# Invest 2035: The UK's Modern Industrial Strategy

Please see Pearson's response to the government's Industrial Strategy Consultation below, submitted on the 22nd November 2024.

**Sector Methodology**

1. **How should the UK government identify the most important subsectors for delivering our objectives?**

Pearson's workforce modelling uses a robust approach and adopts a quantitative, data-driven method, incorporating all possible subsectors. In our work, the UK workforce is modelled as it stands, capturing the current breakdown of jobs, tasks and skills across regions and industries.

The identification of key subsectors should employ multi-criteria analysis frameworks that combine both quantitative and qualitative metrics. Primary quantitative indicators include some economic performance metrics, such as GVA contribution and multiplier effects, productivity and growth rates, export performance and comparative advantage. These metrics should be analysed alongside strategic importance factors, such as supply chain effect, technological impacts, and potential spillover effects across other sectors. The methodology should also consider each sector's international competitiveness and position in global value chain.

Sustainability considerations play an important role in identifying key subsectors. This includes opportunities for skills development and high-quality employment, assessing environmental impact and green transition, emerging technologies, and future market trends that could significantly impact sector performance and relevance. Supply chain security and resilience are also crucial factors in identifying key sectors. This involves assessing strategic vulnerabilities, particularly in sectors where UK is heavily dependent on imports (such as semiconductors, critical minerals, energy resources, supply chains that concentrated in specific geographic regions). Sectors that face high geopolitical risks, potential trade disruptions, or price volatility in essential inputs need to be considered and subsectors where domestic capability building could reduce strategic dependencies and enhance national resilience need to be identified.

Therefore, in identifying most important subsectors the focus should not be on strong current performance, but also aligned with future economic, social and environmental goals. Methodology should remain dynamic and flexible to allow regular updates.

2. **How should the UK government account for emerging sectors and technologies for which conventional data sources are less appropriate?**

Pearson's workforce modelling uses a robust approach and adopts a quantitative, data-driven method, incorporating emerging subsectors and technologies. In our work, the UK workforce is first modelled as it stands, capturing the current breakdown of jobs, tasks and skills across regions and industries. This is then the basis we use for creating future workforce scenarios using economic projections and technology impact modelling.

There are many helpful and accurate ways the UK government can account for emerging sectors. Where sectors are not yet well-represented in census and labour force survey data, the following approaches could be adopted.

**Emerging sectors**

An emerging sector's future trajectory can be explored through bespoke economic modelling. This is the basis we use for creating future workforce scenarios using economic projections and technology impact modelling.

Pearson uses its modelling to create bespoke scenarios to address major top-down changes and interventions in labour markets while drawing insights from our detailed datasets. We have applied this approach to challenges like the emerging sustainable renewable energy industry in Australia and can use the same approach on a national, regional, local, and sectoral level.

Below the level of sectors are emerging jobs and skills. Being able to shift between sectors, jobs, skills and technologies, within the same data model of a country's workforce, allows broad strokes planning alongside the detail. For example, understanding how to train additional policy officers from roles which will be highly impacted by emerging technologies, like office clerks, or training Machine Learning Engineers from Account Managers.

**Emerging technologies**

Artificial intelligence has a key role to play in accounting for emerging technologies for which conventional data sources are less appropriate. At Pearson, we tailor machine learning models to identify which work tasks are impacted by different emerging technology types, alongside the degree of possible impact. Combined with country and industry-specific adoption curves specific to each technology, through a PESTLE analysis spanning the next 15 years, these insights could provide a significant view of tech impact over time.

In modeling Person undertook with Australian Digital Health, analytics helped guide the adaptation of healthcare education and the enhancement of digital capacity for evolving technology impacts. The Australian health system faces serious challenges including financial constraints, rising demand for services and a significant uplift in technology adoption. These challenges make it imperative that Australia's health workforce be equipped to confidently use digital technologies to deliver better health and care services. Through Pearson's workforce modelling our predictive analytics delivered a data-driven understanding of the current and future digital capability requirements of healthcare workers. The insights, derived from AI applied to Australian Census data, surfaced a nuanced view of the impact of technologies on workforce tasks over the next ten years, a range of implications for a workforce that's unprepared for new ways of working, and a top five emerging technologies projected to offer opportunities for efficiency and productivity gains across the health sector.

We recommend a bottom up approach, starting with the granular level of work tasks to allow for both deep and broad analysis; therefore from tasks to jobs to industries.

3. **How should the UK government incorporate foundational sectors and value chains into this analysis?**

The analysis of foundational sectors, such as the primary sector, basic manufacturing, and utilities, requires a nuanced understanding of their role as essential building blocks of the economy. Even where these sectors are not experiencing a high GDP growth rate, they provide fundamental inputs for other economic activities. Therefore, the analysis should go beyond traditional productivity metrics to consider broader economic significance.

We should assess the supply chain dependencies between foundational sectors and important sub sectors, identifying critical linkages and potential vulnerabilities. This includes analysing both domestic and international supply chains, import dependencies, and potential risks that could impact the overall development costs of growth sectors.

Furthermore, we can also explore opportunities to modernise foundational sectors through sustainable practices and regional effects. Regional analysis is particularly crucial, as foundational sectors often have strong geographical concentrations and create significant local economic multipliers. For example, the development of offshore wind farms in coastal regions, in areas previously involved in the extraction of oil and gas like the North Sea, builds upon existing energy infrastructure, creating a linkage between traditional utilities sector and renewable energy development. Similarly, transition to EV manufacturing in traditional automotive hubs leverages existing skills and supply chain while facilitating transformation of conventional car manufacturing.

**Sectors**

4. What are the most important subsectors and technologies that the UK government should focus on and why?

Given the rapidly changing nature of the digital and technology sector, the most important subsectors and technologies are likely to change over time and in relation to locality. It is therefore more important to focus on the method for identifying these technologies, rather than the technologies themselves.

Pearson's workforce modelling uses a robust approach and adopts a quantitative, data-driven method, incorporating all possible subsectors and technologies. In our work, the UK workforce is modelled as it stands, capturing the current breakdown of jobs, tasks and skills across regions and industries. This is the basis for creating future workforce scenarios using economic projections and technology impact modelling.

Once applied, the net impacts of economic growth and emerging technologies can be used to find the fastest growing, and declining industries or jobs. Likewise, the technologies with the greatest potential are calculated from a task level and can be shown across industries, regions, or a combination thereof.

5. **What are the UK's strengths and capabilities in these sub sectors?**

We have not answered this question as we think others will be better placed to provide evidence for this.

6. **What are the key enablers and barriers to growth in these sub sectors and how could the UK government address them?**

Evidence shows that addressing skills challenges helps all sectors to grow. One of the fundamental enablers of the expansion of these sectors therefore is making sure the skills system delivers the training required.

The 2024 Skills England Report: Driving growth and widening opportunities shows skills drive economic growth, with around one third of average annual UK productivity growth between 2001 and 2019 attributable to an expansion of skills available in the workforce.

Training and education ensure that employees perform their jobs more efficiently and effectively, promote innovation, support businesses to reap the benefits of investment in new technologies and capital, address shortages in sectors and regions where skills gaps are limiting growth, and support transitions between jobs and back into work. This enables employers to recruit individuals with the right skills and attract foreign direct investment into the UK. The Future.now report also highlights (and tracks the skills gap in) the 20 work tasks defined by industry and government as essential for work.

Skills also contribute to enhanced growth and improved wellbeing as they increase individuals' earnings, improve the likelihood of future employment (including high-skilled employment). This contributes to the growth of the active workforce, and increased individuals' opportunities and reduced inequalities.

**Business Environment**

7. What are the most significant barriers to investment? Do they vary across the growth-driving sectors? What evidence can you share to illustrate this?

We have not answered this question as we think others will be better placed to provide evidence for this.

**Business Environment – People and Skills**

8. **Where you identified barriers in response to Question 7 which relate to people and skills (including issues such as delivery of employment support, careers, and skills provision), what UK government policy solutions could best address these?**

Government should focus on the key drivers of skills for productivity: 1) better defining the skills needed for the future of the UK economy, 2) setting the overarching skills strategy including supporting long-term strategic partnerships between education and industry, and 3) giving the skills system the tools needed, including understanding the need for high quality high quality vocational teaching and learning, provision of a well-recognised suite of relevant qualifications that provide progression pathways for all, and industry-standard settings for vocational training. Policy and delivery effort should be focused on making the core existing system work excellently rather than making low-volume, low-impact, high-cost innovations at the margins.

**1) Better defining the skills needed for the future of the UK economy**

- **Analysing data on changing skills needs at national, regional and local level.** Pearson has a unique data capability that models labour market insights at a granular level in the UK, bringing together reliable data sources and a projected adoption of transformational technologies. Our data model is flexible and can accommodate new data sources and reporting requirements, including the frameworks designed for Skills England. This has been used by companies such as South East Water, Zurich Insurance and Australian Digital Health.

  We need policymakers at both national and regional levels to have access to the best data on current and future jobs/skills needs, and to ensure this is accessible across the country.

We know that regional workforces are facing significant technological change, and localised insights can help us to navigate this. Combining data which can predict regional skills needs, with localised data such as capital investment by the public and private sector for example, can provide a powerful planning tool. This data can make sense of skills needs across communities giving clarity about employer requirements at a local level.

Data driven analysis can help us identify differences between regions, and commonalities. Where common requirements exist, it could be more efficient to create a national solution to support portability of skills across sectors and job roles. As the British Chambers of Commerce research notes, this could also help SMEs in particular, whose skills needs may not be heard at a national level.

It can also be used to and support providers to deliver provision underpinned by the data, create regionally based careers information, advice and guidance to help steer individuals towards employable skillsets that will boost their prospects, and to better evaluate return on investment in skills at all levels.

For example, Pearson has used this proprietary analysis, underpinned by details of over five and a half thousand occupations and 75,000 tasks within job roles, to create a detailed and predictive Skills Map, looking at the nine regions of England, Scotland and Wales. The analysis explores which jobs are expanding and declining across different sectors in the nine English regions, Scotland and Wales. The analysis found that in next five-years there will be more jobs created across the economy, however there will be displacement from declining industries into growing ones. We looked at the current skills in demand from employers, as well as those growing in importance. The analysis indicates that:

- 6.7% of jobs across England will be impacted by automation and augmentation by 2027. This means that more than two million workers, of all ages, skills levels and seniority, will need to find alternative roles in order to remain employed, as a result of technological change in their particular sector.
- There are also regional disparities which government policy will need to respond to. For example, our data predicts over the next four years financial services will decrease in London by 5%, equivalent to a loss of 20,000 jobs. Yet, in the North West, this sector will decrease by 6%, which will mean a loss of 5,800 jobs. Strategies to address changes in the workforce therefore need to be regional and localised to meet skills needs.
- Overall, our data shows that although some industries will decrease, others will expand, and the overall workforce will increase. In fact, it shows in the North West, there will be 250,200 more jobs in four years' time. This number increases to 2.08million in relation to England as a whole.

**2) Setting the overarching skills strategy**

- **Articulating a coherent vocational and technical strategy and landscape.** The work of the Industrial Strategy needs to be closely tied to Skills England for the work of the new unit to succeed. The upcoming work on a post-16 strategy is also vital here. An holistic approach is necessary to realise the growth we aspire to, and skills are a key driver of productivity. DfE's reforms (including the current Curriculum and Assessment Review) need to be articulated alongside other skills plans to develop a strategy giving employers and those seeking to enhance their skills a coherent landscape they can engage with. The Adult Education Budget, the Lifelong Learning Entitlement, and the proposed Growth and Skills Levy could form a coherent and easily accessible package of support for employers and for adults looking to reskill and upskill. A joined-up approach to strategy and the articulation of the landscape is needed from government to ensure coherent policy and implementation. Regional needs must be acknowledged in any overarching strategy, if this is to succeed.
- **Supporting employers to engage collectively with skills.** We welcome the introduction of Skills England as a central organising body for skills. We are concerned that since the demise of the Sector Skills Councils, we do not have any way of supporting employers to engage collectively with skills issues and are reliant on individual employers engaging in fragmented activities such as Trailblazer Groups.

  The St Martin's Group for example (which brings together stakeholders from some of the UK's leading employers, training providers and awarding organisations including Pearson), calls for the creation of a clear and effective route for employers to input into skills needs regionally and nationally. This would help ensure large employers operating across multiple regions are able to engage where participation across several Local Skills Improvement Plans (LSIPs) is not possible.

  It would also allow government and employers to agree where engagement is crucial and where it may be better placed with other parties in the system. For example, in the design of skills programmes such as apprenticeships, the use of representative or skills bodies would reduce employer burden and fatigue and accelerate time to delivery. We welcome further details on how Skills England will bring together a framework in which regional and local administrations can work with employers, professional bodies and trade unions to deliver the skills we need.

- **Focusing on systems and architecture rather than qualification design and development**. Local colleges and training providers need to be empowered to do what they do best – using their vast expertise to identify and deliver the provision that best meets learner need. The recent Level 3 reforms have, for example, led to the removal of qualifications that colleges and providers find valuable for their learners and these unintended consequences of a central policy decision could lead to significant gaps in provision that will have a detrimental impact on the talent pipeline. We need to better

define where decisions are best made; by colleges, schools, and providers as well as devolved authorities, and clarify these roles and responsibilities.

- **Differentiating between vocational education and vocational training**. Vocational education tends to be for learners at a younger age, and about learning the underlying key concepts, skills and processes of a domain or profession. These change slowly over time.

  Vocational training is about the latest industry practice, tools, trends and techniques. These change quickly, and the learning should be flexible, just-in-time and firmly situated in the workplace as it is primarily about developing one's practice in new fields when one already has a licence to practise.

  We need a clear and consistent understanding of what we want for the difference phases of education and training. Younger learners need a broader educational experience which will give them the foundations of powerful knowledge and behavioural dispositions they need for work and for life. Adults sometimes need to be able to access the same range of provision as younger learners as they may need to reskill in later life. Adults also need access to a broader range of provision to help them get the skills they need to succeed in the workplace. This needs to include bite-sized learning and be designed to address specific local or regional skills shortages.

- **Setting clear priorities for disadvantaged groups**. The focus of skills reform can sometimes be on smaller groups at the expense of broader reform and of tackling persistent inequalities. For example, the current Level 2 and below post-16 reforms add further complexity to the landscape instead of focussing on what these learners need to engage, succeed, and progress. There are six million adults who do not hold a level 2 qualification.

  The 2024 Learning and Work Institute Report finds that funding cuts in skills in England have disproportionately affected people in the poorest areas and with the lowest qualifications. Government cuts have meant a 27% fall in publicly funded learners from the most deprived areas, while the number of learners from the most affluent areas has barely changed. Meanwhile, people qualified to degree level are three times more likely to get training at work than non-graduates.

**3) Giving the skills system the tools needed to succeed**

- **Ensuring the system has the capacity it needs to support the talent pipeline at level 3 and below**. Recent reforms have introduced T Levels, a high-quality, demanding qualification covering a very stretching blend of specialisation and high-density content. T Level contract volumes to 2029/30 clearly show in some sectors, T Levels will not meet the capacity required by the current market. Even if the capacity challenges with T Levels can

be resolved, T Levels will not be the solution for every young person following a technical or vocational route.

The two-pronged approach to defunding qualifications in the same sector as T Levels is causing the biggest challenge to developing provision that meets both learners' need and that of the UK economy. High-quality, high-reputation qualifications like BTECs are being removed for funding in sectors where the rules do not allow for reformed qualification to be developed. In sectors where there are gaps in provision, high quality qualifications which are already developed and ready to be taken off the shelf and deployed could fill these gaps. These need to continue to be funded, and awarding bodies need to be allowed to redevelop these qualifications over time in line with other newly reformed qualifications.

Over one in five working age adults in the UK hold a BTEC. Existing Level 3 BTEC National provision supported one in five of students studying nursing degrees, over 1,000 people completing their Level 3 qualification in Early Years in 2022 ready to enter the workforce with their license to practice, 25,000 studying Level 3 BTEC Nationals in Digital, and 12,000 studying Level 3 BTEC Nationals in Engineering. BTEC Nationals are accepted by over 150 UK HEIs and around one in four learners enter HE each year with a BTEC, around 100,000 students.

In 2023/24 16,085 students started a T Level compared with more than 85,000 starting on a VTQ like BTEC or equivalent in the same sectors. In three sectors alone (Digital, Health and Science, and Engineering and Manufacturing), 7,659 learners started T Levels in 2023/24. 43,913 learners started equivalent qualifications which are due to be defunded in 2025/26.

Overall, the latest figures show there were 1.2m 16–18-year-olds participating in further education. Of these, 941,892 (79%) were studying at level 3. 15% take A levels with Applied Generals or Tech Levels, 12.5% take Applied Generals alone, and 5% take Tech Levels. Applied General and Tech Level qualifications are the qualifications at risk as a result of the reforms. BTECs are one example of these Applied General and Tech Level qualifications.

**In short, the reforms put around 32.5% of current 16-18 provision at risk.** T Levels account for around 1.5% of 16-18 learners of learners and the reforms are severely limiting the areas in which replacement qualifications can be developed. The DfE published the T Level action plan: Analytical annex in April 2024 which reports that there were 16,085 T Level entrants in the 2023/24 academic year. **This would bring the numbers of T Level learners in learning in 2023 up to around 23,000 (around 2.5%).** See table 1.

**Table 1: 16–18-year-olds participating in level 3 education by qualification type**

| | 2022/23 | 2021/ 22 |
|---|---|---|

| Level 3 qualification | Total | % of level 3 qualifications | Total | % of level 3 qualifications |
|---|---|---|---|---|
| ***Total Level 3*** | *941,891* | *100%* | *944,825* | *100%* |
| **A / AS levels** | 488,813 | 52% | 483,937 | 51% |
| **A / AS also doing Applied General or Tech Level** | 140,577 | 15% | 140,247 | 15% |
| **Applied General** | 119,804 | 12.5% | 127,825 | 14% |
| **Tech Level** | 45,908 | 5% | 52,912 | 5.5% |
| **T Levels** | 13,710 | 1.5% | 6,243 | 0.5% |
| **Other levels** | 133,079 | 14% | 133,661 | 14% |

- **Reviewing the development of occupational standards so they support the development of vocational education and training to meet current and future skills needs, and national and regional requirements**. The current approach makes it difficult to react quickly to regional and local, and emerging skills needs. On average, it takes nine months for new occupational standards to become available, and further time to appear in the course content/qualification specifications. Once the content is set there is limited opportunity for flexibility, particularly to contextualise courses to meet local and regional needs.
- **Using data to identify key skills in occupational standards for a common taxonomy, supporting small and medium enterprises (SMEs) and tailoring qualifications to diverse needs.** We have the data that would allow for the identification of a core, relatively stable set of skills, and of the most common sets of cross-cutting or multi-sector skills across occupations to produce a common taxonomy that can be utilised consistently across standards. These would support current national needs and help SMEs in particular, whose skills needs may not be heard at a national level. This should be built alongside a more flexible element that can be more adaptive to regional or local, or emerging skills needs. The Federation of Small Businesses for example, reported in 2022 that compared to five years ago, more small business owners identified the lack of relevant training available locally (16% in 2017 compared with 23% in 2022) as a top barrier to training.
- **Allowing for flexibility in nationally recognised qualifications to meet regional and local needs**. Qualifications should be designed to be based on a national core, with a flexible element to support regional needs. This way, learners can achieve a nationally recognised qualification whilst also developing skills specific to their regional or local needs. The flexible element can be taken from existing provision, or new content can be

developed by awarding organisations in partnership with regional bodies to the same standard as regulated qualifications, informed by occupational standards.

- **Allowing funding to support adults to engage**. Our 2023 Spotlight on the Lifelong Learning Entitlement report, which brought together expert roundtable discussions, desk research, and public polling, found that 31% of the under-45s questioned said a lack of time was the biggest barrier to learning new skills. The 2022 Quality Assurance Agency (QAA) for Higher Education report found that even much smaller microcredentials "widen access to learners who might not have considered a more traditional approach to achieving a qualification, as well as potentially assisting with meeting skills needs for employers and learners". Our own research found that 72% of the public think a microcredential course would help an employee find a job in a new industry, implying a significant enthusiasm for this mode of delivery. We would urge the government to keep pace with public appetites, and allow the Lifelong Learning Entitlement and the new Growth and Skills Levy, to fully embrace flexible learning models.
- **Allowing for bespoke programmes to support targeted on-demand upskilling to fill local skills needs where existing provision is not available**. These can be taken from existing provision or new content can be developed based on occupational standards. For example, Pearson is working with the West Midlands Combined Authority on providing regional skills data to inform their bootcamp provision to allow for a data driven approach to giving individuals the looking to upskill and progress in their career or to reskill in new and related sectors. The funding rules for the Adult Skills Budget, the new Growth and Skills Levy, and from 2027 the Lifelong Learning Entitlement, should also allow for the development of targeted bespoke regional skills provision.

9. **What more could be done to achieve a step change in employer investment in training in the growth-driving sectors?**

A number of organisations have explored the barriers to and incentives for increased employer investment in training including the Learning and Work Institute and the Edge Foundation.

We believe the policy solutions set out in Question 8 could help achieve a step change in employer investment in training i.e. if we are able to better define the skills needed for the future of the UK economy, set the broader strategy, and give employers the flexible training options they need, they are more likely to be confident that they are investing in the right skills with the right solutions. If these three areas were addressed employers would have a better understanding of their skills needs, have the confidence to invest in line with a broader strategy, and the skills system would be more flexible and better able to support their training needs.

**Business Environment - Innovation**

10. **Where you identified barriers in response to Question 7 which relate to RDI and technology adoption and diffusion, what policy solutions could best address these?**

We recommend the government share tech impact data with employers, so that organisations can plan their workforce sustainably and adopt technology with confidence. Without this, employers may follow a short-sighted fire and hire approach to tech transformation, instead of upskilling workers whose jobs are at risk from automation into new, in-demand roles within their organisation.

Such data would ideally include information about the approximate amount of time each technology can save on a task basis and across a number of years.

It would also feature information about how to futureproof each technology a company adopts. This would apply to both mature, widely used technologies such as Robotic Process Automation (using software bots to automate repetitive tasks and processes) alongside less mature areas like Smart Vision (using intelligent image/video processing to enhance object recognition, tracking & monitoring), so organisations can confidently plan where and when to invest.

This data will help companies plan when to retrain staff if their tasks are likely to be tech-impacted so their roles can expand. This would reduce anxiety about technology among workers.

11. **What are the barriers to R&D commercialisation that the UK government should be considering?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**Business Environment - Data**

12. **How can the UK government best use data to support the delivery of the Industrial Strategy?**

We recommend the UK government takes the following steps to use data to deliver the skills required for a successful Industrial Strategy. These steps were developed from our own research, including our Skills Maps.

**Step 1: Understanding the current labour market**

To be most effective in managing significant changes in the workforce we need detailed and up-to-date data on the current state of the labour market. This requires data on headcounts of specific jobs by region, ideally with data on salary and demographic data.

Pearson has developed a proprietary ontology of over five thousand jobs to provide the detail necessary for this type of challenge, with types of work, seniority levels and 24 defined job families. We also maintain and frequently refresh labour market data for the UK, drawing from census data, labour surveys, and current job ads, to provide the most up to date picture of employment.

**Step 2: Quantifying scenarios for regional and industry strategy**

To achieve growth on the scale required it will be necessary to develop industries in specific regions, with the ability to model multiple scenarios. This modelling helps us to consider the short-, medium-, and long-term investment needs. We will also need to understand how the workforce would develop without intervention, and to explore the impact of different levels of success of the changes made to achieve targets.

Pearson uses its Labour Market Insights model to create bespoke scenarios to address major top-down changes and interventions in labour markets while drawing insights from our detailed datasets. We have applied this approach to challenges like developing a sustainable renewable energy industry in Australia or assessing the impact of reducing a country's dependence on the petroleum industry in the Kingdom of Saudi Arabia and can use the same approach on a national, regional, local, and sectoral level.

**Step 3: Identifying the full range of jobs necessary to achieve the strategy**

Expanding industries or adding new ones requires many new vacancies to be filled. While the natural focus may be on the jobs that exemplify those industries, the reality may require a more rounded view. For example, a company producing solar panels likely employs engineers, but may also need software developers, accountants, and product designers.

**Step 4: Projecting the impact of technology and underlying economic factors on the workforce**

Many sectors are expected to undergo significant changes in the coming years through the impact of emerging technologies – individual jobs will change in many small ways in the coming years combining to create wide reaching effects. All levels of government need the tools to understand how the existing workforce must evolve to meet future needs.

We highlighted in question 2 our ability to model the projected adoption of technologies in different industries, and how the nature of work will change.

**Step 5: Identifying the skills requirements of the projected workforce to achieve strategies**

Modelling detailed projections of scenarios for a changing workforce is a powerful tool to understand and implement a broad and impactful strategy. But to implement change it is also important to understand work through the learned attributes of the people who do it. It is necessary to have a

detailed framework of skills that reflects who a person needs to be to succeed in a job, and how the requirement for skills will change in a changing workforce.

The Pearson taxonomy of skills includes over eight thousand skills drawn from millions of current job ads. Using natural language processing we can identify and extract skills and link them to specific jobs. We can also identify changing trends in the skills that are sought after in the market.

**Step 6: Identifying pathways from existing or declining jobs to new growing ones**

Workers in new industries and new jobs will need to be found. Creating new industries will mean moving workers forward in their career to better jobs and new opportunities. This requires identifying what skills are currently found in a workforce and how those skills overlap with the expected requirements for new jobs in the future.

Pearson uses its modelling **to provide a "job corridor", linking existing jobs and those expected to decline in the future, with growing opportunities** that are the best fit for the existing skills and experience, while identifying skills gaps that may limit those transitions. The level of proficiency needed in each skill can be compared between the roles.

**Step 7: Developing and highlighting the training necessary to move individuals into high quality jobs in the new labour market**

A final but crucial step in achieving real change in a workforce, is to provide individuals with the courses and content they need to equip them for the future of work. Strategic changes in industries and regions need to be linked to specific learning requirements for individuals. This is only possible in a structured way through ensuring a common language of data across different problems, to create joined up solutions.

Pearson uses data science to understand the knowledge and skills gained from different qualifications to highlight which qualifications can provide individuals with the knowledge and skills needed to support them to transition into new jobs. This matching of qualifications to skills needs can also help us identify gaps. This, coupled with our qualification and learning expertise, means we are quickly able to develop new course content to meet these needs.

13. **What challenges or barriers to sharing or accessing data could the UK government remove to help improve business operations and decision making?**

Our answer focusses on accessing the data needed to drive the skills necessary for a successful Industrial Strategy.

The first challenge is having a common language of jobs, tasks and skills across industries and organisations in the UK. While we have standardised classification systems for occupations and industries, the government does not provide a skill or task framework; this limits how to plan for the future of work. In addition, a static and infrequently updated occupation classification means that emerging roles are not picked up dynamically, such as Machine Learning Engineers or Change Managers.

This means that employers cannot easily identify the skills and tasks in their organisation, which is foundational to being able to make decisions on talent development, hiring activity and technology investment. To support the Industrial Strategy and break goals into actionable chunks, the government should ensure a common skill and task framework is available.

The second is enabling regional bodies, and other bodies in the skills system to access the data capabilities they need to drive local and regional skills needs. We say more about this in Question 8.

**Business Environment - Infrastructure**

14. **Where you identified barriers in response to Question 7 which relate to planning, infrastructure and transport, what UK government policy solutions could best address these in addition to existing reforms? How can this best support regional growth?**

We have not answered this question as we think others will be better placed to provide evidence for this.

15. **How can investment into infrastructure support the Industrial Strategy? What can the UK government do to better support this and facilitate co-investment? How does this differ across infrastructure classes?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**Business Environment - Energy**

16. **What are the barriers to competitive industrial activity and increased electrification, beyond those set out in response to the UK government's recent Call for Evidence on industrial electrification?**

We have not answered this question as we think others will be better placed to provide evidence for this.

17. **What examples of international best practice to support businesses on energy, for example Purchase Power Agreements, would you recommend to increase investment and growth?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**Business Environment - Competition**

18. **Where you identified barriers in response to Question 7 which relate to competition, what evidence can you share to illustrate their impact and what solutions could best address them?**

We have not answered this question as we think others will be better placed to provide evidence for this.

19. **How can regulatory and competition institutions best drive market dynamism to boost economic activity and growth?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**Business Environment - Regulation**

20. **Do you have suggestions on where regulation can be reformed or introduced to encourage growth and innovation, including addressing any barriers you identified in Question 7?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**Business Environment – Crowding in Investment**

21. **What are the main factors that influence businesses' investment decisions? Do these differ for the growth-driving sectors and based on the nature of the investment (e.g. buildings, machinery & equipment, vehicles, software, RDI, workforce skills) and types of firms (large, small, domestic, international, across different regions)?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**Business Environment – Mobilising Capital**

22. **What are the main barriers faced by companies who are seeking finance to scale up in the UK or by investors who are seeking to deploy capital, and do those barriers vary for the growth-driving sectors? How can addressing these barriers enable more global players in the UK?**

We have not answered this question as we think others will be better placed to provide evidence for this.

23. **The UK government currently seeks to support growth through a range of financial instruments including grants, loans, guarantees and equity. Are there additional instruments of which you have experience in other jurisdictions, which could encourage strategic investment?**

Education serves as a strategic soft power tool in government-to-government partnerships, significantly boosting the UK's capacity for international collaboration and trade. British expertise in education, demonstrated by Pearson's proven track record, can drive progress and prosperity across the globe, from the US to Vietnam. By building on these educational initiatives, the UK government can strengthen global relationships, fostering a positive atmosphere conducive to negotiating Free Trade Agreements and enhancing existing treaties such as the CPTPP. Highlighting the UK's commitment to educational partnerships showcases its role as a reliable partner committed to shared growth and development.

In government-to-business partnerships, fostering collaborations between large enterprises and SMEs in the education sector is pivotal. The UK government can enable SMEs to leverage the extensive networks and experience of larger businesses, which opens up access to international markets and supports scaling. Policy initiatives should promote these alliances, as partnerships not only improve SME capabilities and competitiveness but also support long-term, inclusive economic growth. Large businesses often partner with local SMEs for projects in regions where they lack direct presence, enabling a partnership approach for delivering education and skills solutions and expanding their collective impact.

International partnerships in the education and skills sector, whether government-to-government or government-to-business, can play a pivotal role in supporting the Industrial Strategy by fostering a collaborative environment that enhances economic growth and development.

24. **Which international markets do you see as the greatest opportunity for the growth-driving sectors and how does it differ by sector?**

We see the following international markets as the greatest opportunity for the growth-driving sectors: India, Indonesia, Vietnam, Saudi Arabia, Brazil. Most of these countries have been targets for the International Education Strategy (now under review), and also countries where Pearson continues to see growth and opportunities to further develop partnerships.

**Place**

26. **Do you agree with this characterisation of clusters? Are there any additional characteristics of dimensions of cluster definition and strength we should consider, such as the difference between services clusters and manufacturing clusters?**

In addition to the current characterisation of clusters, dynamic data could be leveraged to identify emerging clusters. For example, utilising job advert data at a local level (local authority / combined authority) can isolate an uptick in demand in groupings of skills, showing strong employer demand for additional investment in the area. This could be used to consider emerging high-potential areas where emerging sectors, jobs and skills should be concentrated.

27. **What public and private sector interventions are needed to make strategic industrial sites 'investment-ready'? How should we determine which sites across the UK are most critical for unlocking this investment?**

We have not answered this question as we think others will be better placed to provide evidence for this.

28. **How should the Industrial Strategy accelerate growth in city regions and clusters of growth sectors across the UK through Local Growth Plans and other policy mechanisms?**

Accelerating growth in locations with diverse needs and strengths requires a comprehensive, data-led understanding. This level of understanding needs to be quick enough to reach targets in the near future and stay up to date as the area evolves.

This is only possible through leveraging robust, dynamic workforce data at a local level. Local Growth Plans - and through a skills lens, Local Skills Improvement Plans - should be informed by the current and future skill profile of the local area, achievable through a joined-up ontology of skills, tasks and jobs.

A common language of data makes it feasible to see how employers in Darlington look for different skills compared to those in Manchester, even in the same industry or job context. We do for example, see different levels of skill demand even for the same role, comparing across different areas or regions. For example, high-ICT-growth clusters may be expecting more Databricks skills from their Data Analysts, while in slower-moving areas Data Analyst positions could be advertised

primarily with Excel skills required. Whilst this does not necessarily means a different solution is required for every region, it can help to focus on where the reskilling needs are. Likewise, demand for a skill soaring in Newcastle can demonstrate the need for targeted investment in local training courses.

29. **How should the Industrial Strategy align with devolved government economic strategies and support the sectoral strengths of Scotland, Wales, and Northern Ireland?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**Partnerships and Institutions**

30. **How can the Industrial Strategy Council best support the UK government to deliver and monitor the Industrial Strategy?**

We have not answered this question as we think others will be better placed to provide evidence for this.

31. **How should the Industrial Strategy Council interact with key non-government institutions and organisations?**

We have not answered this question as we think others will be better placed to provide evidence for this.

32. **How can we improve the interface between the Industrial Strategy Council and government, business, local leaders and trade unions?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**Theory of Change**

33. **How could the analytical framework (e.g. identifying intermediate outcomes) for the Industrial Strategy be strengthened?**

We have not answered this question as we think others will be better placed to provide evidence for this.

34. **What are the key risks and assumptions we should embed in the logical model underpinning the Theory of Change?**

We have not answered this question as we think others will be better placed to provide evidence for this.

**35. How would you monitor and evaluate the Industrial Strategy, including metrics?**

We have not answered this question as we think others will be better placed to provide evidence for this.

-Ends-