

## GuildHE & CREST Final Response to the Industrial Strategy Green Paper

April 2017

### **1. Does this document identify the right areas of focus: extending our strengths; closing the gaps; and making the UK one of the most competitive places to start or grow a business?**

*GuildHE is an officially recognised representative body for UK Higher Education. Our members include universities, university colleges, further education colleges and specialist institutions from both the traditional and private (“for profit” and “not for profit”) sectors. Member institutions include major providers in professional subject areas like art, design and media, music and the performing arts; agriculture and food; education; maritime; health and sports. GuildHE has two sub associations, the Consortium for Research Excellence (CREST) and the United Kingdom Arts and Design Institutions Association (ukadia).*

GuildHE believe the industrial strategy’s three areas of focus (extending our strengths; closing the gaps; and making the UK one of the most competitive places to start or grow a business) are appropriate provided the policies associated with them are not too narrow in focus; for example, it would be disadvantageous to simply “pick winners” that already perform well if Government intends to truly “improve living standards and economic growth” (Green Paper, pg9) across the whole of the country.

We think that, at present, the Green Paper does not emphasise the Green economy strongly enough. As Juergen Maier, Chief Executive, Siemens UK and Ireland recently commented: “A successful and balanced economy that works for all will be both sustainable and resilient.” We would back Green Alliance’s statement that “low carbon development and greater resource efficiency [are] important drivers of competitive advantage in manufacturing, agriculture, construction and business services, as well as energy and transport” (Green Alliance, *Industrial strategy fit for the future*, April 2017).

We believe that we are ideally placed to aid government in its ambitions to drive productivity and growth. Our member institutions are well placed to support, develop and enhance the Industrial Strategy because they are well-embedded in local economies throughout the UK. They have the potential to act as creative catalysts through which to deliver the strategy. They can nurture the sparks of innovation and create connections between thought leaders across multiple sectors.

### **2. Are the ten pillars suggested the right ones to tackle low productivity and unbalanced growth? If not, which areas are missing?**

We see the ten pillars as heading in the right direction. In particular, we warmly welcome the clear focus on science, research and innovation (Pillar 1); the need to develop skills (Pillar 2); cultivating world-leading sectors (Pillar 8); driving growth across the whole country (Pillar 9); and creating the right institutions to bring together sectors and people (Pillar 10).

This last Pillar in particular we view as crucial - without developing and investing in strong relationships across the whole range of sectors, including academia and nonprofit, Government will not achieve its overriding policy objective of creating “a country that really does work for everyone.” (Green Paper, pg3).

To this end we support the BEIS Commons Committee's recent recommendation that Industrial Strategy is more than these broad, horizontal pillars and that Government should consider "specific 'missions' to meet UK-wide and local public policy challenges." (BEIS Committee, Industrial Strategy: 1st Review, pg23).

Missions would have the advantage of drawing together people and organisations from across different sectors (and subsectors), reducing the risk of creating silos, as the report continues:

"Whereas a sector based approach is essentially another form of "picking winners", a mission-based approach provides a means of articulating a positive economic vision and picking public policy challenges and allowing all sectors to put forward contributions to solving these." (EIS Committee, Industrial Strategy: 1st Review, pg25).

A similar point was made at the launch of the Industrial Strategy Commission.

Furthermore, we believe that strategy needs a greater focus on the creative industries. As our [recent economic impact study proved](#), creative-focused universities and colleges already contribute over £8 billion per annum to the UK economy.

We believe that there should be a stronger focus on agriculture, especially given the fact that it was one of the eight great technologies in 2013/14. Significant work and funding has been achieved since then and should be continued to enable success. The rural economy must also be strengthened in order to support growth of the national economy and we are concerned that this is not clearly acknowledged in the Green Paper.

### ***3. Are the right central government and local institutions in place to deliver an effective industrial strategy? If not, how should they be reformed? Are the types of measures to strengthen local institutions set out here and below the right ones?***

In order to deliver an effective Industrial Strategy all parts of Government must work together: responsibility must not rest solely within BEIS. It is therefore promising to see that there are links into DfE, Treasury and DCLG. How far, though, do each of these departments, and others (eg DCMS, DEFRA, DFID, FCO and devolved administrations) support the Industrial Strategy and see it as fundamental to their daily business? Getting this involvement and support will be crucial for success.

There must be join up and connections at local level. Universities, in particular smaller and specialist institutions, already play an important and central role in helping local communities to grow. For example, The **University of Worcester** worked in partnership with Worcestershire County Council to plan and build [The Hive](#), Europe's first joint city centre university and public library, history and customer centre for students and the public. **Falmouth University's** flagship graduate Incubation and Acceleration programme – Launchpad is specifically designed to place talented students into teams that are supported to create high-growth sustainable companies. This approach is proven to retain entrepreneurial talent, create high-value jobs and draw investment into the region for the long-term benefit of the local economy. **Cleveland College of Art** is collaborating with Hartlepool Borough Council to develop a state-of-the-art teaching, studio and workshop facility which has the major benefit of regenerating part of the town.

However, such activities are not adequately incentivised (and indeed, where funded, they have often previously relied on EU funding), and this makes it hard, particularly in a smaller institution, to find the finance, time and human resource to undertake such transformational projects on a regular basis, despite the benefit that is achieved for the local economy.

As we discuss in our response, GuildHE supports several of the measures proposed by Government and recognises the crucial role we can play through our networks - CREST, ukadia and its Innovation and Knowledge Exchange Network - to assist Government in achieving its policy objectives.

4. Are there important lessons we can learn from the industrial policies of other countries which are not reflected in these ten pillars?

#### 5. *What should be the priority areas for science, research and innovation investment?*

Before the priority areas are identified, it is fundamental that the definition of “science” is the broadest possible and includes the arts, humanities and creative disciplines (as in the Higher Education and Research Bill).

#### **Types of research**

There are two main types of research - basic research (fundamental/ blue skies research) and applied (practice-based) research. Over the last few decades, the UK has very effectively funded the former. It is a system of world-class leading research; however it is not necessarily connected to implementation in practice. And, as identified in the Green Paper, current research funding is very concentrated within the Golden Triangle of Cambridge, Oxford and London.

Yet funding pockets of excellent research wherever they are found is crucial in creating opportunities for a broader range of people and communities. For example, the **Royal Agricultural University** in Cirencester has led the way globally on setting standards in food safety, quality and sustainability. Their work has helped overseas governments (Canada and Australia for example) to develop their strategies to manage risks in these areas.

Following the Government’s recent commitment to [enshrine the diversity of the sector within law](#), something which GuildHE successfully argued for, we believe that there are further, practical opportunities to follow through on this within the innovation and research space.

#### **The case for applied research**

The Industrial Strategy offers the Government the chance to practise what it preaches by supporting and investing in distinct and diverse universities in order to drive social and economic growth throughout the UK.

We believe that the Industrial Strategy offers a chance to rebalance the research system within the UK through maximising the diversity of the higher education sector. It must increase the focus on and funding for applied, practice-based research which has the potential to achieve greater local and national impact. Such research also offers the opportunity for “scale-up” and “spin-out” companies.

For example, a researcher at **Falmouth University** has undertaken work to redesign lobster pots with a company in Padstow, demonstrating the cross-linkages university research can have within its local region to fulfil a local challenge. This has the potential for scale up to the rest of the lobster industry nationally and internationally. What is lacking for such projects at present is the funding, and knowledge, to help practical research ideas be taken to scale. Some of the ideas discussed in the Green Paper also highlight the opportunity for investment in co-produced research - i.e. research that involves the eventual research users in the development of the research questions. This is not seen as “pure” academic research and therefore receives less attention in the current funding system.

**The University of Chichester** carried out research into the design of a high-speed marine craft from a human-factors perspective in collaboration with organisations including the MoD and commercial defense companies. This directly resulted in two commercial ventures that have used the findings from the research to develop consultancy and research-led training activities that are delivered worldwide.

Such collaboration tends to take place locally and sporadically; yet close and deep co-creation is needed in order to answer the societal challenges the Industrial Strategy seeks to address.

### **One possible solution**

We believe that there is the opportunity to develop “Hub and Clusters” networks that seek to bring together academic and business communities for the purpose of applied research to address the large scale industrial challenges.

The model used could be similar to the Knowledge Transfer Partnerships and Catapult Centres but the focus should be on developing local and regional relationships first (Clusters) whilst linking into a national network (Hub). The focus also must be on developing and answering challenge questions together from the start rather than in separate silos. Hub and Clusters could also include a social enterprise (or even nonprofit) perspective, utilizing the specialist knowledge that such groups have about particular needs and challenges within the local community.

There is also an argument that whilst supported by Government this should be independent of Government.

Investing in capacity and collaboration across the whole of the research system will result in economic and social growth through the very fact that people with different views and skills are encouraged to participate. For example, the DFID-ESRC Growth Research Programme defines policy impact in part as “enduring connectivity: impacts on the existence and strengths of networks of people and organisations who understand and can make use of research.” (Growth Research Programme, *Achieving policy impact*, April 2016). Enabling such relationships to be developed will lead to economic success over time. GuildHE could assist in nurturing the development of such a network.

### **Higher Education Innovation Funding (HEIF)**

We support the fact that Government is considering expanding HEIF and other such funding mechanisms. However, we believe that the mechanics of HEIF need reforming. In the last round, many smaller centres of excellence missed out despite the fact that they had delivered successful projects in previous rounds and carry out excellent research.

We argue that the scheme should be expanded and the terms of HEIF broadened so that excellence knowledge exchange can be funded wherever it is found, throughout the country.

## **6. Which challenge areas should the Industrial Challenge Strategy Fund focus on to drive maximum economic impact?**

The challenge areas outlined on pages 30-31 (based upon the Eight Great Technologies) take steps in the right direction.

We would argue however that the challenge area “Leading-edge healthcare and medicines” should be expanded to include “wellbeing”. This expanded definition would allow research to

be undertaken into areas which have annual negative impacts on economic productivity throughout the country. The definition would then include areas such as poor mental health, which affects one in four people within the UK every year (Mind, [Mental Health Facts and Figures](#)). The expanded definition would also tie in with the definition found in the Global Challenges Research Fund and the UN Sustainable Development Goals.

We see opportunities for four further challenge areas:

#### **Creative industries:**

It is promising to see that the creative industries have already been suggested as a possible challenge area. We would argue (similar to Innovate UK) that this is essential.

The sector is very different to many other sectors. The pace within it can be lightning quick. Innovation is rapid, occurs in multiple places throughout the country and is usually unconnected from any central drivers. Creative businesses often operate at a micro-level and need support to scale up. Short interventions and supported internships can help such growth. Therefore regional-based funding and support may have more potential for success than one national sector-based approach.

The creative industries contribute £84.1 billion to the UK economy while the wider creative economy contributes £133.3 billion and represents roughly 8.2% of the UK economy (EMSI, *The Economic Value of Creative Focused Universities and Colleges*, Nov 2016).

Creative industries therefore have great potential to develop local economies due to their place throughout the country, often in less economically-developed areas. For example, **Arts University Bournemouth** embarked on a joint venture with leading VFX company Framestore which led to investment within Bournemouth and to graduates successfully entering the industry.

#### **“Agritech”/ farming:**

We welcome the reference in the Green Paper to the upcoming 25 year plan for farming and agriculture. However, we believe that the role of agritech, agrifoods and agriculture is understated in the Green Paper (for example, 14% of the national workforce is employed in agrifoods).

Growth in developing sustainable agriculture will be even more important for the UK following exit from the EU and as such will need investment and new research to address challenges which can include collaboration across sectors. Higher education is already helping progress in food production and developing advanced technologies to drive economic growth and productivity. For example, **Harper Adams University’s** Agricultural Engineering Innovation Centre partners with commercial companies including JCB, Jaguar Land Rover, John Deere, Alamo Group and the China Agricultural University. It has already achieved success, launching the UK’s first robotic tractor in 2016, highlighting the potential for further funding and support for the sector.

#### **Open Challenge Fund:**

Replicating Innovate UK’s Open Challenge Competitions, the Industrial Strategy Challenge Fund should have its own Open Challenge stream. This is important in order to encourage research that exists at the boundary between sectors and does not fit within specific calls. For example, arts and humanities researchers may be able to offer insights more readily through an open call that addresses societal and economical challenges but feel that existing Challenges exclude their involvement. This will encourage a greater range of researchers from across the country to contribute to solving today’s economic and social challenges.

## **Place-based Capacity Building Challenge Fund:**

There should be a specific Challenge Fund that focuses upon less economically advanced regions of the UK and aims to increase the capacity and collaboration of local institutions. Strong evidence (see for example the Research Excellence Framework (REF) 2014) points to the fact that the smaller and specialist institutions – embedded in international research and innovation systems, and working with public and private partners in specialist sectors including food security, the creative industries, heritage sectors, health, and social innovation – are increasing and sustaining their contributions to regional and sectoral economic growth. Smaller and specialist institutions could therefore further act as catalysts for local, economic growth (See GuildHE, *Excellence in Diversity*, 2015).

GuildHE members could act as catalysts particularly within economically deprived areas. Several of our members are located in areas such as Cornwall and Devon (Falmouth University, Plymouth College of Art, The University of St Mark and St John), the recently designated “Opportunity Area” of Norfolk (Norwich University of the Arts), Lincoln (Bishop Grosseteste University) and in the Midlands and north of England (Harper Adams University, Leeds College of Art, Leeds Trinity University, Newman University, University of Cumbria, University of Worcester) In addition, our agricultural specialists have positive impacts in rural areas (Harper Adams for example has developed a successful network for rural women entrepreneurs). Through place-based challenges, our members could significantly help to spread the benefits of growth across the country.

## **7. *What else can the UK do to create an environment that supports the commercialisation of ideas?***

### **Applied research and the REF**

One way in which an environment that supports commercialisation could be created is through a greater acknowledgement of applied and practice-based research through the Research Excellence Framework (REF). The REF and previous exercises have driven the UK’s research agenda and make up and is the major tool to help redefine the research environment.

For example, REF2014 impacts generated by applied research and consultancy were not admissible unless the original research was generated by the investigator. This ignores the reality of those disciplines where impact is not always down to single or small sets of evidence from one author, group or institution but from an accumulation of inputs over time. But the ability to lever original research in this way, enhanced by long-term relationships with industry and society, adds significant value by creating additional impact. As was acknowledged in the Nurse Review, applied and consultancy research is a valued and vital part of the UK research ecosystem and as such it should be afforded similar opportunities as discovery research to articulate and be rewarded for the impacts it generates. REF could therefore be used as a tool to drive Government’s Industrial Strategy agenda.

### **Implementing the Industrial Challenges Fund and UKRI**

Similar to the above point, the current format of Research Council Funding Grants eligibility requires researchers to have a track record and be part of a research organisation. This creates challenges as strong ideas may not be supported no matter where and what sector they come from. How can you can access research funding from a Research Council if you first need to have achieved a track record of receiving funding from said Research Council? This is something the Industrial Strategy Challenge Fund should address. It could replicate

methods used by Innovate UK and could, similar to some Global Challenges Research Fund calls, limit applications made by the same institutions so that the full range of specialisms, excellence and diversity throughout the country is captured.

For this reason, we view the creation of UKRI in a positive light as it will have the ability to look across the research landscape as one and spot synergies that do and could exist. But it is important that simplifying infrastructure does not undermine the overall goal of stimulating local growth by creating an inflexible core of organisations lacking in regional reach or relevancy.

### **Supporting existing and new networks**

Government should look towards research and collaboration networks that already exist. Government should also consider supporting new cross-institutional networks where there is an identified need. However, Government should look beyond the “usual suspects” who tend to shout the loudest.

For example, the Consortium for Research Excellence (CREST) is a genuinely active collaboration that exists for institutions that have achieved high levels, or aspire to achieve high levels, of research excellence concentrated in smaller communities of research practice. It is unique within the higher education space due to its collaborative working methods across its 24 members. CREST:

- provides a network for discussion and action for the research leaders within the membership
- purchases shared services to support research (for example, a shared research outputs repository)
- provides training and support to members' PhD students and researchers in their career development, focusing on researchers' contributions to the economy and wider society

Building upon a strong track record developed over the last five years, CREST is ideally placed to look at the collaborative commercialisation of research, for example, through developing a consultancy and knowledge exchange unit.

## **8. *How can we best support the next generation of research leaders and entrepreneurs?***

We welcome the recent Government commitments on part-time and PhD loans and believe that these will go some way in supporting the next generation of research leaders and entrepreneurs. Additional money to support PhDs as outlined in the Green Paper and recent Budget is welcome but should be available across the board, recognising that science and engineering are not the only sectors from which research and innovation stem.

It is also important to consider lifelong learning as a key way to support future generations of research leaders and entrepreneurs, which we address in the Skills section of this consultation.

### **Knowledge Transfer Partnerships, PhD students and Doctoral Training Centres**

- The suggestion is made on Page 29 that Knowledge Transfer Partnerships (KTPs) could be increased, to place PhD students in companies
- The KTP scheme has been very successful, but few PhDs have materialised through this route because the normal KTP duration is two years
- This contrasts with the normal RCUK PhD studentship of four years. Although KTP extensions can be applied for, the lack of certainty at the start makes this an

unattractive route for graduates wanting to gain a PhD with integrated business experience and training. Any increase in KTP numbers should be for a four year duration if this scheme is to increase numbers of business-orientated PhDs

- In addition, we believe there would be benefit in establishing Doctoral Training Centres (DTCs) at some institutions that specialise in applied research
- This is particularly relevant for areas such as agriculture where the number of places that support field techniques has been decreasing. For example, according to HEFCE data, the number of postgraduates in agricultural science has decreased from 880 in 2001 to 300 in 2013/14
- DTCs can help encourage undergraduates think about a career in research as well as in industry. They stand a stronger chance of bringing together applied and basic research if they are housed at a cluster of smaller institutions

### **CASE Studentships**

- Allocating more CASE studentships as implied on Page 30 will also be a good way to increase the number of business-orientated PhDs
- These, however, tend to be awarded with larger companies, partly because the application process is complex and burdensome for SMEs, with their very limited capacity for R&D management
- There are fewer barriers to SME involvement in KTPs because the Regional KTP Advisors mentor the applicants through the process
- One suggestion to overcome these barriers would be to allocate CASE studentships to Research and Technology Organisations (RTOs) such as Catapults, industry sector research organisations and Agri-Tech centres, and to include funding for advisors to mentor SMEs through the application process
- These organisations have the management capacity to help SMEs (but would need specific funding for this function) and have ready-made networks of SMEs and universities, in addition to larger companies

## **9. *How can we best support research and innovation strengths in local areas?***

We have argued already above for some ways in which research and innovation strengths can best be supported. We summarise them below and highlight some additional points.

Government could consider:

- Looking beyond the usual big names in research and invest in excellent research wherever it is found
- Introducing a place-base/ capacity building funding stream as part of the Industrial Strategy Challenge Fund
- That any increase in KTP numbers should be for a four year duration if this scheme is to increase numbers of business-orientated PhDs
- Allocating CASE studentships RTOs and to include funding for advisors to mentor SMEs through the application process
- Developing independent “Hub & Clusters” networks to promote co-produced research at local levels. These could link into existing institutions and networks such as LEPs
- Attracting international talent. We would strongly support Government in developing programmes that attract “leading academics who can anchor strong departments”. (Green Paper, pg30). Securing talent from across the world to support professional services within universities is also essential in order to help them build the capacity to encourage local economic growth and research commercialisation
- Investing in existing research networks, such as GuildHE’s sub association, the

Consortium for Research Excellence, Support and Training (CREST) and its Innovation and Knowledge Exchange Network (IEKE). Such networks could act as funnels to enable collaborations between groups of members, economic sectors and Government

**10. What more can we do to improve basic skills? How can we make a success of the new transition year? Should we change the way that those resitting basic qualifications study, to focus more on basic skills excellence?**

With the basic skills of numeracy and literacy, a balance needs to be struck between what is genuinely necessary for all employment, and the basics of the discipline. Those who struggle (especially with Maths) say their issues are in areas which they feel are not applicable to the 'real' world. More creative teaching of these subjects may help some connect with the subject better, as will personalised support, but there are other ways to define intelligence than just Maths and English skills.

As this Industrial Strategy is intrinsically linked to growing our industries and employment opportunities we feel it is as important for schools to teach basic transferable skills which will be useful for employment (such as IT literacy, team working, independent thinking etc.) and these should be a more explicit part of the general national curriculum. Schools develop teaching strategies which help support these skills already, but they are not explicitly communicated to pupils, nor offered support where students are struggling. A similar approach is taken to adult education pedagogies in both academic and technical routes. But more could be done to draw out this integrated learning and give students the understanding to articulate their skills to potential employers.

There have been many research studies undertaken by academics in relation to those who are not 'academically minded' and of the working classes and their attitudes towards learning. Studies have shown that the working classes put less emphasis on schooling and qualifications because they believe it is not useful to acquire a job. Furthermore, when they do continue through education, they feel that they don't fit in<sup>1</sup>. In order for government to achieve its aspirations to upskill all in society, these attitudes must change and a better articulation between skills, education and employment must be achieved.

**11. Do you agree with the different elements of the vision for the new technical education system set out here? Are there further lessons from other countries' systems?**

Broadly we are in agreement with the new skills framework. However we are concerned that the new vocational and academic routes will force young people to choose a specific path early on in life.

Government needs to ensure that there are enough opportunities for students to undertake a broad range of qualifications (both academic and technical) if they have no clear picture of their interests or what careers they wish to pursue. Furthermore, as we will highlight later on in this document, much more careers information, advice and guidance is needed in the

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<sup>1</sup> <http://onlinelibrary.wiley.com/doi/10.1080/01411920902878925/full>  
<http://www.tandfonline.com/doi/abs/10.1080/13636820300200240>

Ball, S (2003) Class strategies and the Education Market: The Middle Class and Social Advantage. Routledge: London

<http://onlinelibrary.wiley.com/doi/10.1111/1467-954X.00233/full>

Willis, P. (1977) Learning to Labor: How Working Class Lads Get Working Class Jobs.

schools system, from at least age 13.

Government has identified that the current technical qualifications landscape is confusing to both young and adult learners. We agree, but we must strike a balance between generic industry skills training, and more specific skills development which is sector specific. The apprenticeships schemes are one way of doing this, but only one way. Adults who wish to go back and re-train must also be able to gain access to specific skills, qualifications and funding to support them to do this in order to be competitive in the workplace.

We would like to see much clearer bridging between the technical and academic routes and their qualification levels aligned. This would ensure that it is easier to transition between them, as well as encouraging the building of qualifications at different levels, rather than the current status quo of multiple qualifications at the same level.

Furthermore, we are disappointed that qualification building has not been picked up by the Apprenticeship policy as yet. Trailblazers should be developing clear progression routes through the qualification levels in order to deliver appropriate apprenticeships for all parts of the business. We would also like to see many more Higher and degree level apprenticeships being developed, but at present we find employers don't really understand how the qualifications framework works, or what the different levels look like. Better training and support by DfE to Trailblazers should be provided.

We would also like to ensure that there is not a division created between which 'types' of institutions deliver vocational and skills training, and those who deliver academic qualifications. GuildHE is proud of the work our members do to deliver industry focused qualifications which are seen as both academic and technical: they have developed strong partnership with industries and local employers to develop their curriculum offer. We believe this is one of the key strengths of our part of the sector.

## ***12. How can we make the application process for further education colleges and apprenticeships clearer and simpler, drawing lessons from the higher education sector?***

The FE sector is not like Higher Education. Students usually attend the most local provider who delivers their qualification, and there is very little appetite (unless it is incredibly necessary) for students to travel much further than a few miles from their homes, not least because there is not as great financial support available for FE students. We are concerned that the streamlining of the FE sector and the new Technical Colleges will make it harder for the whole population to get access to the skills training required. There are yet to be any major developments in distance learning at and FE level, which compounds this issue further. Whilst we can see the benefit of specialist hubs, regional outreach delivery must be undertaken to ensure that training is reaching all who need it.

That said, we are in agreement that the current landscape of qualifications is very confusing to the public, and the FE sector (both public and private) would benefit from having a central signposting service of qualifications (like UCAS). This is especially true for adult learners who don't have access to guidance available through the school system.

FE colleges also deliver significant proportions of HE qualifications (around 10%). This widens access to higher qualifications to those who are unable to attend a university, but also offers a distinctive approach to academic and technical qualification delivery. FE colleges have developed strategies which support learners to gradually build up qualifications, and Foundation Degrees are a key part of HE in FE delivery. Colleges are also well connected to local businesses and industries, and are able to pull together 16-19 strategies, with adult education strategies, and higher learning strategies in order to be an

asset to skills training at all levels in their region.

Apprenticeships are a little different. They are first and foremost employment opportunities, with built in training. Access to apprenticeship opportunities could be better communicated. At present, advertising opportunities happens predominantly through channels aimed at young people, rather than to the whole population. Once the new apprenticeships schemes have gained public support, more should be done to raise the profile of opportunities to all in society, regardless of age. UCAS will also be a good conduit for promoting degree apprenticeships and provides prospective students with a clear option.

More could also be done to link skills training opportunities with the job centre, and staff should be trained to offer advice and guidance on educational opportunities as well as employment. For many adults, apart from their friends, they have no other place to go for advice and guidance.

### **13. What skills shortages do we have or expect to have, in particular sectors or local areas, and how can we link the skills needs of industry to skills provision by educational institutions in local areas?**

GuildHE and ukadia are delighted that government see the creative sector as a serious part of the UK economy. However the current education and skills policies do not help this sector to flourish.

The introduction of the eBacc, the stretching of school budgets and the loss of creative subject teachers has meant that arts education is being eroded in schools. The arts are predominantly now taught in affluent schools, in affluent neighbourhoods to affluent children. This does nothing to help diversity in the arts sector and further compounds issues around cultural capital development for all parts of society. Removing the ability to access arts based skills training will create a massive black hole in the creative industries. We have already seen a sharp decline in the number of students wishing to undertake an arts based degree, yet employers say they need creative graduates.

We hope that the Bazalgette review of the creative industries will shine a light on the necessity to teach arts programmes at all ages. Assumptions have been made by some in Government that arts education is not a 'core' discipline, and those who are gifted are able to hone their talents outside of the curriculum. This is just not the case. We are very concerned that the levels of GCSE and A'level qualification take up will significantly drop, which will have a knock on effect for the pre-requisite requirements needed for both technical and academic further and higher education in the arts.

As Darren Henley says in the introduction to our publication on the economic value of creative focused universities and colleges:

*“Our international competitors regard our success with envy. So, any education system that focuses solely on sci-ence, technology, engineering and maths – important as they are – does so at its peril. The creative industries are a huge part of our economy, employing hundreds of thousands of people in high value jobs. Creative skills are essential in all sectors, creating leaders who can innovate. Surely, it makes sense for us to broaden out the traditional focus on Science, Technology, Engineering and Maths of STEM, to incorporate Arts subjects, so creating STEAM?”*

*An education system that only concentrates on Numeracy and Literacy risks producing two-dimensional young people. Adding the third dimension of Creativity into that system – and seeing it as an equal measure of success – imbues the talent pipeline with the knowledge, skills and experiences that industry leaders repeatedly tell us they are crying out for in their workforce. The study of art, design and performing arts subjects ignite that spark of creativity in a student that will stay with them throughout their career.”*

- Darren Henley, CEO Arts Council England

We believe that employers have a responsibility to articulate their skills needs more deliberately than they do now. LEPs do help facilitate this for large local industries, but SMEs and some large companies do not typically engage in this process, and discussions around skills are always focused on the lower levels (2 & 3). Employers are known to complain that the current HE and FE teaching does not provide the necessary skills for employment. But this fundamentally misses the point about many of the educational qualifications offered at this level. Even the new technical routes will not make a graduate completely employment ready for a specific employer in a specific context. Employers place too much emphasis on educators to provide their employees with very specific skills. Whatever the new education landscape looks like, the education sector and employers need to have a more developed dialogue about what the expectations are. And employers may end up needing to take more responsibility for specific training to staff.

We will discuss the issue of employers not articulating true 'essential' and 'desirable' characteristics in job descriptions in question 14; but these could form the basis of a discussion between employers and educationalists about what is required and deliverable within institutions, and what can only be learned by doing the job.

Many GuildHE members (both traditional and alternative providers) are specialist institutions, and have seen niche gaps in the skills market to develop courses, and even whole institutions, with employers in partnership. This helps to bridge the divide between education and employment for graduates. Like other specialists, alternative providers are good at meeting the needs of the industries they serve, with SAE, UCFB, BIMM, University of Law and ICMP all delivering courses which are not widely taught in traditional universities. GSM and SAE have also developed a business model around delivering more traditional courses in an innovative way (for example accelerated degrees), in order to better meet employer needs.

Our members also heavily invest in preparing students for work. This is through a variety of means including: employer led curriculum development, live briefs and work placements used for assessment and developing students' enterprise skills. In some of our institutions over 20% of graduates go off to be self-employed. These students benefit from support, both on their course and through alumni schemes.

***14. How can we enable and encourage people to retrain and upskill throughout their working lives, particularly in places where industries are changing or declining? Are there particular sectors where this could be appropriate?***

As economies grow and fall and sectors expand and contract, it is clear that many careers are no longer for life. Employers must change their attitudes towards recruitment, and accept workers based on their generic skillsets and potential abilities; with "essential" and "desirable" criteria being thought through on the basis of the actual requirements of the job. Government can help support employers and the public in re-training (through access to loans, the apprenticeship levy, more pressure on employers to have training budgets etc.).

At present in most occupations it is currently up to the employee to seek skills training in order to up-skill, change jobs or change careers. We need to strike a balance between the cost for the individual and the cost for the company. At present many adult learners undertake qualifications and pay for them themselves as a 'leap of faith'.

Whilst the apprentice levy is too new to assess its impact on skills opportunities, we now have a system whereby employers are made to have a very narrowly defined training budget. Government must assess the impact the levy has on a company's wider training

budget to ensure that other qualifications and learning opportunities are not being side-lined. The Government Office for Science is doing some particularly interesting research at present around the issues of lifelong learning and the access and motivations for adults to undertake further study. Unfortunately for many adults, there is little time or money to spend on going back to college and so it seems sensible that employers could take on more responsibility in supporting their employees to access education later in life.

There are very many non-accredited training providers. We think there should be better regulation for non-accredited learning to ensure employers and employees are getting good value for money.

The apprentice policy is still very focused around 16-24 year olds. Whilst there is nothing stopping older applicants to apply for apprenticeships, nor employers signing up current staff on apprenticeship schemes, more awareness of this is needed.

15. Are there further actions we could take to support private investment in infrastructure?

16. How can local infrastructure needs be incorporated within national UK infrastructure policy most effectively?

17. What further actions can we take to improve the performance of infrastructure towards international benchmarks? How can government work with industry to ensure we have the skills and supply chain needed to deliver strategic infrastructure in the UK?

18. What are the most important causes of lower rates of fixed capital investment in the UK compared to other countries, and how can they be addressed?

19. What are the most important factors which constrain quoted companies and fund managers from making longer term investment decisions, and how can we best address these factors?

20. Given public sector investment already accounts for a large share of equity deals in some regions, how can we best catalyse uptake of equity capital outside the South East?

21. How can we drive the adoption of new funding opportunities like crowdfunding across the country?

22. What are the barriers faced by those businesses that have the potential to scale-up and achieve greater growth, and how can we address these barriers? Where are the outstanding examples of business networks for fast growing firms which we could learn from or spread?

23. Are there further steps that the Government can take to support innovation through public procurement?

24. What further steps can be taken to use public procurement to drive the industrial strategy in areas where government is the main client, such as healthcare and defence? Do we have the right institutions and policies in place in these sectors to exploit government's purchasing power to drive economic growth?

**25. What can the Government do to improve our support for firms wanting to start exporting? What can the Government do to improve support for firms in increasing their exports?**

We see an opportunity for Government to provide greater support to smaller, specialist,

distinct and diverse higher education institutions wishing to engage in Transnational Education (TNE).

Since 2009–10, while the numbers of students coming to study in the UK have stagnated, TNE has kept on growing. The evidence suggests growth is set to continue. Rising disposable income and many countries' desire to develop their own higher education systems mean that demand for UK degrees and expertise supports further expansion in TNE.

However, government should not see TNE as a way of squaring the circle of claiming to support education exports while continuing to count students in migration targets. Firstly, TNE is not a wholly separate activity, isolated from teaching people in this country – HEFCE figures show that one third of the first-degree international students in England commenced their programme overseas by the means of a TNE course. As such they spend on average between one and two years here in the UK. Secondly, successful and sustainable TNE has to be a partnership of equals – off-shoring UK higher education for national financial gain while erecting barriers to international student mobility will not work.

We have challenged the stereotype that international engagement was only for big universities saying, “All institutions across the sector are now – to a greater or lesser extent – part of a global community of research, teaching and professional practice” (GuildHE, *Excellence in Diversity*, 2015) This year's International Higher Education Forum run by Universities UK International was a perfect illustration of that fact.

26. What can we learn from other countries to improve our support for inward investment and how we measure its success? Should we put more emphasis on measuring the impact of Foreign Direct Investment (FDI) on growth?

27. What are the most important steps the Government should take to limit energy costs over the long-term?

28. How can we move towards a position in which energy is supplied by competitive markets without the requirement for on-going subsidy?

**29. How can the Government, business and researchers work together to develop the competitive opportunities from innovation in energy and our existing industrial strengths?**

The importance of the nonprofit sector should not be forgotten in developing innovation, particularly environmental charities and social enterprises. These sectors are adept at delivering and developing services with limited finance.

As argued above in our response to questions 5 & 6, there is an opportunity to create top-level cross-sectoral networks in order to create co-produced research - research that has the end user firmly in mind. By bringing together talent from across sectors - government, public, business, academic and nonprofit - a potentially powerful mix of perspectives and ideas could be generated to address key industrial challenges. Such “Hub and Clusters” networks must look beyond the usual big players if they are to nurture ideas successfully at their formative stages.

30. How can the Government support businesses in realising cost savings through greater resource and energy efficiency?

**31. How can the Government and industry help sectors come together to identify the opportunities for a 'sector deal' to address – especially where industries are fragmented or not well defined?**

Government needs to be clear about its purpose in bringing people together. What is the intended end result?

We recognise the intention of Government to support particular sectors. However, we question whether a mission-based approach may be more appropriate, as argued in the BEIS Committee's *Industrial Strategy: 1st Review*.

**Micro-business & Creative Industries**

We welcome the upcoming independent review that Sir Peter Bazalgette will undertake into the UK's creative industries.

There are a few important points to note on why creating a sector deal for the creative industries may prove tricky.

The UK's creative sector is a huge global export. However, unlike the automotive industry, you do not find the same one or two "big names" as the industry is very fragmented. The arts do not exist primarily as a money spinner - they are there to enrich people's lives. Innovation means something very different to the sector and can often take place on a small scale whilst having a positive impact upon a local region.

For example, **Bath Spa University** was involved in a research project called "[Bristol and Bath by Design](#)". This work found small design firms in the Bristol and Bath region are 14% more productive than the average small non-design company and 3% more productive than average small design led companies across England and Wales. The research demonstrates the complexity of the design ecosystem; while private companies and freelancers are the primary part of the ecosystem, other public bodies and organisations play a vital role in facilitating and supporting the design sector. Investment in research and innovation could further improve the productivity of such regions.

Government interventions or support will need to look very different from automotive or aeronautical sectors. Many creative companies do not necessarily wish to go global. This is still a valuable and crucial economic contribution. They might require support however to develop to a regional level where is often a shortage and need for moderately sized business (for example, those with employees numbering between 20 and 40). A thriving, locally based creative sector can nurture other sectors (hospitality for example) through increasing tourism to a particular region and thus contribute to the local economy. Excessive expansion could jeopardise what is already in place. Economic success does not need to just lead to big market leaders but also moderately sized niche providers. Government could therefore play a role in helping micro-businesses grow in this way. Such businesses that have the desire to grow from two or three employees do not have the capacity to carry out research or training alone and therefore require support.

If a mission-based approach to industrial challenges is adopted, then arts institutions should be encouraged to be part of cross-sectoral collaborations as there is power in including creativity in non-obvious ways.

Networks such as GuildHE's sub association The United Kingdom Arts and Design Institutions Association (ukadia) could play a role in the leadership of such calls and support the innovation of individual members.

Members can provide support at a very local level and encourage growth at a regional level. One of the challenges for micro-business, especially the creative industries, is their ability to access funding due to bureaucracy. However, higher education specialist institutions are already set up to receive and channel funding (they have the financial systems in place for example). Such institutions could therefore act as catalysts in their areas and be the conduits for Government funding as well as providing business support, training and research.

**32. How can the Government ensure that 'sector deals' promote competition and incorporate the interests of new entrants?**

Government should seek a broad range and size of industries to include in the discussions that set up the "sector deals" to ensure that their views are heard and captured. As mentioned in our answer to question 31, we would argue that a "mission based" approach may offer greater potential by pulling in individuals, groups and organisations from across sectors to address common problems. This could be achieved through place-based challenges that aim to bring together local players to solve issues facing their local communities.

Perhaps places should be encouraged to compete with one another rather than individual sectors? This could encourage all parts of the local economy to collaborate together, no matter their size. Localis in their recent report, *The Making of an Industrial Strategy*, argues for local industrial compacts to be established through strategic authorities that bring together all players in a region. This idea may be worthwhile exploring.

**33. How can the Government and industry collaborate to enable growth in new sectors of the future that emerge around new technologies and new business models?**

**Migration**

Government and industry must collaborate on developing migration policy post Brexit both for the EU and for the wider world. The growth of new sectors will not occur without two-way, easy and efficient migration. The greatest innovations and economic advances occur when people from different backgrounds work together, as the breadth of human history tells us.

**Changing business models**

Changes in the way business operates already see that business can be conducted almost anywhere at any time. Knowledge economies in particular can operate across the world. This said, Government and industry should seek to ensure that human in person interactions are not lost and should consider facilitating networks, conferences and meetings in order to maximise the potential of emerging technologies. The power of business schools in considering business models could also be explored.

**Role of research and networks**

Modest amounts of funding can propel new ways of working, new applications for new technologies and enhance the use of existing technologies. We would welcome the opportunity for higher education to become the testing ground for innovation and the realisation of the full potential of technological advancement. Investing only in discrete new technologies risks falling back on the policy of 'backing winners' which this Green Paper appropriately rejects (p.9).

We would welcome the support of structures, networks, and new business models that enable innovative ideas to flourish. This should include investing in the soft infrastructure of networks, linking organisations and brokerages, and giving funding and policy support to collaborative projects: these might include Knowledge Transfer Partnerships, tech hubs, and collaborative research involving universities and private enterprise.

Government must also ensure a survivable environment for small, exploratory businesses: favourable business rates for SMEs, investment aimed at micro-business, seed funding, and opportunities for national and international networking and mobility. Modest amounts of bottom-up funding, and providing the conditions in which successful ideas can scale up, can ultimately have much bigger effects in propelling innovation and growth than massive top-down investment. Higher education institutions could act as creative catalysts in their local regions by helping SMEs access such funding with ease.

#### **34. Do you agree the principles set out above are the right ones? If not what is missing?**

The three principles set out above feel right. In particular we support the strong focus on raising skills levels nationwide and investing in local science and innovation strengths. Both areas we believe are fundamental to underpinning the development and delivery of the Industrial Strategy.

We also seek to remind Government of the breadth of diversity found within the higher education and that pockets of excellent research and teaching can be found throughout the system and throughout the whole of the UK.

We offer some examples of existing promising practice in our answer to question 35.

#### **35. What are the most important new approaches to raising skill levels in areas where they are lower? Where could investments in connectivity or innovation do most to help encourage growth across the country?**

As the Green Paper points out, one of the greatest challenges that local areas face is in retaining graduate talent. Our members, many of whom are located in poorer regions of the country, report this as a major issue in developing the regional economy.

Students whilst at university make valuable economic contributions to their local economies. Our recent independent economic impact study found that creative higher education institutions' students alone contribute £1.6 billion to the economy through their spending in local shops and services (EMSI, *The Economic Value of Creative Focused Universities and Colleges*, Nov 2016). Investing in higher education institutions which aim to address skills gaps therefore also has indirect, immediate economic impacts. Finding ways to retain graduates is of great importance.

**Southampton Solent** for example is already taking steps to retain skills in the local economy. The university puts aside seed-corn funding, adding preincubation and incubation space, mentoring and networking/training opportunities aimed at their graduates from courses such as fashion, journalism and music. This has resulted in Solent Creatives, a design agency that matches student and recent graduate talent with local SMEs. This has improved both graduate employability and business sustainability within the region.

It is also worth noting that many of Solent's graduates are from an international and EU background and therefore the importance of establishing a fair migration system is essential

to retain such talent within local areas of the UK. Universities UK provides a useful oversight of [the economic impact that international students have on English regions](#). Localis' suggestion to devolve the visa application system for people who want to work and study to strategic authorities may be worth exploring (see Localis, *The Making of An Industrial Strategy*, March 2017).

Another approach to addressing skills gaps can be found in Devon. **Plymouth College of Art** founded Plymouth School of Creative Arts in 2013. It teaches children from the age of four, up to the age of sixteen. It strives to ensure their children are achieving academically through a creative, purposeful education, and this clear vision from the beginning of the project enabled the school to gain buy-in from parents despite being a totally new development. The school has reported positive feedback from students and parents, and that its students are making better academic progress through a focus on creative learning and are more engaged than they were in their previous educational settings. Furthermore, some teachers have noted that some year 7 students are already working at GCSE level. The school was built in a deprived area of inner-city Plymouth. It is hoped that over time it will contribute to the socio-economic regeneration of the local area. The two institutions enjoy a close and productive relationship.

**The University of Chichester** is developing an Engineering and Digital Technology Park in Bognor Regis. It will deliver 500 new science, technology, engineering and mathematics students per annum in Bognor Regis by 2021. All of these students will graduate with professional accreditations, as well as practical industry experience.

### **36. *Recognising the need for local initiative and leadership, how should we best work with local areas to create and strengthen key local institutions?***

Government could play a role in convening initial conversations between different local initiatives. Funding may be needed to enable different groups of people to come together. Some of our ideas are addressed earlier in this consultation.

There could be a role for sector liaison groups - whether they be an extension of LEPs, strategic authorities or something different. Some LEPs can be hard to access for small businesses and other organisations (eg charities). Guidance/ best practice toolkits could be developed centrally to support LEPs and local authorities to connect with a broad range of businesses and organisations.

We would also point out that universities could play a crucial role here. They have the power to act as facilitators and connectors and can use their capital investment to support their local communities through developing science/ technology parks as the **University of Abertay** has successfully done with the gaming industry in Dundee. Universities can also take over old council building and breathe new life into them, turning them into centres of excellence for town and gown alike. **Norwich University of the Arts** provides a good example of this, along with their positive working relationship with the local LEP.

### **37. *What are the most important institutions which we need to upgrade or support to back growth in particular areas?***

We view further and higher educational institutions as key local institutions that need supporting to drive growth in regions.

GuildHE institutions already tend to be closely embedded in their localities. For example, **Bishop Grosseteste University** created BG Futures (including careers, employability and

enterprise departments) to align with the Greater Lincolnshire LEP. The partnership supports the development of local communities, social enterprises and community interest companies in order, allowing the LEP to access funding for supporting skills development, innovation and technology in the area.

In particular we note from the Green Paper that Government intends to support networks of universities where they want to come together to improve commercialisation. As we have argued earlier in this consultation, we believe the GuildHE and its sub associations CREST and ukadia could significantly help in this regard. Many of our members are based within parts of the country that have not benefitted from strong economic growth and can act as conduits into local communities. We can see examples of promising practice across our networks and assist in scalability and knowledge transfer across the country.

As existing truly collaborative HE projects, CREST and Innovation and Knowledge Exchange Network in particular have the potential to go further and lead the development of cross-sectoral co-produced research initiatives aimed at addressing societal, industrial and economic challenges, across multiple areas of the country, from Falmouth to Norwich, Abertay to Southampton, Suffolk to Cumbria.

As discussed earlier in this consultation, we see three main areas where, with Government support and funding (particularly to support concept testing), we can further the Industrial Strategy priorities:

1. Developing a knowledge exchange and consultancy support service to encourage commercialisation across the GuildHE and CREST research base
2. Nurturing the development of a “Hub and Clusters” co-produced research network
3. Supporting the facilitation of educators in engaging with employers around skills development at all levels

***38. Are there institutions missing in certain areas which we could help create or strengthen to support local growth?***

We would view encouraging the development of strategic authorities, cutting across local authorities in regions, as a positive step. In setting up strategic authorities, the role of small, specialist, distinct and diverse universities should not be forgotten, nor the importance of engaging with nonprofits and social enterprises.

In particular, special engagement with private higher education providers in developing the Industrial Strategy should be considered. As they exist in the nexus between for-profit, nonprofit and academic institutions, they could provide powerful insights into how all sectors in society can work together. GuildHE, with appropriate support, would be keen to facilitate such a strategic conversation.