@semta.org.uk tel. 0845 643 9001 |
| **Details of sector partnership groups:**  |
| Staffordshire manufacturers forum (Chamber led)AME hub partnership meeting (SSLEP led) |
| **Local Context:** *(Why is the sector a priority/important locally?)*  |
| **Growing high value sector with opportunities for future higher value growth in advanced manufacturing:****Manufacturing businesses, jobs and GVA*** Total of 2,805 manufacturing businesses in 2019, **6th highest of all SSLEP sectors**
* 4% or **100 increase in manufacturing businesses since 2011**
* 9% or **5,000 jobs increase since 2011 with 60,000 now in SSLEP area** (8% part-time), represents **12.4% of total SSLEP workforce which is higher proportion than regionally (11.3%) and nationally (7.9%)**
* **Staffordshire has highest number of manufacturing jobs (47,000) of all WM authorities**
* GVA has increased by nearly a third (31% or £850m) since 2011 and now worth £3.58bn, the **highest valued sector in the SSLEP economy**
* In 2017 each manufacturing job filled in Staffordshire generated on average £59,300 compared to £43,700 for jobs filled in all industries of the Staffordshire economy, while in Stoke-on-Trent on average manufacturing jobs generated £62,600 compared to £43,800 for jobs filled in all industries

**Location of Jobs*** Largest sector for jobs in East Staffordshire (11,000), South Staffordshire (5,000), Staffordshire Moorlands (4,500), and Tamworth (4,500)
* Highest proportion of jobs for all sectors in East Staffordshire (17.2%) and Tamworth (15.5%) well above WM (11.3%) and England (7.9%) averages

**Main Jobs*** The main types of manufacturing which generate the most jobs in the SSLEP area are the manufacture of fabricated **metal products** (9,000 jobs); manufacture of **non-metallic mineral products** (8,000); manufacture of **machinery and equipment** (7,000); and manufacture of **food products** (6,000). However, the latter has seen the largest recent decline in jobs within the manufacturing sector, with a decline of 1,000 jobs between 2015-2018, while the manufacture of **chemicals and chemical products** has seen by far the largest growth in jobs since 2015 with 2,500 more jobs in the SSLEP area

**Future Local Growth Opportunities*** Given the relatively strong presence of manufacturing companies in the SSLEP area including **internationally renowned companies such as JCB and JLR**, **med-tech park at Keele University**, and a **strong local supply chain of SME businesses** the area is in a position to take advantage of future growth opportunities in the sector
* It is recognised that **uncertainty around Brexit** and the effect on trade relations may at least in the short term impact the manufacturing sector more so than many other sectors, however, **new technologies and manufacturing methods** provide scope for increased economic growth and boosting productivity in the sector
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| **Key Employers in Stoke-on-Trent and Staffordshire:** |
| Major local manufacturing employers include JCB, UK Grid Solutions, JLR, Molson Coors, Steelite, Kerry Foods, Michelin Tyres, Gestamp, and 2 Sisters Food Group |
| **Sector Issues and Drivers:** |
| **Recent Sector Growth**<https://www.themanufacturer.com/uk-manufacturing-statistics/><https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/439270/150626_AM_SLMI_report.pdf>Overall, the **UK’s industrial sector has increased by 1.4% a year since 1948**, according to a recent report from the Office for National Statistics (ONS). The ONS attributes the sustained growth to a better quality, more skilled workforce; a shift in production from low to high productivity goods; improvements in automation and technology; increased investment in R&D, and a more integrated global economy. **Current Sector Drivers**There are a range of structural and technological developments driving advanced manufacturing:* **Smart Factory** – huge potential of **digital technologies** (i.e. 3D printing, nanotechnology, biotechnology etc.) but **investment is being held back** not only by Brexit uncertainty but also a lack of a coherent digital strategies within businesses, limited understanding of their practical application and gaps in the skills required to take advantage of these new technologies
* **Government Policy & Industrial Strategy** - faith in government policy is weak but sector resilience solid, with a heavy majority of manufacturers say their **strategic planning is being put at risk**, and many believe manufacturing will be plunged into chaos by **Brexit**
* **Sustainable Development** – the sector has increasing requirement to meet **low carbon legislation targets** (e.g. The Kyoto Protocol) which is **driving innovation** in lightweight products and equipment to reduce energy and water consumption. Employers consequently need to invest in ensuring their workforce are aware and able to position themselves to take advantage of new developments
* **Skills & Training** – the sector has a **shortage of engineers**, with older members of the workforce retiring and an insufficient number of properly trained young people emerging from the education system. This skills gap is impacting on business performance and to address the issue a number of larger companies are now establishing their own training schemes and academies e.g. JCB
* **Research & Development** - the ability to develop new products and processes requires significant **investment in R&D**, to improve this there is growing collaboration between industry and universities to co-invest in new technologies and **increasing demand for high quality science and engineering graduates** to enter the sector
* **Growth & Exports** - current and future **technological advances** mean that it is increasingly cost-effective for businesses and their supply chains to be based in Britain. This digitisation in the sector has the potential for businesses to realise further growth, particularly through exports post-Brexit
* **Business Investment** – since the recession there is **ongoing caution** around business investment and this is being heightened by Brexit, innovation and technology that enables timely strategic decision-making is vital to help increase investment and translate ideas into growth – this is **increasing the importance of** **business manager roles** in order to ensure employers can make ‘the business case’ for new investment

**Employer Perspectives**<https://www.themanufacturer.com/reports-whitepapers/manufacturer-annual-manufacturing-report-2019/>The Annual Manufacturing Report 2019 presents a number of interesting insights into the state of manufacturing, including;* 81% of UK manufacturers say they are ready to invest in new digital technologies to boost productivity.
* 71% say Brexit is damaging strategic-planning and business prospects
* 66% say the British people do not understand the importance of manufacturing to the economy
* 64% say Brexit will cause chaos for the manufacturing sector
* 57% say the education system is a disaster for industry and needs a total overhaul
* 55% say the government could do more to promote exports

**Workforce Issues**<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/439270/150626_AM_SLMI_report.pdf>* The workforce is **aging with young people often seeing the sector as a lower-quality choice with fewer career prospects**
* The sector has a **predominantly male** workforce, with only 26% of the workforce female
* The sector has a **high skilled** workforce with nearly half (44%) holding qualifications at Level 4 or above
* 19% of advanced manufacturing employers report **skills gaps** compared to 15% for the economy as a whole
* Advanced manufacturing employers were also more likely to report **hard to fill vacancies** compared to the economy as a whole (9% versus 5%)
* From the 6,000 UK manufacturing businesses surveyed by the British Chamber of Commerce at the end of 2018, 81% of them found it **difficult to hire employees with the right qualifications and experience**

**Key occupations and skills**<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/439270/150626_AM_SLMI_report.pdf>* Production managers and directors in manufacturing – increasing need for design skills to support the shift to shorter, more tailored production
* Biological scientists and biochemists
* Production and process engineers
* Metal working production and maintenance fitters
* Assemblers of electronics and electrical components

The **skills requirements of these key occupations are likely to change significantly in the future**, such as the increasing demand for IT and design skills as the sector becomes more digital in nature e.g. the use of design packages and bespoke software such as CAD/CAM and CNC machining software**The Importance of skills to enable future growth in advanced manufacturing**<http://www.csap.cam.ac.uk/news/article-advanced-manufacturing-skills-challenge/>* Becoming a world leader in advanced manufacturing is key to maintaining and increasing the UK's economic growth, a key challenge to achieving this aim is addressing the skills shortages in the sector
* **Requirement for more highly skilled workers** to help drive growth in the sector, take advantage of the opportunities arising from industrial digitalisation and increase sector productivity
* **Apprenticeships are an essential way to bridge the skills gap** with the need for more focus on vocational training beyond academic routes
* There are clear technology **readiness levels** (a technology passes through the research phase, the development phase and then into production) but we have no equivalent for skills. Instead, we have multiple metrics by which skills are measured - years of experience in the field, level of qualification, and apprenticeship schemes. This **lack of strategic planning** is partly responsible for the current skills shortage in advanced manufacturing
* **New technologies** are not single entities requiring a well defined skill, they generally involve multiple dimensions, such as measurement systems, material productions and quality assurance, all of which **require specialist skills**
* **Brexit will end free movement and effect the UK's ability to recruit skilled workers from overseas** – we should use Brexit as an opportunity to transform our education system so that it provides more of the skills needed in advanced manufacturing including **programming** as core part of education between the ages of 11-18 and throughout higher education
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| **Implications of the Government’s Industrial Strategy Grand Challenges:** |
| * Through partnership with industry the **Government has established Sector Deals** identifying opportunities to boost productivity, employment, innovation and skills
* The **Automotive Sector Deal** looks to establish the UK as a world leader in **addressing the Future of Mobility and Clean Growth Grand Challenges by boosting investment in emerging technology**
* The deal includes up to £32 million of new joint funding for an industry-led **supply chain competitiveness** programme to help grow the UK supply chain and make it internationally competitive
* There is also £26.4 million of Government investment, match-funded by industry, to help develop the **next generation of driverless and low-carbon vehicles**, with flagship projects led by Ford, GKN and Jaguar Land Rover
* The Sector Deal brings together a number of long-term joint commitments between government and industry that will help build and establish the UK’s leadership in meeting the Future of Mobility and Clean Growth Grand Challenges, including:
* **Low-carbon automotive technologies -** through the Advanced Propulsion Centre government is investing £500 million over 10 years to 2023 to research, develop and industrialise new low-carbon automotive technologies in the UK, with industry providing £500 million match funding for collaborative R&D projects
* **Automotive research and development -** government is investing up to £225 million from 2023 to 2026 to support R&D in the sector, with industry providing equivalent match funding
* **Transitioning to ultra-low and zero emission vehicles -** through the Faraday Battery Challenge, government is investing £246 million to make the UK a world leader in the design, development and manufacture of batteries for the electrification of vehicles
* **Connected autonomous vehicle (CAV) technology -** £250 million of government investment to position the UK as a global leader in Connected and Autonomous Vehicles (CAVs) development and deployment. This includes:
	+ £150 million for collaborative R&D projects from which, to date, £100 million has been committed to 51 projects, with industry contributing a further £56 million
	+ £100 million for CAV testing infrastructure, £51 million of which has so far been committed to 4 infrastructure projects; 2 ‘controlled’ testing facilities and 2 ‘live’ public testing facilities
	+ government will be launching a £15 million simulation and modelling R&D competition on the 16 January to accelerate the development of connected and autonomous vehicles
* **Supply chain competitiveness and productivity programme -** £16 million of government funding, subject to business case, for an industry-led match-funded national supplier competitiveness and productivity improvement programme to support a sustainable and internationally competitive UK supply chain for future volume vehicle production
* The **Aerospace Sector Deal** looks to develop ‘Future Flight’ through the **next generation of electric planes, drones and autonomous aircraft** by 2025 and include:
* **The Future Flight Challenge** will provide up to £125 million (from the Industrial Strategy Challenge Fund) to aerospace and other manufactures to research and engineer new technologies and infrastructure, which industry will match
* This will support the **development of electric and autonomous aircraft** and transform the future of transport in urban areas as we utilise our airspace to ease congestion
* Industry will initially focus on smaller aircraft and drones to ensure the suitability of the new technologies before developing them for larger passenger aircraft
* £15 million government investment for GKN Aerospace’s new Global Technology Centre in Bristol. The centre is expected to open in 2020 and will ensure the UK is a hub for world class innovative technology for the next generation of fuel-efficient aircraft
* The deal includes £13.7 million support for **supply chain SMEs to commercialise technologies and boost their competitiveness** on the global stage and a pledge to **increase the number of women in aviation**
* The **UK Aerospace Research Consortium** of leading aerospace engineering universities will help industry understand emerging technologies, encourage collaboration and boost research and development
* To deliver the deals there is a need to **nurture the talent of tomorrow** through industry and skills providers working together to develop new technical qualifications (T-levels) and to transform the quality and quantity of apprenticeships that will drive the sector
* The deal also encourages the UK’s Aerospace sector to work with Local Enterprise Partnerships to deliver **Local Investment Strategies**
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| **Local Sectoral Labour and Skills Demand and Supply Issues:**  |
| Manufacturing is a complex sector with many different types of industry alongside a complex supply chain.<https://www.instituteforapprenticeships.org/about/occupational-maps/>It is recognised that there are **3 main career pathways in engineering and manufacturing**:* **Engineering, Design and Development –** made up of:
	+ Technical occupations (Level2/3) e.g. Engineering design & draughtsperson;
	+ Higher technical occupations (Level4/5) e.g. Engineering manufacturing technician;
	+ Professional occupations (Degree) e.g. Aerospace engineer
* **Engineering, Manufacturing, Process and Control –**
	+ Technical occupations e.g. Welding, manufacturing or plant operative/technician in welding;
	+ Higher technical occupations e.g. Technologists in welding or engineering surveyors;
	+ Professional occupations e.g. Manufacturing, plant and process engineers
* **Maintenance, Installation and Repair –**
	+ Technical occupations e.g. Heavy vehicle service & maintenance

technician;* + Higher technical occupations e.g. High speed rail & infrastructure technician;
	+ Professional occupations e.g. Electronic engineer

**Occupations in Demand** *(Labour Insight)** Consistently high demand through vacancies for **engineering technicians** (over 1,000 vacancies in 2018), **welding trades** (nearly 800 vacancies but considered at high risk of automation), and the following each with more than 500 vacancies - production managers and directors, mechanical engineers, science, engineering and production technicians, sales related occupations, and buyers and procurement officers
* There is also demand for **product design and development engineers** and **programmers and software development** professionals
* The main industries recruiting are the manufacture of metal products, food products, and machinery and equipment
* Main recruiters include Ultra Electronics Holdings, JCB, and Molson Coors
* The **main skills requested are in drafting and engineering design, sales, customer service, procurement and welding**

**Demand-side Issues** *(DfE Employer Skills Survey)** A fifth (20%) of manufacturing businesses in SSLEP have vacancies which is similar to the average for all businesses in SSLEP
* Over 1 in 10 (12%) of businesses have hard-to-fill vacancies (higher than the 9% for all businesses)
* 11% have skills shortage vacancies compared 7% for all businesses (**nearly half (44%) of vacancies are SSVs double the average for all businesses**)
* 15% of businesses have staff with skills gaps and are not fully proficient just below the 17% for all industries
* Just over half (51%) of businesses have trained staff over the last 12 months compared to 65% for all businesses
* There was a similar proportion of off-the-job training (41%) and on-the-job training (39%)
* Over a quarter (28%) of businesses have underutilised staff which is lower than the average of 32% for all industries
* Over half (51%) of businesses expect the need for upskilling of staff over the next 12 months compared to two thirds (66%) of all businesses

**Main construction qualifications and providers (skills supply) ESFA Funded Learning:*** SSLEP **ESFA funded learners have remained relatively static over the last 3 years** with the main qualifications in engineering (NVQ or BTEC), Electrical Installation, and Light Vehicle Maintenance and Repair
* Majority of manufacturing provision is based in Staffordshire (72%) and Stoke-on-Trent (15%), while there is also some provision in Derby, Walsall and Cheshire East
* The main providers are Newcastle and Stafford Colleges Group (28%), South Staffordshire College (21%), Burton and South Derbyshire College (14%), Stoke-on-Trent College (14%), and The JCB Academy (10%)

**Apprenticeships:*** SSLEP **apprenticeship starts in engineering and manufacturing technologies stood at 1,610 in 2017/18 showing a decline of 16% or 310 starts over the five year period since 2013/14, this was larger than the 8% decline seen nationally**
* The most substantial decline was seen between 2016/17 and 2017/18 with a decline of nearly a quarter (24%) or 500 starts (higher than the 21% decline seen nationally)
* The main apprenticeship programmes in 2017/18 were in ‘Industrial Applications’, ‘Engineering’ and ‘Vehicle Maintenance and Repair’
* The main providers are Stoke-on-Trent College, Project Management (Staffordshire) Ltd., Newcastle and Stafford Colleges Group, and The JCB Academy
* The highest volume of provision is based in Stoke-on-Trent, East Staffordshire, Walsall and Newcastle-under-Lyme
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| **Local Responses:** |
| **The SSLEP Advanced Manufacturing & Engineering Hub****The Technology Hub (Stoke-on-Trent Spoke) –** Stoke-on-Trent College has re-equipped its Burslem Campus to support new programs and apprenticeships to meet construction industry demand, including: * Welding Skills
* Construction Technical
* Construction Operations – Civils
* Highways Maintenance
* Advanced Engineering/ Manufacturing - CAD, CAM

The development of these programmes will focus on Building pathology, waste management, EfW and energy efficiency in buildings.**The Tamworth Automotive & Engineering Hub** – South Staffordshire College leads the hub and offers provision in construction, electrical engineering and other sectors. Specific skills being delivered include motor vehicle (petrol and diesel), welding, welding simulators, robotics, CNC milling, 3D printing/rapid prototyping and mechanical engineering.**The AgriSTEM Academy –** South Staffordshire College delivers industry relevant training for the Advanced Manufacturing & Engineering and Agricultural Engineering & Technology sectors, this includes a multi-occupation construction area and gas heating & unvented hot water assessment areas.**The Science & Technology Centre –** based at Stafford College with a focus of developing STEM-related curriculum primarily at levels 3, 4 and 5. The primary curriculum offered within the Centre is focussed on level 3 with the delivery of A Level Sciences, Engineering and Computing. The Centre also hosts level 4 full time, part time and apprenticeship programmes along with the College’s level 2 and level 3 engineering apprenticeship activity. The College offers a series of primary and secondary taster activities focussed at key stage 3 and 4 where pupils from local schools visit the Centre for a day and experience on a carousel basis the Sciences, Lego and Computing. The plan is to inspire the students of the future to consider STEM related activity when making their career choices. The college’s specialisms are in the following areas:* Computer Aided Design/Manufacturing (CAD/M)
* 3D Design, scanning and printing
* Robotics, mechatronics and programmable logic controls (PLC’s)
* Building Information Modelling (BIM)
* Design for Manufacturing (DFM)
* Building Energy Management Systems (BMS/BEMS)
* Construction design, architecture, surveying and civil engineering
* Technical construction management
* Mechanical, electrical and electronic (M&E) design, implementation & servicing
* Applied Maths

**SSLEP funded Skills Equipment Fund (SEF)****Stoke-on-Trent College - Technical and Curriculum Development Project (The Heat Academy) -** provides specialist equipment to enhance its provision offer in advanced manufacturing, construction, construction technologies and civil engineering.**Newcastle & Stafford Colleges Group - Hybrid Construction Technology** - the specialist equipment will support the development of hybrid construction training at the college's national construction plant training centre at its Stafford campus. The college is one of only twelve centres in the whole of the UK to provide specialist training in heavy construction plant. The equipment will support the delivery of advanced apprenticeship frameworks in plant maintenance, plant operation, civil engineering plant & construction.**ESFA ESF Programmes**The ESFA programmes provide a wide range of support from engagement and outreach activities to higher level skills development, these are delivered across the region through four prime providers; Skills Training UK offer support to individuals who are NEET, Peopleplus offer support to unemployed individuals, The Community Foundation for Staffordshire provide community grants to organisations moving people closer to the labour market and Serco offer skills support to both employed individuals and those who are under threat of redundancy.Up to August 2019 the **round 2 ESF programmes have supported learners in 234 engineering qualifications**, with a particular focus on Lean Organisation Management Techniques. |
| **Recommendations:*****Options:**** *Do nothing*
* *Develop a provision offer to fill “provision gaps”*
* *Increase capacity of existing provision to meet demand*
* *Fund capital equipment to enable education providers to deliver provision to fill “provision gaps”*
* *Improve supply, increase attainment Ks4, Ks5 and post 16*
* *Enhance CEIAG to share details on priority sectors to inform career choice*
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| <https://www.aircraftinteriorsinternational.com/industry-opinion/uk-manufacturing-has-a-skills-shortage-and-its-not-just-due-to-brexit.html>**Career IAG** – **addressing misconceptions** about manufacturing not being a quality choice, particularly in young students, is vital to **increasing interest in the sector**. Employer and education provider partnerships to raise awareness of the sector and develop career IAG can help improve perceptions, **increase STEM learners** and grow the number of people entering the industry**Attracting Underrepresented Groups** – addressing the low number of **women in manufacturing is also a good way to start closing the skills gap**, this can be done through targeted engagement initiatives in manufacturing and STEM or by encouraging more women to seek out **mentors****Up-skilling and Re-skilling** – as the sector continues to evolve and make more use of new technologies workers will need to be able to keep up with these **market and technological changes** through training to up-skill and re-skill – otherwise sector growth and productivity may be restrained - the **Government’s National Retraining Scheme** is a valuable source in learning the new skills necessary to upskill**Vocational Training and Technical Education** – **employer investment in training** and improved **vocational learning pathways for young people**, such as increasing the number of apprenticeships in manufacturing through more effective use of **levy funding** is a way to bridge the skills gap**Specialist Skills Development** – increasing requirement for specialised knowledge and expertise in manufacturing means that it is necessary that current and future employees:* learn **digital and programming skills**
* have a deep understanding of **automation**
* know how to work with **advanced machinery**

This is key to growing the workforce, boosting productivity and staying competitive<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/439270/150626_AM_SLMI_report.pdf>There are a range of potential actions that could improve the sector’s capability to take advantage of new technologies:* Employers need to invest in developing workforce capacity in **design/CNC software**
* Employers should assess the benefits of offering **apprenticeships** and ensure clear **pathways to higher-level technical and professional roles**
* Universities and vocational training providers need to ensure **technology skills are embedded in a wide range of STEM-related programmes, alongside leadership and management and supply chain management skills**
* Continued investment by Government in collaboration between HE and industry will help the sector mitigate risks with pursuing **business development / innovation**
* It is important to foster links that support **skills development beyond** **traditional industry silos**, and to conduct more research on good practice in **engaging SMEs in R&D** and disseminate this across the sector
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| **What are the Outputs/Outcomes/Impacts?***(Sector-wide: Skills supply that meets demand / Sector growth in terms of businesses, jobs and GVA / Improved sectoral productivity)* |
| *Example: Develop manufacturing and engineering skills (particularly higher technical and professional skills) to support current and future demand for high-value advanced manufacturing in the SSLEP area…addressing existing skills gaps in the sector e.g. increasing STEM in schools; existing need in traditional occupations such as engineering technicians, welders (high risk of automation) and mechanical engineers; as well as the demand for management and sales workers…and ensure that the skills system is future proofing the local manufacturing workforce i.e. increasing demand for innovation roles such as product design and development engineers and digital roles such as programmers, software development professionals and advanced machine operatives…leading to improved local competitiveness, greater exports and increased economic growth and productivity* |