New research reveals the most pressing opportunities and barriers to trustworthy innovation in data and AI

- A CDEI survey of almost 1,000 businesses reveals how AI and data is being used across the UK — and highlights the sectors where there is greatest innovation.

- The CDEI's AI Barometer, informed by the insight of over 80 sector experts, highlights the most pressing opportunities and challenges for trustworthy innovation.

- New research follows the publication of the CDEI's AI assurance ecosystem roadmap, which sets out the steps required to build a world-leading ecosystem of products and services that can give organisations greater confidence to invest in AI.

A major new survey of British businesses, commissioned by the Centre for Data Ethics and Innovation (CDEI), the government's expert body on trustworthy innovation in data and AI, has revealed the importance of supporting companies to adapt to an increasingly data-driven world.

The survey highlights significant variation in the penetration of data-driven technologies across sectors of the economy. For instance, while there is comparatively lower adoption of data-driven technologies in healthcare businesses (12%), the industry has the highest proportion of extensive AI use (10%). This contrasts with digital and communications businesses, where one-in-five (21%) businesses use data-driven technologies, but only one-in-20 (5%) extensively use these technologies.

This research reveals a range of barriers that, once overcome, will enable the UK to build on its strong foundations and grasp the opportunities presented by greater adoption of data driven-technologies.

Key barriers highlighted in the research relate to the access and sharing of data. Over two thirds (70%) of businesses said they desired more information to help them navigate the often complex legal requirements around data collection, use and sharing. Nearly a quarter (23%) of businesses cited difficulty accessing quality data as a barrier to innovation, while almost half of businesses (43%) highlighted limited technological capabilities. These findings align with recent research published by DCMS on barriers to data access across the economy.

The CDEI has also published the second edition of its AI Barometer, an analysis of the most pressing opportunities and risks associated with AI and

data use. Drawing on the insight of over 80 expert panellists, the report identifies areas where there are untapped opportunities for innovation in three key sectors which have been particularly affected by the COVID-19 pandemic:

- In **transport and logistics**, these include opportunities to improve energy efficiency, drive down emissions, and yield better environmental outcomes, as well as smooth trade flows at borders.

- In **recruitment and employment contexts**, data-driven innovation has the potential to improve talent pipelines, enable greater access to job opportunities and reduce bias and discrimination.

- In **education**, data-driven innovation was seen to have the potential to reduce the administrative burden on teachers and increase social mobility.

The CDEI is already taking steps to help the UK seize these opportunities. Last week, it set out the steps required to build a world-leading ecosystem of products and services that can verify that AI systems are effective, trustworthy and compliant with regulation. These tools will help to give organisations the confidence they need to invest and realise the benefits of AI. The CDEI is also working closely with the Office for Artificial Intelligence on the upcoming AI White Paper, which will highlight the role of assurance both as a market-based means of managing AI risks, and as a complement to regulation, that will empower industry to ensure that AI systems meet their regulatory obligations.

Building on insights from the AI Barometer, last week new industry-led guidance into the responsible use of AI in recruitment was published by the Recruitment and Employment Confederation, developed in partnership with CDEI.

The CDEI also works alongside teams in DCMS to deliver the National Data Strategy and enable trustworthy access to quality data, by exploring new approaches to data governance (such as data intermediaries) and emerging technical solutions (including through a new UK-US R&D effort to mature privacy-enhancing technologies, announced last week). The government recently published a policy framework setting out its approach to unlocking the value of data across the economy, to deliver on Mission 1 of the National Data Strategy.

Edwina Dunn, Interim Chair of the Centre for Data Ethics and Innovation, said:

> Data and AI can help tackle some of the greatest challenges of our time. In order to achieve this, we need to overcome barriers to innovation, such as poor quality data, and address risks such as algorithmic bias. The CDEI is working in partnership with a range

of organisations to help them overcome these barriers, mitigate risk and put high-level ethical principles — such as accountability and transparency — into practice. It's practical work like this that will enable us to build greater public trust in how data and AI are used.

Chris Philp MP, Minister for Technology and the Digital Economy at the Department for Digital, Culture, Media and Sport, said:

Data and AI can be harnessed to support both our economic and social recovery as we look to build back better. Understanding how we can best use technologies to address major shifts in labour markets and the ways that we work, deliver education or decarbonise our transport infrastructure, will be crucial to this mission. I look forward to working with organisations across the UK to address the barriers to innovation highlighted in the CDEI's analysis, so that the UK can unlock the full potential of data and AI.

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Notes to editors:

- The CDEI is a government expert body enabling the trustworthy use of data and AI. Its multidisciplinary team of specialists, supported by an [advisory board](#) of world-leading experts, work in partnership with organisations to deliver, test and refine trustworthy approaches to data and AI governance.

- To produce the report, the CDEI conducted an extensive review of policy and academic literature, and convened over 80 expert panellists. The CDEI used a novel comparative survey to enable panellists to meaningfully assess a large number of technological impacts; the results of which informed a series of workshops. It also commissioned Ipsos MORI to survey 965 businesses across eight sectors between March and May 2021, including vendors, users and non-users of data-driven technology.

- In June 2020, the CDEI published the first iteration of its [AI Barometer](#), which assessed the opportunities, risks, and governance challenges associated with AI and data use across five key sectors (including criminal justice, financial services, health and social care, digital and social media, and energy and utilities).

- The CDEI's 2021/22 work programme is focused on three areas, aligned with the priorities set out in the [National Data Strategy](): enabling trustworthy access to and sharing of data; building a strong AI assurance ecosystem in the UK; and supporting the delivery of transformative data and AI projects in the public sector.