

Written evidence from Lightcast (SFF0017)

We write in response to your call for evidence in respect of the House of Lords' Industry and Regulators Committee inquiry into skills policy, *Skills for the Future: Apprenticeships and Training*. Given that our expertise lies in understanding skills demand, rather than public policy, our intention is simply to address the first part of question one: What kinds of skills do you think will be needed for the future of the UK economy?

About Lightcast

Lightcast (a merger of Emsi and Burning Glass Technologies) has over two decades experience providing trusted global labour market data and skills insights that empower communities, corporations, and learning providers to make informed decisions and navigate the increasingly complex world of work. Lightcast is active in more than 30 countries and has offices in the United States, United Kingdom, Canada, Italy, New Zealand, and India. The company is backed by global private equity leader KKR.

Lightcast's expertise can be summarised in the following types of datasets describing labour markets across the world:

Job Postings Data

A **Job Postings Library** made up of billions of job postings collected daily across the globe, which are cleaned, deduplicated, and classified to extract meaningful insights on things like location, industry, occupation, skills required.

Skills Library

An **Open Skills Library** of over 32,000 different skill terms, curated from the Job Postings Library, organised into a Skills Taxonomy of 32 categories and 400 subcategories, capturing all the skills employers mention in job postings.

Traditional Labour Market Information

Official government sources from around the world on industries, occupations, salaries, education, and demographics are collated and processed into **labour market datasets** that are more than the sum of their parts and easily intelligible.

Future Skills

Whilst we are not able to predict or forecast the skills that will be in demand in, say, a decade from now, our vast Job Postings Library and Open Skills Library

make us uniquely placed to understand current, growing and emerging skills demand – which are the best clues we have as to what is coming down the line.

In recent years, some of the biggest changes to the types of skills being demanded by employers have arisen in areas where there has been significant changes in technology and/or public policy, such as digitalisation, artificial intelligence (AI), and the green economy. A compendium of some of the research carried out in these areas using our data from the likes of UNESCO, OECD, World Bank, Brookings, MIT, The Royal Society, and The London School of Economics can be found [here](#).

In addition, we have also carried out our own research into some of these areas of rapid skills change. Below, we have summarised some of this research and our findings in these key areas of digital, AI, and green.

Future Skills: Digital

The digital revolution is affecting labour markets in profound ways, both in terms of specialised IT jobs where the constant emergence of new technologies guarantees change, and on a more general level, with most jobs now requiring competence in basic computer software. Research from the [**US-based National Skills Coalition**](#) suggested that 92% of jobs now require at least some digital skills, while a [**2023 Gallup and Amazon**](#) study using Lightcast data found the total annual global value of digital skills to be around \$18.5 trillion – 12% of global GDP.

Yet although digital skills are clearly vital, there are often large gaps between the expectations of employers regarding digital skills and what they are finding in the labour market. For instance, according to the [**European Commission**](#), 70% of businesses in Europe have said that a lack of digital skills is an obstacle to investment, and 40% of adults in Europe lack basic digital skills.

The prerequisite to closing digital skills gaps is to first understand what it is that employers need. As part of our contribution to gaining this understanding, we recently created [**The Lightcast Digital Skills Outlook 2024**](#) (known hereafter as The Outlook), which is an interactive page using our skills insights from online job postings to highlight a number of key trends in the digital skills revolution across 15 global labour markets.

Amongst other things, The Outlook identified the fastest growing skills in each country (defined as those that appeared in more than 0.1% of total job postings in 2022, and then saw the most growth in 2023), as well as the top emerging skills (those that appeared in less than 0.1% of total job postings in 2022, but then saw the most growth in 2023).

For the UK, we found that the fastest growing digital skills included a number of those that are ubiquitous across many industries – such as Microsoft 365, Microsoft Outlook, and Google Workspace – as well as those that are more specific to IT jobs, such as Classification And Regression Tree (CART), Digitisation, and Business Metrics. As for emerging skills, here we found them all to be niche digital skills, such as Web 3.0, Kubectl, and Stablecoins. There were also some which are more well known, being connected with technological shifts that have made news headlines, such as Generative Artificial Intelligence and Cloud Platform Systems.

An important factor is that digital skills demand is not the same in all places. To demonstrate this, The Outlook contains a map of City Hotspots, showing the niche digital skills requested by employers in cities throughout the countries examined. Additionally, we created a number of reports giving further details of digital skills demand in these cities. Reports for the 40 most populous cities in the UK are available upon request.

Further resources on how our data can help identify current, growing, and emerging digital skills can be found [here](#) and [here](#).

Future Skills: Artificial Intelligence

In September 2021, the UK government published its **National AI Strategy**, laying out “a ten-year plan to make Britain a global AI superpower”. In response, Lightcast published a report the following year – *Artificial Intelligence in the UK* – exploring the relevance of AI in the digital transformation of the UK labour market (a copy of the report can be downloaded [here](#), or is available upon request). In particular, the report used our data and insights to shed light on the following questions:

- How does demand for AI skills in the UK compare to other countries?
- Which industries, regions and occupations have the highest demand for AI skills?
- What are the most important AI skills currently being requested by employers?

Among the key findings were the following five which are pertinent to the question of future skills:

1. Demand for AI, measured by the share of online job postings requesting AI skills, has more than tripled over the last decade in the UK, from approximately 0.3% in 2012 to around 1% in 2021, with demand continuing

to grow in the first quarter of 2022.

2. Of the job postings requesting AI skills, those relating to Machine Learning have grown the most over the past few years, more than doubling their share of the overall labour market between 2016 and 2020.
3. The number of job postings mentioning AI skills increased across all industries from 2015 to 2021, with the highest share being in Information and Communication; Finance and Insurance; and Professional, Scientific, and Technical Activities.
4. The list of local hotspots of AI demand across the nation is dominated by Cambridge, where 2.6% of all job postings mention AI skills, followed by Greater London (2.2%), Oxford (1.9%), Andover (1.6%), and Edinburgh (1.4%).
5. The occupation with the highest demand for AI skills over the past decade is Software Developer/Engineer, but a number of other occupations have also seen significant growth in demand, such as Data Scientist and Data Engineer.

This importance of this research was recognised in a 2023 Parliamentary report, ***Data Science Skills in the UK Workforce***, which cited our international comparison of AI skills demand, as well as research conducted by one of our pre-merger companies – Burning Glass Technologies. In addition, Lightcast also worked with a data visualisation company to produce an interactive map and charts exploring AI diffusion at the national, regional and county levels, which you can find **here**.

For further reading on how our data can be used to identify labour market trends for AI skills, see Lightcast's contribution to Stanford University's **AI Index Report** (particularly chapter 4), which highlights the most sought-after AI skills in the US labour market. A similar analysis is possible for the UK labour market.

Future Skills: Green Skills

With the UK government's policy commitments relating to environmental issues, the shift to the so-called "green economy" has taken on critical importance in recent years. However, one of the challenges that crops up time and again in relation to this topic is that there is currently no official definition of which industries, jobs, and skills actually constitute the green economy. For example, with no Standard Industrial Classification relating to green or environmental

services and products, companies that might potentially be included under such a definition are forced to declare their organisation under the somewhat nebulous category, “Other business service activities n.e.c.”

With no official definitions to hand, but with growing demand from various organisations for insights on the green economy, Lightcast used its **Job Titles Library**, which contains over 75,000 standardised job titles collected from job postings and profiles, to create our own definition of the green economy, comprising over 370 green job titles and almost 230 unique green skills.

This definition allows us to interrogate and analyse data at the international, national or local levels to identify job postings containing green jobs and skills. Although we haven’t yet done this for the UK, the Brussels-based Think Tank, **Bruegel**, recently used this methodology and data to create the **Twin Transition Skills Dashboard**, which looks at changing demand for AI and green skills.

Among other findings, the dashboard shows that the top three green skills across the EU as a whole had changed from Recycling, Nuclear Power, and Waste Management in 2019, to Recycling, Energy Transformation, and Environmental Protection in 2023.

Not only can this methodology be used to identify current, growth and emerging skills within the green economy as a whole, it can also be used to identify green skills within particular industries. For instance, in a 2023 Lightcast report for the professional body, EngineeringUK – **Engineering skills needs - now and into the future** – as well as looking at engineering skills across the economy, the research also focused on the relationship between the engineering footprint and the green economy. Among the findings were the following:

- Environmental Engineers, Renewable Engineers and Environmental Consultants are among the most frequently appearing green job titles related to engineering.
- Environment health and safety, water treatment and environmental laws are among the top demanded green skills across the engineering footprint
- New green skills related to engineering that have emerged in the last five years include electric vehicles, net zero, and ESG reporting standards.

Further details of our work in this area can be found in our blog, **Understanding and Adapting to the Emerging Green Economy**.

Conclusion

What we've presented above gives a summary of some of the research carried out by Lightcast or using Lightcast data, which helps to understand current, growing and emerging skills in some of the most rapidly changing areas of the UK economy. The potential exists to carry out similar research on a UK-wide or regional level, aimed at identifying current, growing and emerging skills across all sectors and occupations, or with a focus on specific industries and jobs.

24 May 2024