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The interface between industry and higher education is essential to the growth of chemistry-using industry sectors.

2.0

Vision

Over the next ten years:

- The UK improves collaborations between business and universities to support the economy and the skills pipelines.
- Partnerships between industry, Government and universities further develop pre-competitive networks.
- Universities deliver new course contents with stronger scientific and entrepreneurial skills to deliver better career prospects and increased business output.
- The SME sector grows.

To achieve this, the following are needed:

2.1

Pre-competitive networks and knowledge transfer

- a. UK businesses and universities work and collaborate globally without the imposition of domestic regional structures.
- b. Industry and universities further develop networks in key industry sectors to make information, skills and expertise more accessible to business and academia across disciplines. Industry works with university teams rather than groups of specialists in specific sub-disciplines.
- c. Universities have universal, simple and flexible intellectual property mechanisms which better encourage collaboration with companies, both large and small.
- d. All university technology transfer offices have a shared, universal approach to commercialising ideas which is easily understood by industry.
- e. Science parks and innovation centres facilitate exchange of staff and equipment from small companies with their local universities.

2.2

Access to funding for SMEs

- a. The Government improves subsidy to strategically important manufacturing for SMEs.
- b. The innovation vouchers initiative is expanded for SMEs (funding of £1-2k is offered to spend on university research to support innovation/invention).
- c. An Investment Bank (such as the proposed Green Investment Bank) is established, which unlocks significant private investment for SMEs.
- d. Government and the finance sector ensure SMEs have access to a range of investment funds other than Venture Capitalists to support growth and innovation.
- e. Government, universities and professional bodies promote science to venture capitalists and business angels. These financiers better understand science (e.g. longer term investment) which ultimately improves the rate of return on investment e.g. Fraunhofer Institutes.⁶

⁶[Information about Fraunhofer-Gesellschaft](#)

2.3

Career guidance and training opportunities for chemists working in SMEs

- a. Universities increase the number of student placements in industry, particularly with SMEs. Government subsidises SME student placements, if the SMEs cannot afford them.
- b. University career advice officers better promote chemistry career options in industry. Universities monitor more comprehensively the career choices of their alumni and use this information to guide future graduates.
- c. SMEs require Continued Professional Development (CPD) for chemists working in their companies. Having highly trained staff is shown to improve productivity and business performance.
- d. CChem framework used as indication of competence by Industry especially SME recruiters.

2.4

Secondments between industry and universities

- a. Recruitment of ex-industrialists to universities and university boards and *vice versa* improves the understanding in each sector.
- b. Secondment opportunities for university early career chemists (e.g. Industrial Fellowships) to work in industry and *vice versa* increases.

2.5

University courses and key employability skills

- a. More schemes such as the 'Young Enterprise Scheme' for 2nd or 3rd year undergraduates encourage entrepreneurship. These schemes set up cross faculty team working between science students and those in other subjects such as marketing and economics.
- b. Industry guides university courses which contain the right balance between soft skills and chemical knowledge.
- c. HE and FE training supports SME activity with particular emphasis on core skills including stats, maths, writing and practical skills including safety, validation and experimental design.