



May 2025

Technology and Innovation in the UK

Why the United Kingdom Is Europe's Leading Center for Venture and Startup Investment

Acknowledgments

This report was prepared by Sean Randolph, Senior Director at the Bay Area Council Economic Institute, with support from Research Associate Estevan Lopez. The Institute wishes to thank the British Consulate General in San Francisco and the Foreign, Commonwealth, and Development Office of the United Kingdom for their support, as well as the following individuals who generously shared their time and insights.

Amaan Ahmad, Co-Founder and CEO, PathFinder

Shawn Atkinson, Partner, London Corporate Practice Leader, and Technology Companies Group Lead Partner for Europe, Orrick, Herrington & Sutcliffe LLP, UK

Martin Banbury, Founder & CEO, Streetify

Alice Bentinck, CEO, Entrepreneurs First

Kieran Borrett, Director, Plug and Play UK

Matthew Caron, Deputy Director–Technology, UK Department for Business and Trade, San Francisco

Daniel Castillo, Startup Ecosystem Platform & Partnerships Lead, DEEP Ecosystems

Mark Charkin, Executive Director, GBx

Adam Cragg, Partner, Osney Capital

John Cumbers, Founder & CEO, SynBioBeta

William Cutler, Head of Tech Policy and Deputy UK Tech Envoy to the US, San Francisco

Daniel Doulton, CEO & Co-Founder, Solaris Suborbital

Oliver Gunasekara, CEO and Co-Founder, Impossible Metals

Vibhor Gupta, Co-Founder, Pangaea Data

Cole Harry, Programme Director, Imperial Global USA

Geoff Headington, Managing Director–Climate Tech, USBC Innovation Banking

Jennifer Keane, Co-Founder and CEO, Modern Synthesis

Regis Kelly, Former Executive Director, QB3; Byers Family Distinguished Professor, University of California

Sarwar Khan, Director of Government Affairs, UK & Ireland, Salesforce, Inc.

Thomas Kösters, Managing Director, DEEP Ecosystems

Tom Morrison-Bell, Senior Manager–Government Affairs and Public Policy, Google UK

Brennan O'Donnell, Partner, Frontline Ventures

Stephen Ozoigbo, Head of Government Partnerships and Ecosystems, Arm

Alastair Paterson, CEO and Co-Founder, Harmonic Security

Eli David Rokah, CEO, StartupBlink

Sara Rona, Managing Director and Head of UK/Europe, MENA & ANZ, Silicon Valley Bank

Rodolfo Rosini, CEO and Co-Founder, Vaire Computing

Andrew Scott, Founding Partner, 7percent Ventures

Molly Simpson, Content Strategist, Modern Synthesis

Jessica Sullivan, Director, Design and Engineering Specialty Disciplines, NA, Vantage Data Centers

Andy Tsao, Head of Global Gateway, Silicon Valley Bank

Caroline Winnett, Executive Director, Berkeley SkyDeck

Contents

Executive Summary	2
An Evolving European Technology Landscape	11
Situating the UK in Europe	12
Trend	18
Measuring Tech and Startup Competitiveness	23
Global and European Indexes	23
Technology Drives FDI (Foreign Direct Investment)	26
Startups, Universities, and Venture Capital	27
Distributed Innovation	30
National Policies and Initiatives	
Supporting Technology Innovation	37
US-UK Technology Investment	40
Bay Area Technology Investment in the UK	41
Investing in Research and Data Infrastructure.....	41
Technology Companies	41
Bay Area Foreign Direct Investment	
in the United Kingdom	43
Venture Capital	45
UK Tech in the Bay Area	47
The Startup Bridge: Early-Stage Companies	
in the UK and Silicon Valley	49
Where Next?	53
Atlantic Declaration	53
Challenges and Change in the UK.....	53
The UK-Silicon Valley Opportunity	57
Notes	59



British Embassy
Washington

From the Ambassador

The Rt Hon Lord Mandelson PC

His Majesty's Ambassador
3100 Massachusetts Ave, NW
Washington, DC 20008

Tel: +1 (202) 588 6511

**Bay Area Council Economic Institute: Technology and Innovation in the UK
UK Leads as Europe's Key Center for Venture and Startup Investment**

The U.K. is the leading European country for game-changing science and technology. It is home to world-class innovators with the skills, ingenuity and restless ambition to accelerate breakthroughs in the industries of the future.

This excellent report by the Bay Area Council Economic Institute highlights the U.K.'s trillion-dollar tech sector as the pre-eminent investment destination of choice for American investors from the Bay Area and beyond. Driven by an enduring spirit of innovation, the U.K.'s technological competitiveness is founded upon the research and innovation capabilities of the world's top universities, a pipeline of outstanding talent, agile regulation and a proactive focus on global expansion.

British start-ups backed by shrewd American investors and VCs have long proved a winning combination to push the boundaries of discovery and drive economic growth. In the decade to 2024, investments from Bay Area companies into the UK totalled \$8.6bn, creating more than 18,000 jobs in sectors from electronics to energy, from life sciences to information technology. As highlighted in this report, early-stage investment in emerging British companies has so often catalysed further growth and expansion in the United States. Today, the U.K. is the top foreign investor in California with more than 1,900 businesses supporting at least 100,000 jobs.

Our two science-rich nations, the U.S. and U.K., are the only two Western countries with trillion-dollar technology eco-systems. Together, we are natural allies to deliver the generational advances that will redefine the century ahead in Artificial Intelligence, life sciences, bio tech, fintech and quantum computing.

In an era of heightened competition and contest, we cannot afford to stand still. The UK Government is clear: now is the time to back the innovators at the tech frontier. We stand at the foothills of this next great foundational technology that will redefine the century ahead, accelerating every other endeavor and discovery we want to undertake. Our ambition is to be the best state partner for investors anywhere in the world. Instead of over-regulating new technologies, we are ushering in a golden age of reform to make it easier to set up and scale businesses.

We are taking decisive actions to strengthen our infrastructure, data and talent base. We are ready to build the next generation of laboratories, gigafactories, data centres, and digital network grid connections.

Now is the moment to back the innovators at the tech frontier. The United Kingdom is open for business, open for investment and determined that technology and innovation delivers on its fundamental promise to improve the daily lives of all our citizens.

Lord Mandelson
British Ambassador to the United States

Executive Summary

The UK today stands as Europe's premier center for technology innovation, venture investment, and startup activity, and while other European centers are growing, the UK retains the prime position. This report examines the institutional and scientific roots of its competitiveness, its vibrant startup economy, and the opportunities they present for Bay Area and other US investors and economic partners.

An Evolving European Technology Landscape

Recent years have seen a rise in entrepreneurship across Europe, with the number of new tech startups exceeding the number in the US each year between 2018 and 2023. Overall, Europe's share of global venture investment is approximately 20%, up from 5% 20 years ago.

Situating the UK in Europe

Within Europe, the UK leads in venture and startup innovation across multiple measures. Several factors explain the durability of the UK's position:

- The UK started earlier than other tech clusters in Europe.
- London's position as a major financial center meant that investment capital was readily available as the technology economy took off.
- The UK has historically been a bridge to Europe for US and other companies and before Brexit was the natural choice for companies seeking to develop a European presence.
- Britain's English-speaking business culture and appetite for risk (higher than in most of Europe) created an environment attractive to startups and conducive to investment.

Brexit negatively affected the UK's economy in some respects but did not significantly impact the UK's position in startup activity and venture capital, which was less tied to European markets and more deeply based in ecosystem assets inherent in the UK.

The UK has maintained a strong lead in capital invested in tech companies and is home to the largest number of

tech startups founded in Europe each year, accounting for one quarter of all new companies. It is also home to the largest number of funded technology companies in Europe, with close to 13,000. It leads Europe in the number of unicorns. Of the eight European countries with more than ten current unicorns in 2023, the UK led the count with 104, followed by Germany (54) and France (38). Almost half of all \$B+ exits in Europe in the past ten years have taken place in the UK, including the two largest—IHS Markit and Arm. Those investment flows are mirrored by the concentration of tech employees, where the UK leads other European countries by a large margin.

At the city level, London also leads venture investment in Europe by a large margin, with \$13.7 billion invested in 2023, compared to Paris (\$5.3B), Stockholm (\$4.8B), and Berlin (\$2.8B). London accounted for 65% of total VC investment across the UK. Over the ten-year period 2015–2024 it has attracted the highest volumes of capital investment of any European City.

Another way to measure technology and innovation is through "scaleups" (startups that have raised \$1 million or more). A 2024 report from Mind the Bridge places the UK #3 in the world in its number of scaleups (5,240), behind only the United States (37,305) and China (11,747). Measured by "scalers" (scaleups that have raised \$100 million or more) the UK holds the #5 spot with 267, behind the United States (3,223), China (949), India (284), and Israel (280). By both measures—scaleups and scalers—the UK's ecosystem ranks #1 in Europe.

The UK's innovation ecosystem has an H1 2024 estimated value of \$1.1 trillion, representing 30% of all European value created. This makes the UK the third most valuable tech geography in the world after the United States and China. At the city level, London is the world's sixth-largest city when measured by tech value. With its concentration of investment and other innovation assets, London has been identified as the number one place in Europe where entrepreneurs would choose to found a company, followed closely by Berlin, in every annual Startup Heatmap Europe poll since the survey began in 2016.

AI

The value of AI startups in the UK has passed \$250 billion, accounting for 22% of tech ecosystem value.

On the 2024 list of top 10 countries by AI funding total, the UK ranks third, behind the US and China. In the generative AI segment, UK investment ranks fourth in the world, behind the United States, China, and Israel.

Fintech

Mirroring a global dip in funding, in 2024 investment in fintech hit a four-year low (\$9.9 billion compared to \$13.6 billion in 2023). The UK, however, still attracted close to half the total fintech funding in the EMEA (Europe, Middle East, Africa) region,

Measuring Tech and Startup Competitiveness

Global and European Indexes

Global indexes of startup ecosystems consistently place the UK in the top ranks.

The **StartupBlink Global Startup Ecosystem Index 2024 (GSEI)**, measures startup environments in 1,000 cities in 100 countries. In its top 100 countries ecosystem rankings, the United States holds the number 1 place, followed by the UK at number 2. In continental Europe, Sweden ranks number 6, Germany 7, France 8, the Netherlands 9, and Switzerland 10. Looked at through the lens of cities, the UK has four cities in the GSEI global top 100 cities list. San Francisco leads that list by a large margin, followed by New York at number 2. London ranks number 3, and number one in Europe, ahead of Paris (10), Berlin (13), and Stockholm (26). The other UK cities in the global top 100 are Cambridge (72), Manchester (85), and Oxford (99).

fDi European Cities and Regions of the Future 2025 ranks London at number 1 in the *major cities in Europe* category in terms of its attraction of foreign direct investment (FDI). UK cities ranking well in other categories include Manchester, which places tenth among *large European cities*. Three UK cities placed in the *mid-sized European cities* category, with Edinburgh at number 4, followed by Belfast at number 5, and Bristol at number 8. Three UK cities also ranked among *small European cities*, with Cambridge at number 4, Oxford at number 8, and Reading at number 9.

The **WIPO Global Innovation Index 2024 (GII)** measures ecosystem performance in 133 countries across a range of measures. The 2024 index ranks the UK number 3 in Europe, after Switzerland and Sweden, and number 5 in the world after Switzerland, Sweden, the United States, and Singapore. In the GII's listing of the top 100 global science and technology (S&T) clusters, Cambridge and the San Jose-San Francisco Bay Area rank as the world's two most S&T-intensive clusters, measured by R&D relative to population density.

Technology Drives FDI (Foreign Direct Investment)

Growth is being led by investment in digital technology, with the UK accounting for 27% of all European digital technology investment projects. The UK recorded 255 technology investment projects in 2023, an 8.9% increase from 2022. The United States was the top investor, with 22% of all UK FDI projects originating in the US.

AI

AI has emerged as the UK's most dynamic sector for tech investment. The \$3.4 billion raised by UK AI startups in 2023, a 10% increase over 2022, placed the UK first in Europe for AI funding. A relatively small part of that was invested in generative AI (\$321 million), with most going to companies in the enterprise software, transport, and fintech sectors. Two-thirds of AI startups are based in London, with significant clusters in Oxford, Cambridge, Edinburgh, and Manchester.

Startups, Universities, and Venture Capital

London is the center of venture and private equity activity in the UK, followed by Cambridge, Oxford, Edinburgh, Manchester, and Glasgow.

The UK is home to nearly 550 venture and PE funds, with the lion's share—about 80%—based in London. Angel investment groups are another significant funding source for UK startups, with approximately 60 angel networks active across the country. Overall, there are roughly 11,000 active business angels, with about 70% located in London.

University spinouts are a fertile field for technology investors and, to a large degree, define the investment landscape. Approximately one-third of investment in university spinouts comes from outside the UK. Among foreign investors, the United States leads by a large margin in the number of equity deals financed. The United States also leads in acquisitions of UK spinouts.

Even in a weak market, some verticals have shown strength. Life sciences and AI, where the UK has a competitive advantage, accounted for the largest share of deals from the second half of 2023 through the first half of 2024.

While most early-stage investment in the UK comes from local venture firms, most later-stage investment comes from the US. UK technology companies that go public primarily list in the US, where the pool of capital is larger, despite efforts by the London exchange to encourage local listings. The US is also the primary overseas market—ahead of Europe—for technology and life sciences startups when they expand globally.

Distributed Innovation

Research universities are at the heart of the UK's technology innovation system. The U.S. News and World Report 2024–2025 university survey includes eleven UK universities in its Top 100 Global Universities ranking, with three in the top ten:

- University of Oxford (#1 in the UK, #4 globally)
- University of Cambridge (#2 in the UK, #6 globally)
- University College London (#3 in the UK, #7 globally)
- Imperial College London (#4 in the UK, #12 globally)
- King's College London (#5 in the UK, #36 globally)
- University of Edinburgh (#6 in the UK, #38 globally)
- University of Glasgow (#7 in the UK, # 61 globally)
- University of Manchester (#8 in the UK, # 67 globally)
- Queen Mary University London (#9 in the UK, #92 globally)
- University of Birmingham (#10 in the UK, #94 globally)
- University of Bristol (#11 in the UK, # 96 globally)

Within Europe, the UK is the leading country for university spinouts, with Cambridge and Oxford

universities ranked number 1 and 3 by value produced. Reflecting the role their universities play, the cities of Cambridge and Oxford also account for the most venture capital raised in the UK outside London, followed by Edinburgh and Manchester.

London is the heart of the UK's innovation system, which extends to the nearby cities of Oxford and Cambridge—sometimes referred to as the Oxford-Cambridge Arc. The city concentrates university research, venture capital, and startups, as well as large numbers of incubators, accelerators, and co-working spaces. Research universities with strength in technology include Imperial College London, University College London, King's College London, and Queen Mary University of London.

Though concentrated in the Greater London Area, technology and startup activity is widely distributed across the UK, in cities such as Cambridge, Oxford, Manchester, Glasgow, Edinburgh, Bristol, and Belfast. Some cities like Glasgow (health) and Belfast (cybersecurity) have distinct strengths while others claim unique assets—Bristol, for example, is home to the Bristol Robotics Laboratory; to the newly built Isambard-AI2 supercomputer (hosted at the University of Bristol and the fastest in the UK); and to strong university aerospace programs. Not surprisingly, in all these cities access to talent is a driver and the presence of leading universities plays a central role.

Manchester

The birthplace of the Industrial Revolution, Manchester has emerged early as a center for digital activity. Today, approximately 28% of jobs based in Manchester are in the digital technology sector. Cybersecurity is a major focus, attracting the cyber divisions of global defense companies such as Raytheon, BAE Systems AI, and Northrop Grumman, as well as the UK's government security agency GCHQ.

The city's innovation system builds on key universities: Manchester Metropolitan University, the University of Salford, the University of Bolton, and particularly the University of Manchester, which hosts over 40,000 students and ranks 4th in the UK for engineering and technology after Oxford, Cambridge, and Imperial College. In the summer of 2024, UK semiconductor

giant Arm Holdings expanded its presence, doubling its footprint in the city. Other major tech global companies with a footprint in the city include Booking.com, IBM, Amazon, Microsoft, and Google.

Glasgow

In Glasgow, three universities—the University of Glasgow, the University of the West of Scotland, and the University of Strathclyde—play key roles. The city's ecosystem hosts startups and scaleups with a collective value of more than £4 billion, with 30% of total enterprise value coming from university spinouts. Key technology sectors include food, education, enterprise software, sensing, robotics, photonics, climate, space, and particularly healthtech—which accounted for over 50% of all investments through 2023.

Belfast

Queen's University Belfast and Ulster University anchor research and entrepreneurial development. The city's growing knowledge economy centers on healthtech, hardware, the Internet of Things (IoT), and social media—fields that account for 40% of Belfast's startups. Belfast is particularly strong in cybersecurity.

Oxford

The 2024 WIPO Global Innovation Index ranks Oxford as one of the top science and innovation clusters in the world by intensity, based on the per capita production of patents and scientific articles—indicators of the presence of inventors and scientific authors. Its innovation system is centered on the University of Oxford, which leads UK universities in patent filing. There are 2,950 technology companies in the Oxfordshire region employing 29,000 people, with 12,000 employed in R&D-intensive activities. Of those companies, 1,500 are science, engineering, or mathematics based. Oxford has depth across a range of technologies, including energy, life sciences, autonomous mobility, quantum computing, materials science, chemistry, and data science.

Anchors for research and innovation include charities such as the Oxford-based Wellcome Trust, which disburses approximately \$1.6 billion in research funds each year; the Wellcome Sanger Institute, which specializes in genomic sequencing; the Jenner Institute; and pharmaceutical companies GlaxoSmithKline and AstraZeneca, which produced the Oxford-AstraZeneca COVID-19 vaccine.

Cambridge

While London dominates the UK tech scene, Cambridge has risen to prominence in both UK and European contexts. The city excels in startup activity and VC investment in deeptech and in fields such as generative AI, autonomous mobility, quantum computing, semiconductors, AI drug discovery, and oncology. As a deeptech hub, Cambridge ranks #3 globally, behind the Bay Area and Boston. Accounting for 18% of the total value of UK tech, it ranks as the number one city in the world for the production of unicorns per capita, ahead of the Bay Area. With 36 research parks and more than 5,000 innovation-led companies with a combined value of \$191 billion in 2024, noteworthy companies to emerge from the city's technology ecosystem include semiconductor company Arm, Darktrace (cybersecurity), and Wayve (autonomous vehicles).

The city's innovation ecosystem is anchored by the University of Cambridge, which ranks number one in Europe for university-related spinouts. Of 62 venture capital rounds in the city through the third quarter of 2024, nearly half (29) were raised by founders connected to the University.

National Policies and Initiatives Supporting Technology Innovation

Several government policies and initiatives are in place that support the UK ecosystem.

The **Enterprise Investment Scheme (EIS)** provides tax benefits for individual investors in unlisted early-stage companies. A parallel incentive for very-early-stage companies, the **Seed Enterprise Investment Scheme (SEIS)**, provides tax relief for individual investors who buy shares of unlisted companies. The **Venture Capital Trust Scheme (VCT)** encourages individuals to invest indirectly in portfolios of small, higher-risk companies through Venture Capital Trusts. **R&D tax relief** is available for qualified small and medium enterprises (SMEs) that work on innovative projects in science and technology.

The **Science and Technology Framework** establishes a vision and goals through 2030, with a focus on

five technologies: AI, engineering biology, future telecommunications, semiconductors, and quantum. **UK Research and Innovation (UKRI)** funds scientific research, with a particular concentration on life sciences. **Innovate UK**, part of UKRI, is the UK's national innovation agency. The **Innovate UK Catapult Network** supports nine technology and innovation centers in more than 65 locations in the UK, facilitating university-industry collaboration and providing access to R&D facilities and ecosystem services.

The **National Quantum Strategy** is a ten-year vision designed to advance the UK's position as a world-leading center for quantum science and engineering. The UK government's **AI Opportunities Action Plan**, published in January 2025, sets out how the government plans to seize the opportunities of AI.

US-UK Technology Investment

Over the past ten years on average, 64% of venture investment in tech startups in the UK has come from overseas. The United States has been the largest investor, accounting for 26%. In 2023, the investment from the US was 28%, with internal UK investment accounting for 32%. The top five investors by VC deal count from 2020 to 2023 included Plug and Play Tech Center, with 204 deals.

Bay Area Technology Investment in the UK

Technology Companies

Leading Bay Area technology companies have established major operations in London and elsewhere in the UK in fields spanning engineering, sales, and research. Prominent among them are

- Google
- Meta
- Apple
- Uber
- Netflix
- X
- Intel
- Cisco
- Oracle
- eBay
- Adobe
- Nvidia
- Electronic Arts
- VMware
- PsiQuantum
- Salesforce

In the first half of 2024, investment by large US technology companies in Europe grew dramatically, driven by the large-scale funding of AI unicorns, with Nvidia investing in UK company Wayve's \$1.05 billion Series C round led by Softbank. Of the 7 European tech startups that have gone public with backing from big tech companies, 5 are from the UK, with Google being an investor in two.

Google DeepMind is the product of Google's acquisition of British AI company DeepMind in 2014 and its subsequent merger with Google's Brain team in 2023. Headquartered in London and with research centers in the United States, Canada, and France, the company serves as Alphabet/Google's advanced AI research laboratory.

Bay Area Foreign Direct Investment in the United Kingdom

Bay Area companies have been major drivers of foreign direct investment (FDI) in the UK. From 2014 through 2024, there have been 647 distinct investments from Bay Area companies into the United Kingdom, totaling \$8.6 billion. The largest deal for a single-year period was by Google in January 2024, with an expenditure of \$1 billion in artificial intelligence, cloud computing, and data centers. Salesforce had the largest overall number, with \$2.5 billion invested over a five-year period from June 2018 through June 2023, and a goal of investing \$4 billion in the UK through 2028.

ICT and Electronics, Energy, and Life Sciences Dominate FDI from Bay Area Companies into the UK

Bay Area investment is particularly focused in energy, life sciences, and ICT and electronics, which has attracted \$6.9 billion in FDI. In the energy sector, which attracted \$795.3 million in FDI, Bay Area companies such as Tesla and Google have made substantial investments in renewable energy and sustainable energy technology. The life sciences sector has also seen significant FDI, with \$673.4 million invested by companies like Gilead Sciences, Prologis, and Genentech into operations in the UK's biotech hubs.

In November 2024, San Francisco-based developer Prologis announced an investment of \$635 million into the expansion of its biomedical hub at the Cambridge Biomedical Campus.

Where are Bay Area Companies Investing in the UK

Foreign direct investment by Bay Area companies is spread across multiple cities, led by London, Manchester, and Cambridge. London remains the dominant recipient. Manchester, a growing hub for tech, creative industries, and advanced manufacturing, has seen a surge, with nearly \$1 billion in investments from 15 deals between 2014 and 2024. Cambridge has also seen a steady rise, with \$642.7 million in FDI, concentrated in biotech, life sciences, and digital innovation.

Venture Capital

Bay Area firms are among the top venture investors in the UK. Accelerators and venture firms with an active UK presence include

- 500
- Index Ventures
- Accel
- Sequoia Capital
- Draper Esprit
- Bessemer Venture Partners (office in Cambridge)
- Next Ventures
- Ten Eleven Ventures
- Plug and Play Tech Center

Bay Area accelerator **Plug and Play**, which has invested in UK startups from the United States over the last ten years, has dramatically increased the number of its investments together with investment across Europe. Seminal Bay Area accelerator **Y Combinator**, which accepts large numbers of international companies to its program in San Francisco, is a major investor by deal count in UK startups, with UK companies constituting the largest European presence in its international portfolio. Other leading accelerators investing in UK companies include **500** and **Berkeley SkyDeck**.

Leading Bay Area venture firms that, like Y Combinator, don't have offices in the UK but actively invest in UK companies include Kleiner Perkins, Greylock Partners, and Andreessen Horowitz.

Innovation banking—banking services specifically tailored for the startup community—is another area where Bay Area companies play a role. **Silicon Valley Bank**, which had offices in the UK for twenty years before its UK entity was sold to HSBC in 2023, considers the UK a “highly strategic market” and continues to support many UK clients, including founders looking to expand in the US and founders who don't plan to come to the US but are seeking US investment.

UK Tech in the Bay Area

The United Kingdom is the top foreign investor in California, with more than 1,900 businesses supporting 113,292 jobs. The leading concentrations of investment are in professional and business services, hospitality, and technology. The UK is also the top foreign investor in the Bay Area, with 665 establishments supporting more than 37,000 jobs.

Leading UK technology companies with a presence in the region include

- Arm (semiconductors)
- Improbable (virtual worlds and simulations)
- TransferWise (fintech)
- Revolut (fintech)
- Babylon Health (digital health)
- Deep Mind (AI)
- Benevolent AI (drug discovery and applications)
- Graphcore (AI for semiconductors)
- Monzo (fintech)
- Immersive Labs (cybersecurity)
- Cazoo (online car retail)

Arm, which is headquartered in Cambridge, illustrates the connection. Its computing architecture is ubiquitous, designed into more than 265 billion silicon chips that run in everything from mobile devices to cars and data servers. In 1994, Arm established a base in Silicon Valley that today serves as the company's US headquarters.

Supportive Connectors and Infrastructure

British bank **HSBC** established an innovation banking unit in the Bay Area following its acquisition of Silicon Valley Bank's assets in the UK in 2023. British entrepreneurs in the Bay Area are supported by **GBx**, a professional network created in 2017 that brings together British tech executives, investors, and entrepreneurs in the region. In November 2024, Imperial College London launched **Imperial Global USA**—its first physical presence in the United States—in San Francisco. The hub's creation also makes Imperial the first UK university to have a permanent science and technology base on US soil. Founded in the UK in 2011, accelerator and venture capital firm **Entrepreneurs First (EF)** launched a hub in San Francisco in early 2024. Representing London in the Bay Area in its investment promotion role, **London & Partners** facilitates startup connections through its Grow London global program. The **British-American Business Council** also facilitates tech and startup connections.

The Startup Bridge: Early-Stage Companies in the UK and Silicon Valley

Many early-stage UK companies are deeply connected to the Bay Area, often with a full-time presence. Noteworthy examples include Modern Synthesis, Pathfinder, Pangaea Data, Solaris Suborbital, Vaire Computing, Harmonic Security, and Impossible Metals. Often, the executives of these companies are members of GBx.

Where Next?

The UK-United States technology and investment relationship offers a distinct foundation for future growth.

Atlantic Declaration

At the national level, the Atlantic Declaration, signed by the United States and UK governments in June 2023, foresees a twenty-first century US-UK Economic Partnership that will build on the US-UK alliance relationship in the economic sphere.

Challenges and Change in the UK

Notwithstanding its competitive strength in Europe and its comparative global standing, the UK's innovation ecosystem faces challenges.

Talent

One UK challenge has to do with talent. While not facing a major talent shortage, the pipeline of talent from Europe is more restricted due to Brexit. A focus on talent mobility and an improved process to make high-skilled visas easier to obtain could address this issue.

Late-Stage Funding and Capital Markets

As in other countries, ample seed and early-stage funding capital is available in the UK, but access to later-stage funding is constrained, making it difficult for emerging companies to scale. Because government funding can't fill this gap, a deeper mobilization of private capital—including institutional investors such as pension funds—is needed.

Scientific Research

It is estimated that 2021 R&D spending in the UK as a percentage of GDP was 2.9%, which was above the OECD and EU averages but lower than other leading economies. Increased national investment in scientific research is needed to strengthen the UK's technology innovation base across key industries. The UK's launch in 2023 of the Advanced Research and Innovation Agency (ARIA), an independent government-funded research organization, is a significant new commitment.

Health Care

The UK's National Health Service (NHS) has one of the largest health care databases in the world, which can provide a valuable platform for innovation and technology deployment. The system, however, is fragmented in how it is organized, used, and focused, with a central focus on cost but little on innovation. More could be done to develop its potential as a medium for commercial technology deployment.

Tax, Fiscal, and Regulatory Policy

With the UK's change of government in 2024, UK startups and their investors face greater policy uncertainty. As the new government addresses budgetary challenges, funding for technology initiatives appears less certain. Revisions to tax policy are also raising concerns. Founders and tech investors will also follow how the government steers the UK's Competition and Markets Authority (CMA), which some in Silicon Valley see as too restrictively regulating M&A. The government has signaled its intention to invest in the UK's startup ecosystem, building on a strategy laid out in a 2022 report, *Start-Up, Scale-Up*, that was produced by the Labour Party while in opposition.

AI

In August 2024, the new Labour government announced its intention to develop an AI Opportunities Action Plan, a roadmap to leverage AI to enhance economic growth. The process aims to support an artificial intelligence sector that can be competitive and scale, can enhance productivity and support the delivery of government services, and can strengthen AI adoption through data, infrastructure, and policy and regulatory reform. Development of the Plan offers the UK an opportunity to leverage its strength in research to support accelerated AI adoption and innovation across a range of industries.

From a regulatory standpoint, the UK also has an opportunity to differentiate itself from the regulation-forward approach embodied in the EU's AI Act, through a strategy that minimizes compliance burdens and incentivizes business investment, growth, and scaling.

Prime Minister Keir Starmer added further detail to the government's direction in January 2025 with a comprehensive blueprint to implement the AI Opportunities Action Plan. Initiatives include dedicated "AI Growth Zones" across the country, designed to streamline planning processes and enhance data center access to power grids. The Prime Minister also indicated that "the UK will go its own way on AI regulation."

The UK-Silicon Valley Opportunity

The UK's startup and innovation system benefits from extraordinarily close ties with US markets and investors. History and business culture connect them. The exceptional depth of talent in the UK and strengths in an array of fields from life sciences to hard tech, AI, and quantum computing offer a rich environment for research and investment, while the US offers growth capital and a market in which to expand.

Many investors and growth companies have crossed that bridge in both directions, but there is room for further growth. Silicon Valley plays a major role in the relationship, with Bay Area VCs serving as large investors or co-investors in emerging UK companies. For many of those companies, the Bay Area is their destination when coming to the US.

As they scale globally, startup and scaleup companies can benefit from coming to the US early, building on the size of the US market and its competitive best-in-class environment. Similarly, many US startups expanding globally first turn to Europe, where the UK is a major market and, with affinity in language and culture, offers an environment with comparatively low business friction.



The UK today stands as Europe's premier center for technology innovation, venture investment, and startup activity; and while other European centers are growing, the UK retains the prime position. This report examines the institutional and scientific roots of its competitiveness, its vibrant startup economy, and the opportunities they present for Bay Area and other US investors and economic partners.

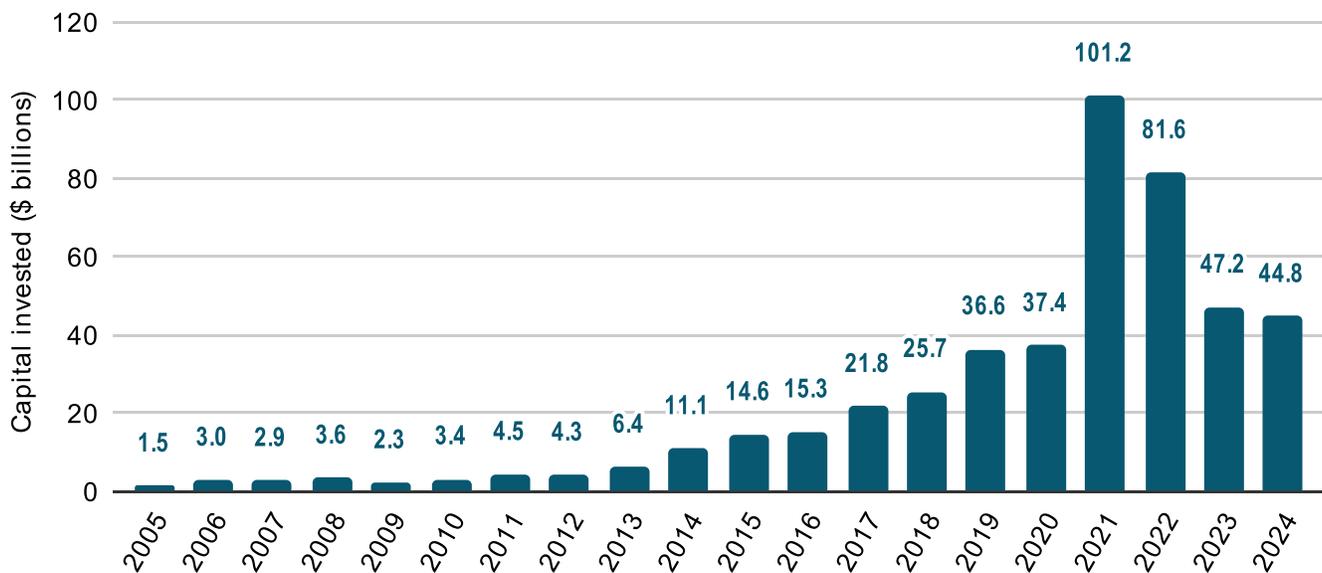
An Evolving European Technology Landscape

Recent years have seen a rise in entrepreneurship across Europe, with the number of new tech startups exceeding the number in the US each year between 2018 and 2023. The top ten countries—the UK, France, Germany, the Netherlands, Italy, Spain, Switzerland, Belgium, Sweden, and Finland—accounted for 83% of Europe’s new tech startups in 2023. By September 2023, billion-dollar exits could be found by companies that started and scaled from 29 European countries.

The leading industries and sectors were climate and energy, fintech, enterprise software, AI, and health, with deeptech (applications of science and engineering to new products and services) accounting to 44% of all tech investments.¹ With AI a growing focus, June 2024 data shows AI accounting for 18% of European venture funding and generative AI accounting for 10%.² Overall, Europe’s share of global venture investment is approximately 20%, up from 5% 20 years ago.³

EXHIBIT 1

Total capital invested (\$ billions) in Europe per year, 2005–2024

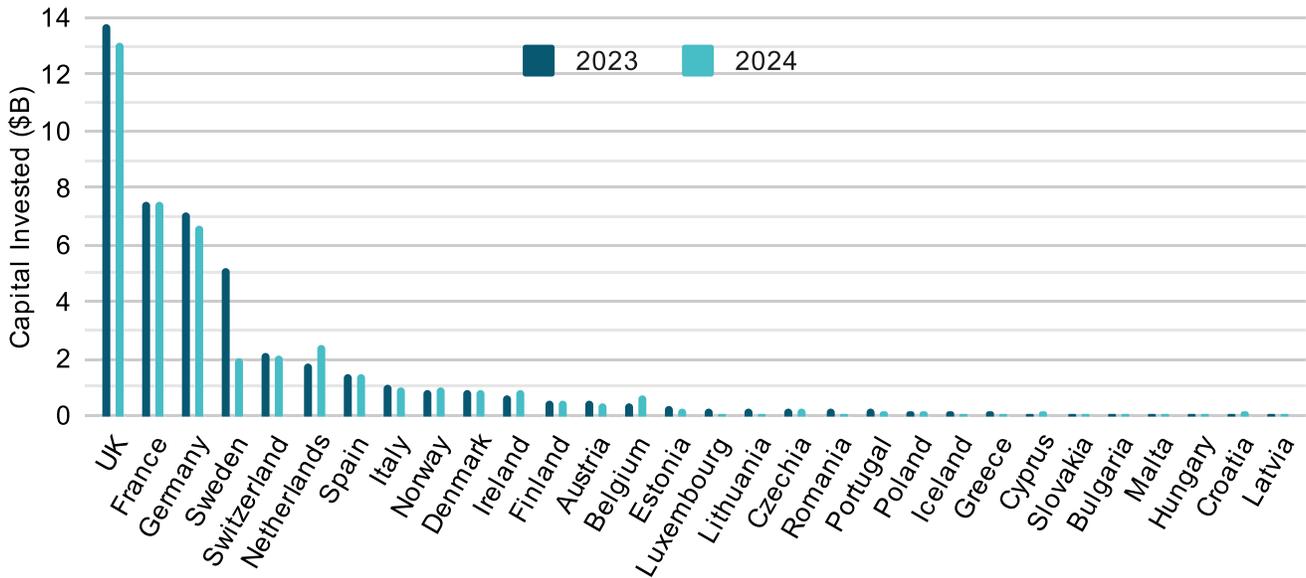


Data Source: Atomico State of European Tech 24 report powered by Dealroom.co and Crunchbase

Notes: Data is as of September 30, 2024. Full Year 2024 extrapolated based on year-to-date data. Excludes biotech, debt, lending capital, and grants.

EXHIBIT 2

Capital invested (\$ billions) by top 30 countries, 2023 and 2024



Data Source: Atomico State of European Tech 24 report powered by Dealroom.co and Crunchbase
 Notes: Data is as of September 30, 2024. Full Year 2024 extrapolated based on year-to-date data. Excludes biotech, debt, lending capital, and grants.

Like other parts of the world, both funding and exits in Europe are down from their peak (\$101 billion) in 2021. VC investment in Europe was close to \$45 billion in 2024, a level slightly above pre-pandemic 2019 and 2020 levels.⁴

AI is a leading sector, with AI companies receiving more than €13 billion in funding between Q1 2022 and Q1 2023 and €11 billion between Q1 2023 and Q1 2024. AI companies accounted for 36% of new unicorns created in the 12 months preceding March 2024.⁵

Situating the UK in Europe

Within Europe, the UK leads in venture and startup activity across multiple measures. Several factors explain the durability of the UK’s position:

- The UK started earlier than other tech clusters in Europe, with substantial activity in places like Cambridge and Oxford and significant tech companies such as Arm.
- London’s position as a major financial center meant that investment capital was readily available as the technology economy took off.
- The UK has historically been a bridge to Europe for US companies and, before Brexit, was the

natural choice for companies seeking to develop a European presence.

- Britain’s English-speaking business culture and appetite for risk (lower than the US but higher than in most of Europe) created an environment that was attractive for startups and conducive to investment.

Brexit negatively affected the UK’s economy in some respects. Many financial services companies moved staff or assets from the UK to alternative sites in Europe, as the UK’s withdrawal from the European Economic Area (EEA) meant that UK-based entities were no longer able to “passport” their services to markets on the continent. The principal beneficiaries were Dublin (25% of moves), Paris (19% of moves), Luxembourg (17% of moves), and Frankfurt (12% of moves). By mid-2021, more than 440 firms had responded to Brexit by moving some part of their business, staff, or legal entities to the EU. Approximately 10% of the UK’s banking assets moved with them.⁶ But Brexit did not significantly impact the UK’s position in venture and innovation finance, which was less tied to European markets and more deeply based in ecosystem assets inherent in the UK.

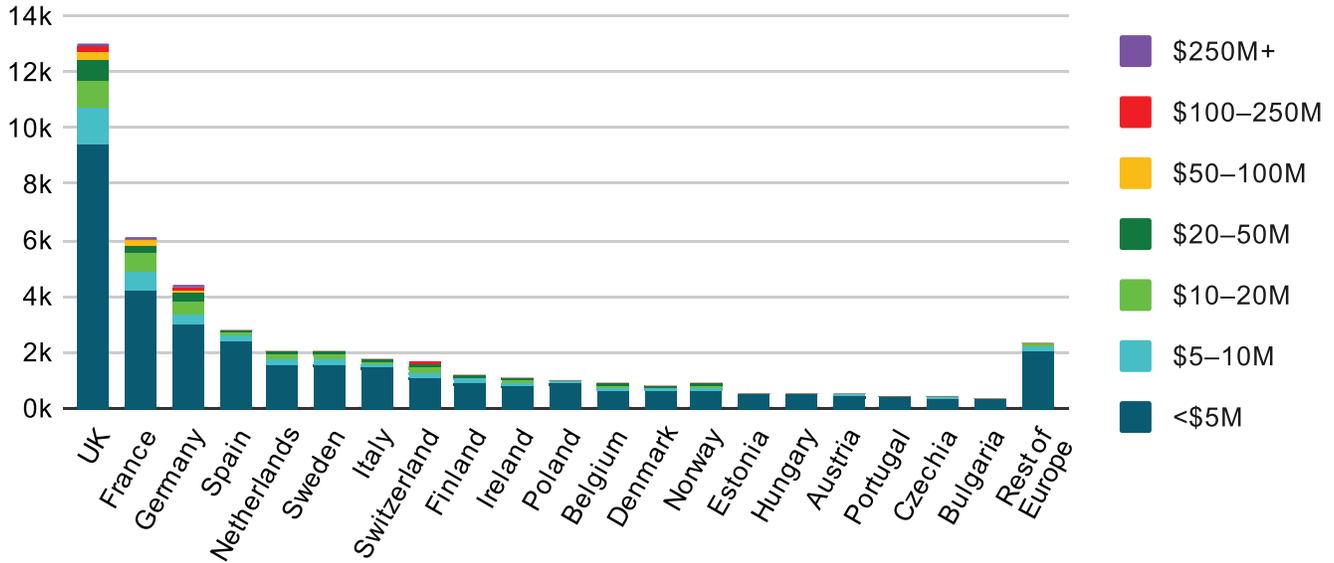
The UK has maintained a strong lead in the amount of capital invested in tech companies and is home to the

largest number of tech startups founded in Europe each year, accounting for one quarter of all new companies. With that, it is also home to the largest number of funded technology companies in Europe, with close to 13,000. The UK leads Europe in the number of unicorns

(\$1B+ private companies). Of the eight European countries with more than ten current unicorns in 2023, the UK led with 104, followed by Germany (54) and France (38). It also led in the combined number of funded and unfunded tech companies.⁷

EXHIBIT 3

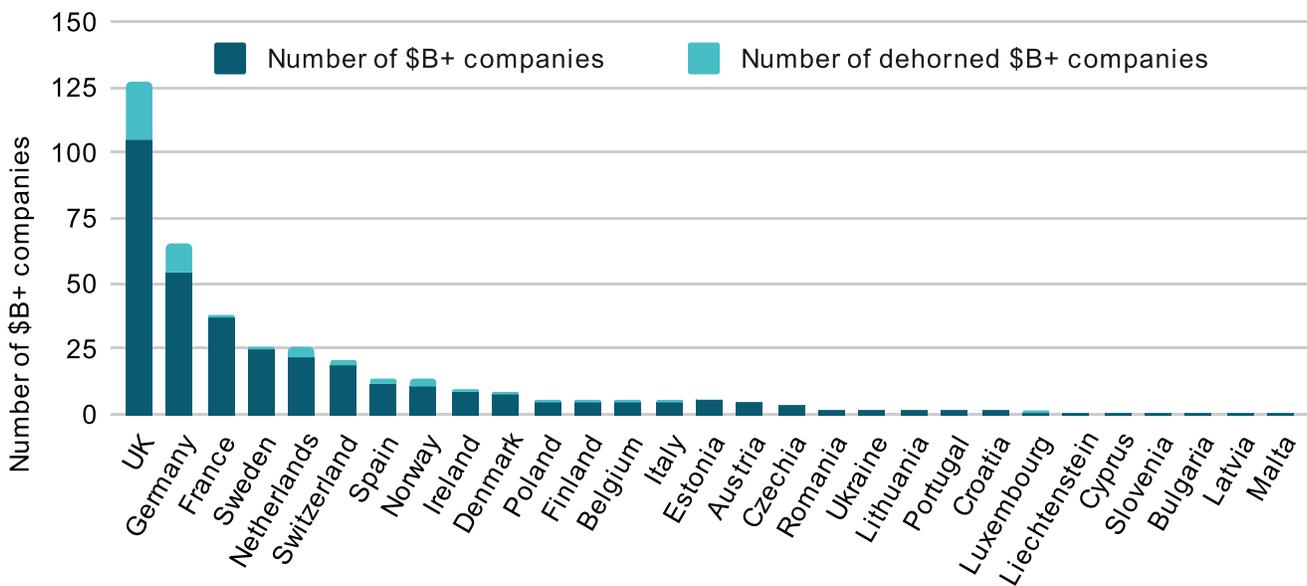
Count of funded companies and their total capital raised 2023



Data Source: Atomico State of European Tech 23 report powered by Dealroom.co and Crunchbase
 Notes: Data is as of September 30, 2023. Excludes biotech, secondary transactions, debt, lending capital, and grants.

EXHIBIT 4

Number of \$B+ companies per country, 2023

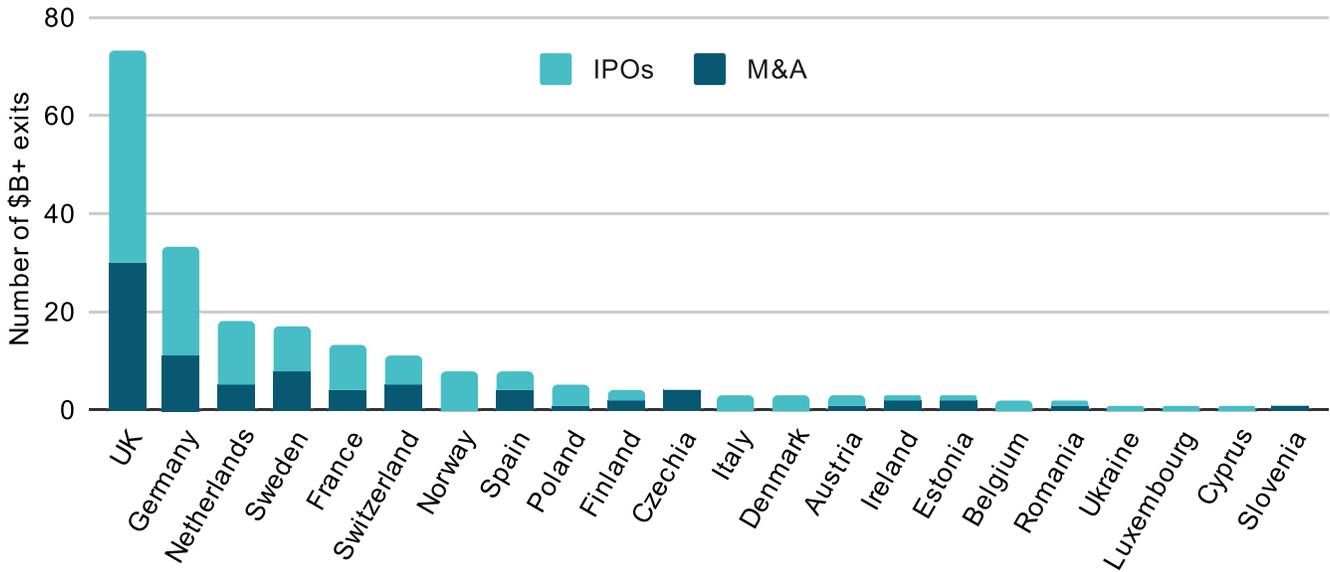


Data Source: Atomico State of European Tech 23 report
 Notes: Data is as of September 30, 2023. A dehorned company reached \$1B+ valuation in its lifetime but has seen its valuation fall to under a billion dollars.

The UK's lead in cumulative capital invested and in billion-dollar exits has been sustained for more than a decade. Almost half of all \$B+ exits in Europe in the past ten years have taken place in the UK, including the two largest—IHS Markit and Arm.⁸

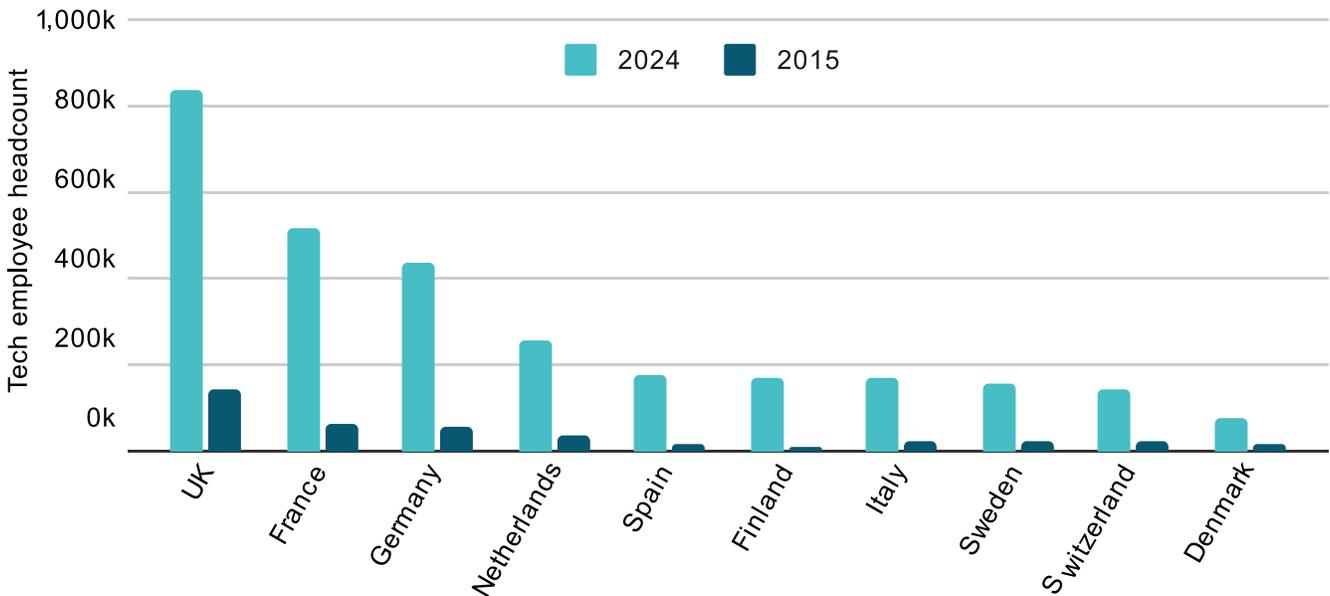
Those investment flows are mirrored by the concentration of tech employees, where the UK leads other European countries by a large margin.⁹

EXHIBIT 5
Number of \$B+ exits per country, 2023



Data Source: Atomico State of European Tech 23 report

EXHIBIT 6
Top countries by tech employee headcount, 2015 and 2024



Data Source: Atomico State of European Tech 24 report powered by Dealroom.co and Crunchbase

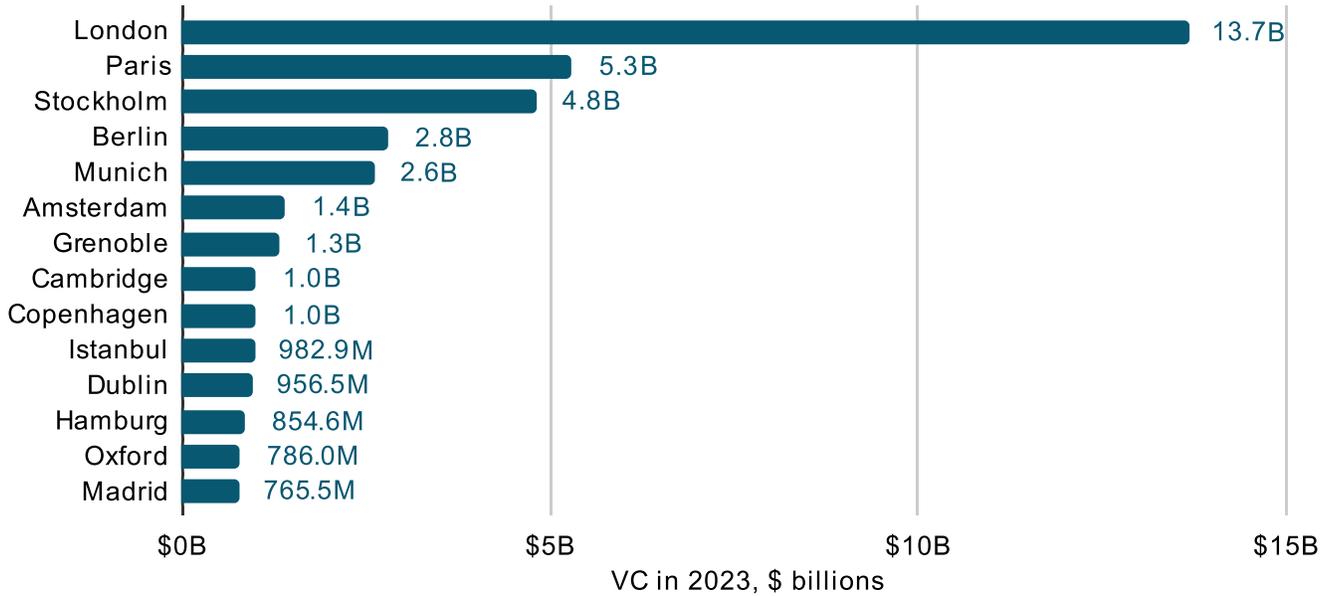
Notes: Data is as of September 30, 2024. Tech headcount is based on employees by company headquarters. Full-year 2024 extrapolated based on year-to-date data. Excludes biotech, debt, lending capital, and grants.

At the city level, London leads European venture investment by a large margin, with \$13.7 billion invested in 2023, compared to Paris (\$5.3B), Stockholm (\$4.8B), and Berlin (\$2.8B). It accounted for 65% of

total venture investment across the UK.¹⁰ Over the ten-year period 2015–2024, London has consistently attracted the highest volumes of capital investment of any European City.¹¹

EXHIBIT 7

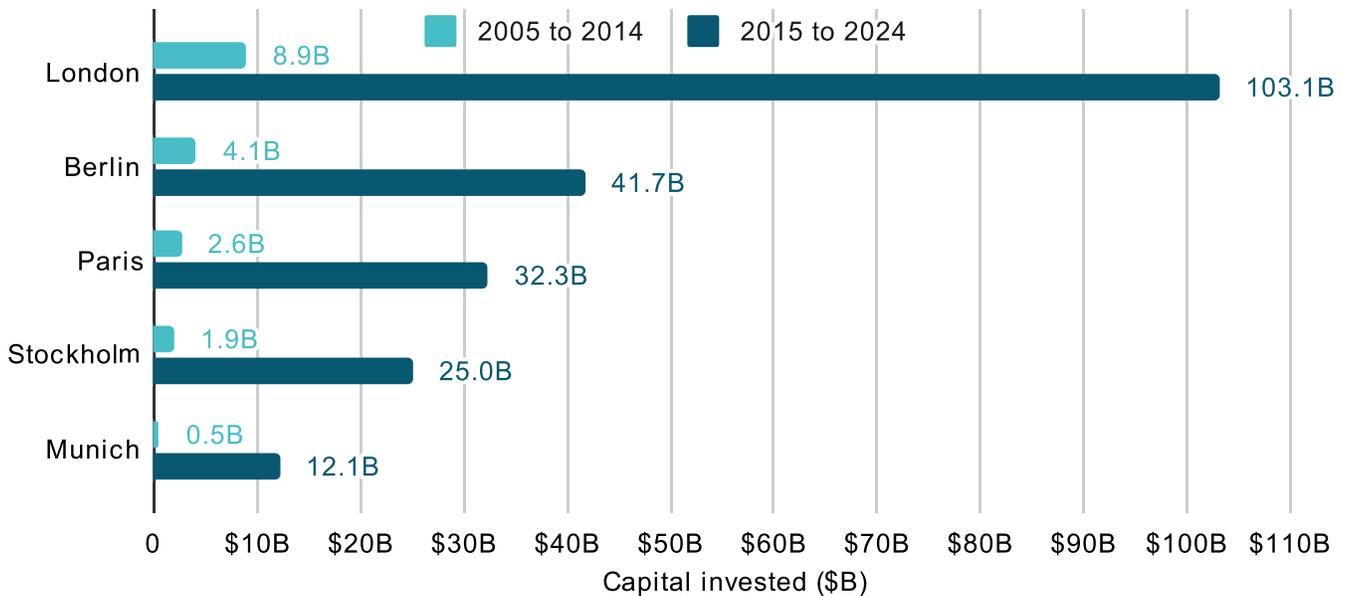
Top 15 European hubs by VC investment in 2023



Data Source: Dealroom.co

EXHIBIT 8

Top 5 cities by capital invested (\$B), 2005 to 2014 and 2015 to 2024

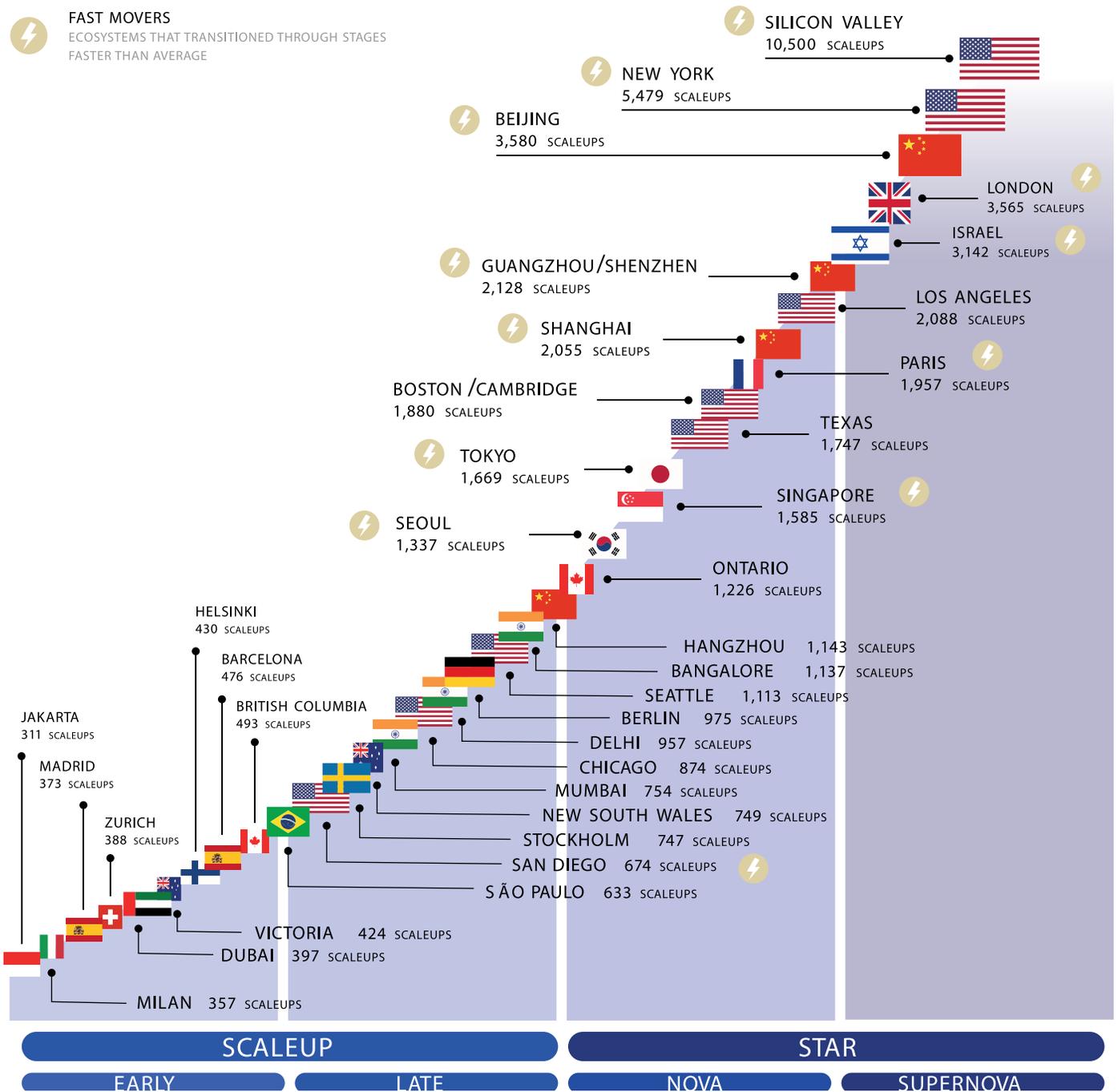


Data Source: Atomico State of European Tech 24 report powered by Dealroom.co and Crunchbase

Notes: Data is as of September 2024. Full-year 2024 extrapolated linearly based on year-to-date data. Excludes biotech, debt, lending capital, and grants.

EXHIBIT 9

Innovation regions on the innovation ecosystems life cycle curve

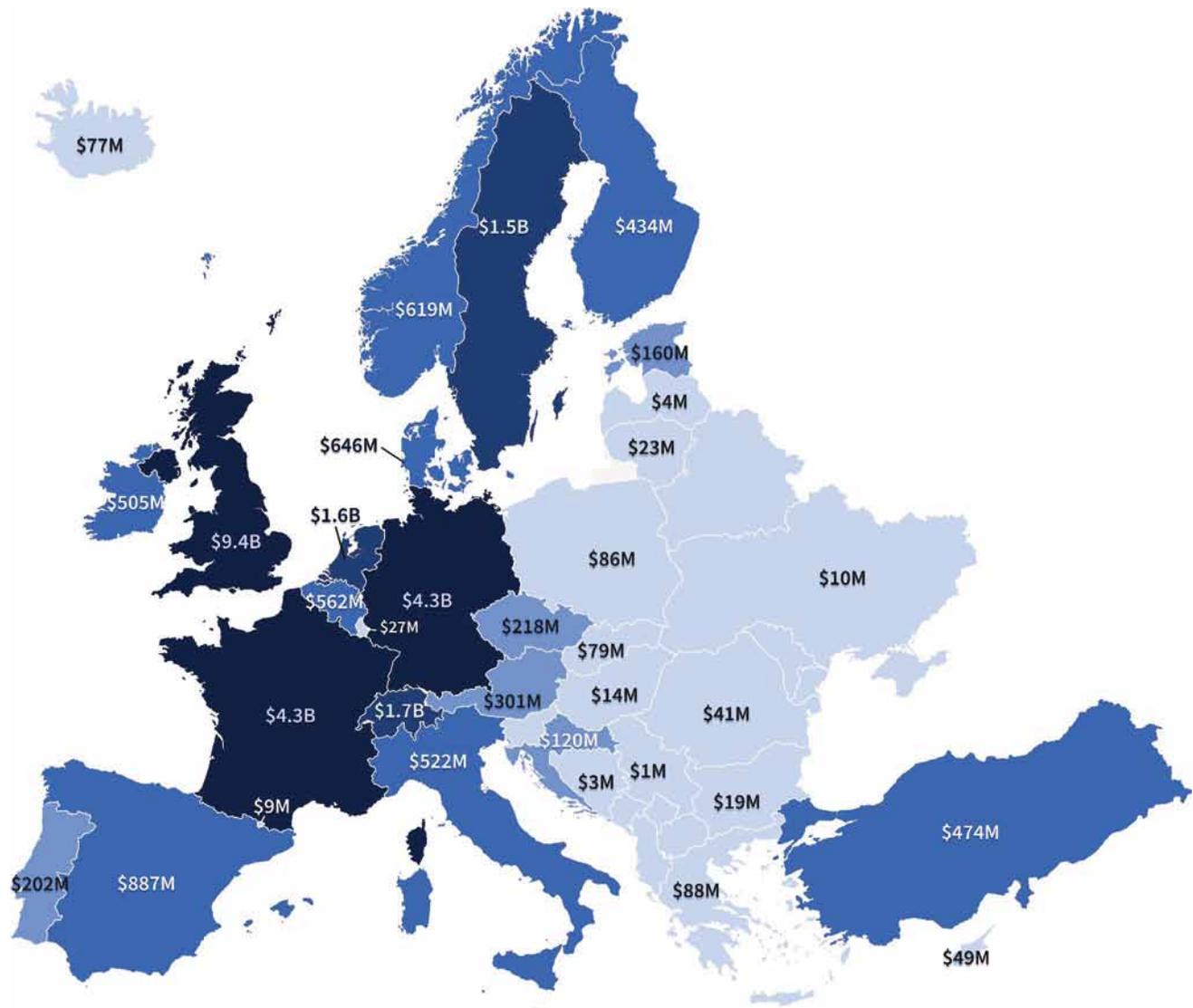


Infographic Source: Mind the Bridge, Innovation or Isolation: The Future of Regional Ecosystems; Startup Ecosystem Stars Report 2024
 Note: For the scaleup stage, exemplary ecosystems are plotted on the curve.

Another way to measure technology innovation is through “scaleups”: startups that have raised \$1 million or more. A 2024 report from Mind the Bridge places the UK #3 in the world in its number of scaleups (5,240), behind only the United States (37,305) and China (11,747), with France in sixth place (3,019) and Germany in seventh (2,184). Measured by “scalers” (scaleups that have raised \$100 million or more), the

UK holds the #5 spot with 267, behind the United States (3,223), China (949), India (284), and Israel (280), with Germany (142) ranked sixth and France (131) seventh. By both measures—scaleups and scalars—the UK’s ecosystem ranks #1 in Europe. At the city level, London ranks fourth in the world for scaleups after Silicon Valley, New York, and Beijing, with Paris ranking ninth and Berlin nineteenth.¹²

EXHIBIT 10
European countries by VC investment H1 2024



Infographic Source: Dealroom.co, “Europe Tech Update: Q2 2024,” July 2024

Trend

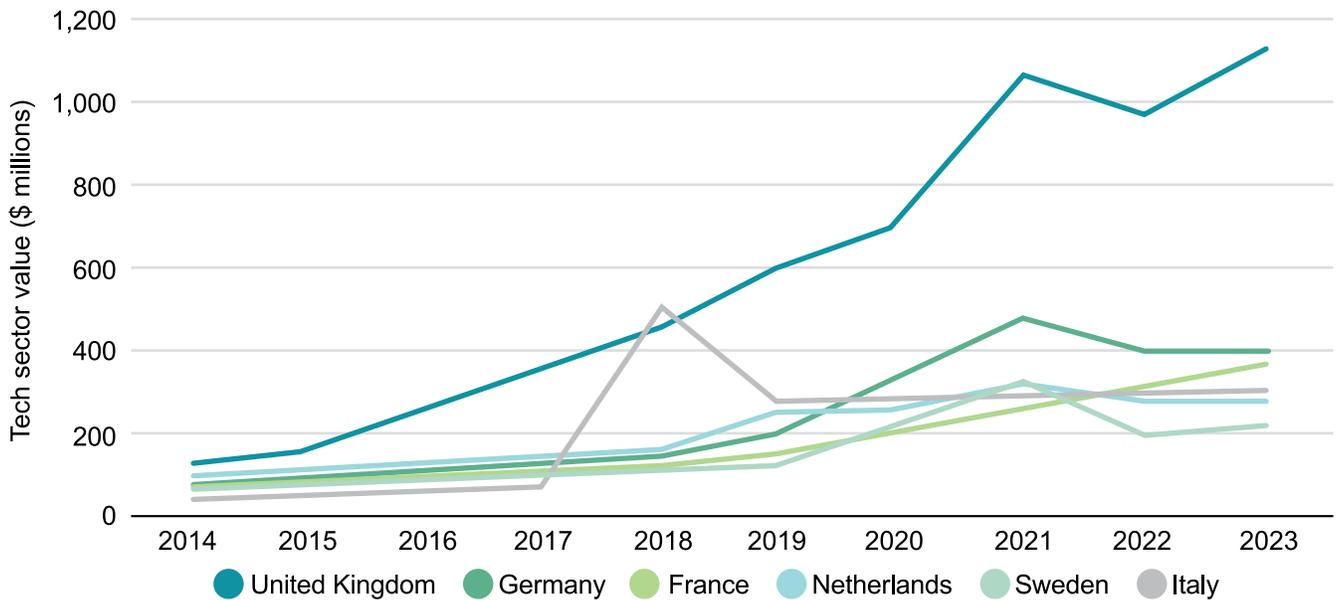
Recent years have seen some—but not dramatic—erosion in the UK’s position within Europe. In 2021–2023, compared to 2018–2020, the UK’s share of European capital invested dropped by 2.6%.¹³ This could be due to several factors, including growing investment activity in other economies.

Data for the first half of 2024 shows that companies in the UK attracted \$9.4 billion in venture investment

compared to \$8 billion in the first half of 2023, more than France and Germany combined. At the city level, London again led, attracting more than twice the amount of new investment as the next leading city, Paris. The top sectors for investment continued to be energy, fintech, health, enterprise software, and transportation, while the leading segment was generative AI (by a significant margin).¹⁴

EXHIBIT 11

UK tech value in a European context



Graph Source: Tech Nation, UK Tech in the Age of AI: The Tech Nation Report 2024, July 2024

The UK's innovation ecosystem has an H1 2024 estimated value of \$1.1 trillion, representing 30% of all European value created.¹⁵ This makes the UK the world's third most valuable tech geography in the world, after the United States and China.¹⁶ At the city level, London is the world's sixth-largest city when measured by tech value. When considering these measurements, however, context is important. While London as a city leads within Europe, the tech systems of San Francisco, Beijing, New York, Shanghai, and Austin are significantly larger.¹⁷

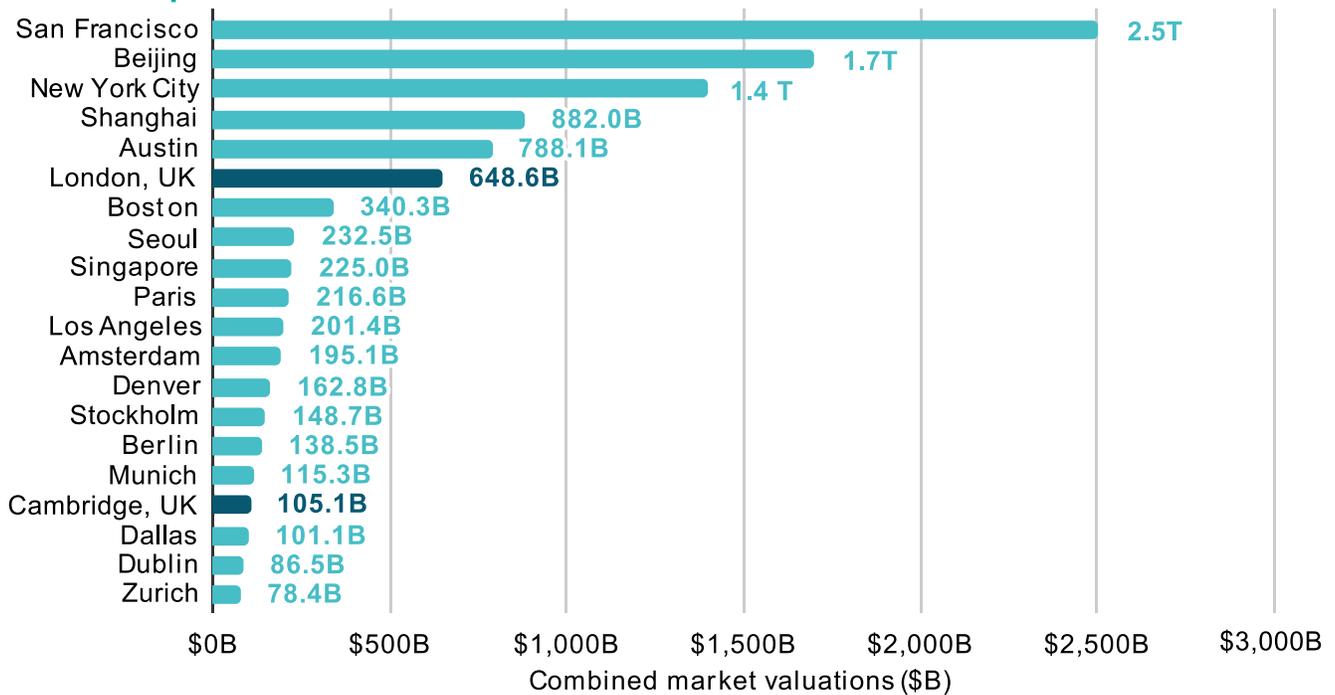
With its concentration of investment and other innovation assets, London has been identified in every

annual Startup Heatmap Europe poll since the survey began in 2016 as the number one place in Europe where entrepreneurs would choose to found a company, followed closely by Berlin.¹⁸

Analysis by Tech.eu shows that €74.4 billion was invested in European tech companies in 2024, a 10% increase over 2023. Of the 24 companies receiving the largest funding, 7 were in the UK: SumUp (financial technology), Wayve (autonomous vehicle technology), About (AI-based credit analysis), Zenobe Energy (batteries), Monzo (digital banking), Bicycle Therapeutics (biopharma), and Wildstone (outdoor media infrastructure).¹⁹

EXHIBIT 12

Combined market value (\$B) of tech companies headquartered in the world's top 20 tech cities



Data Source: Tech Nation, UK Tech in the Age of AI: The Tech Nation Report 2024, July 2024

AI

The value of AI startups in the UK has passed \$250 billion, accounting for 22% of tech ecosystem value.²⁰

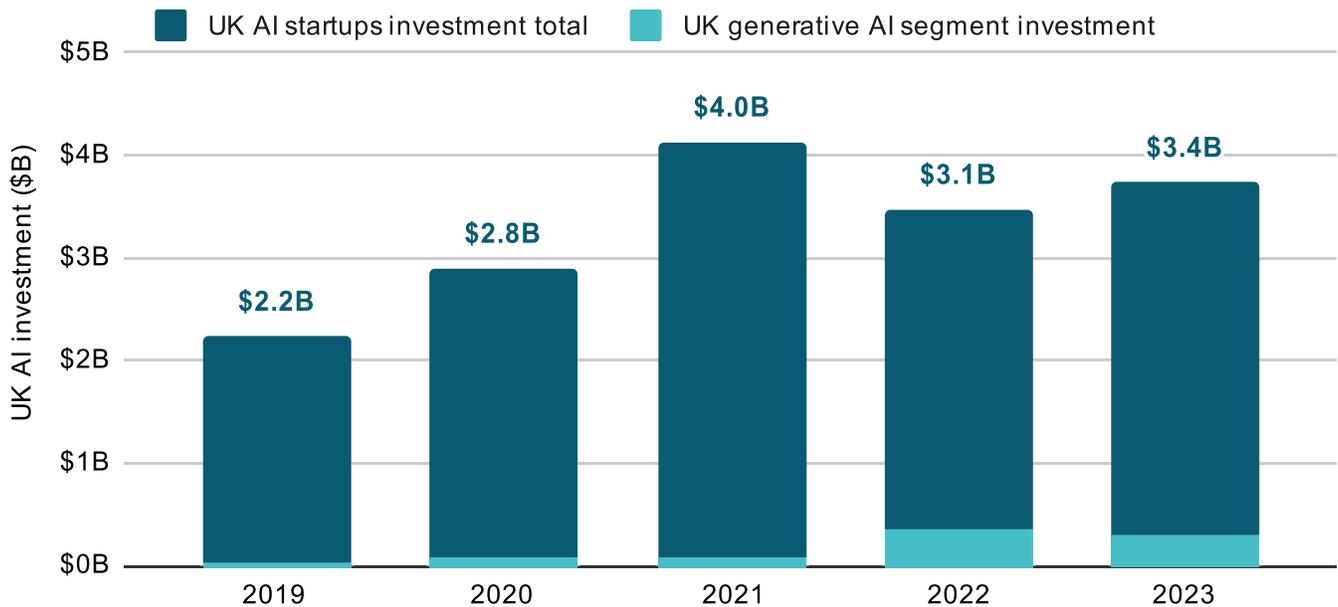
In a global context, 2023 saw UK AI companies raise double the amount of capital raised by AI startups and scaleups in France and Germany. The total capital raised for AI (including machine learning, large language models, and generative AI) by UK companies in 2023 was \$3.4 billion, the second-highest one-year total on record.

A relatively small part of that was invested in generative AI (\$321 million), with most going to companies in the enterprise software, transport and fintech sectors. The \$1.95 billion raised by autonomous mobility startup Wayve was the largest single European AI investment to date.²¹

On the 2024 list of the top 10 countries by AI funding total, the UK ranks third, behind the US and China.²² In the generative AI segment, UK investment ranks fourth in the world, behind the United States, China, and Israel. The United States, however, dominates the field.²³

EXHIBIT 13

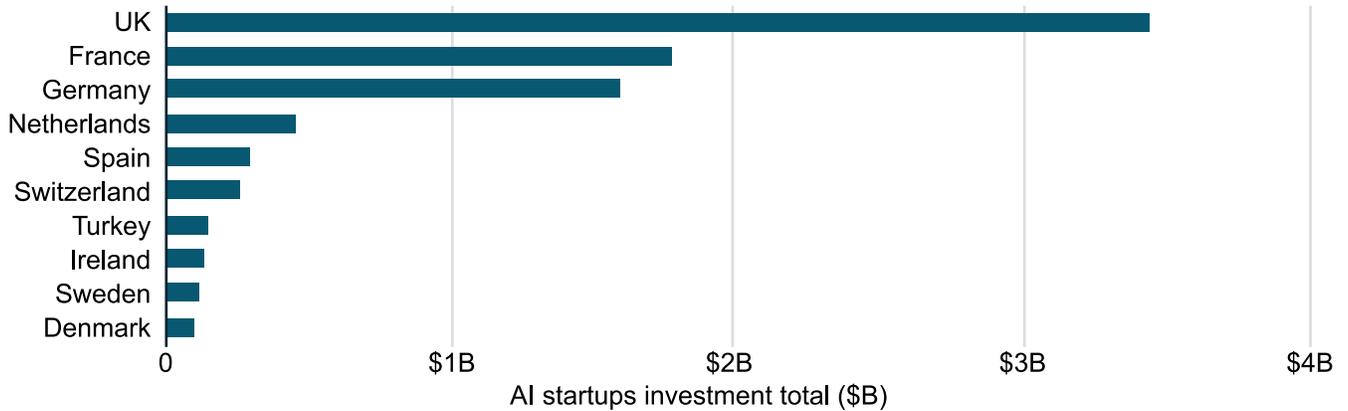
UK AI startups raised \$3.4 billion in 2023, with \$321 million of that investment directed to generative AI



Data Source: Tech Nation, UK Tech in the Age of AI: The Tech Nation Report 2024, July 2024

EXHIBIT 14

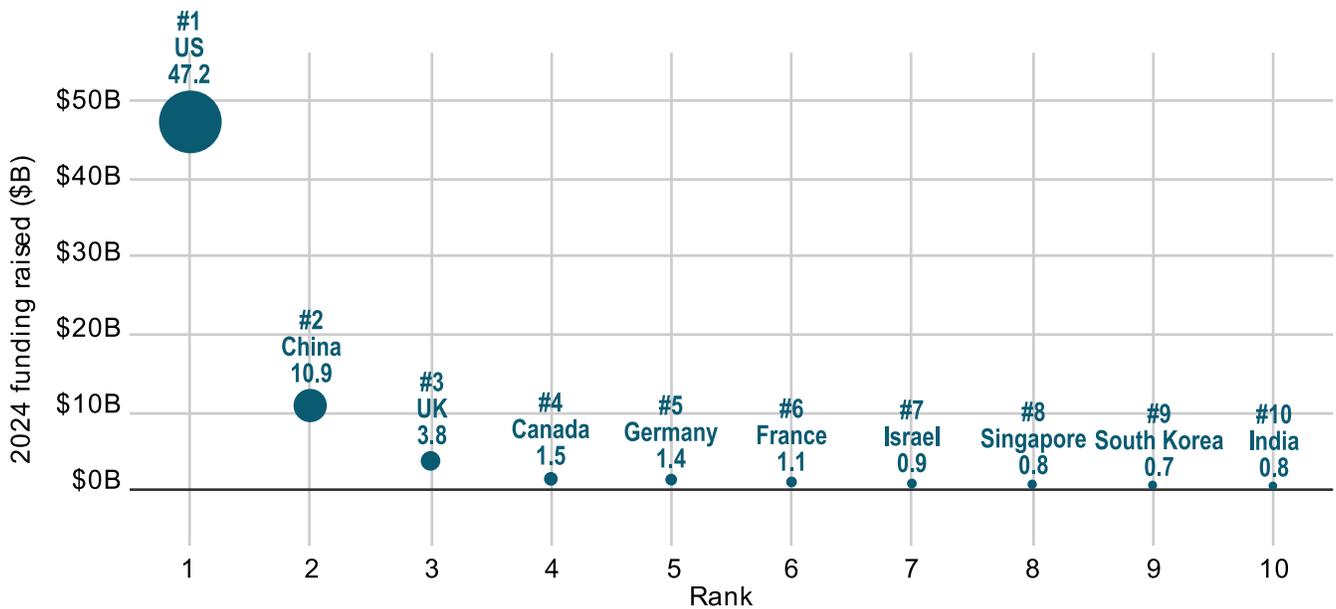
UK AI investment in a European context, 2023



Graph Source: Tech Nation, UK Tech in the Age of AI: The Tech Nation Report 2024, July 2024

EXHIBIT 15

Top countries by AI funding total, 2024



Data Source: Atomico State of European Tech 24 report powered by Dealroom.co

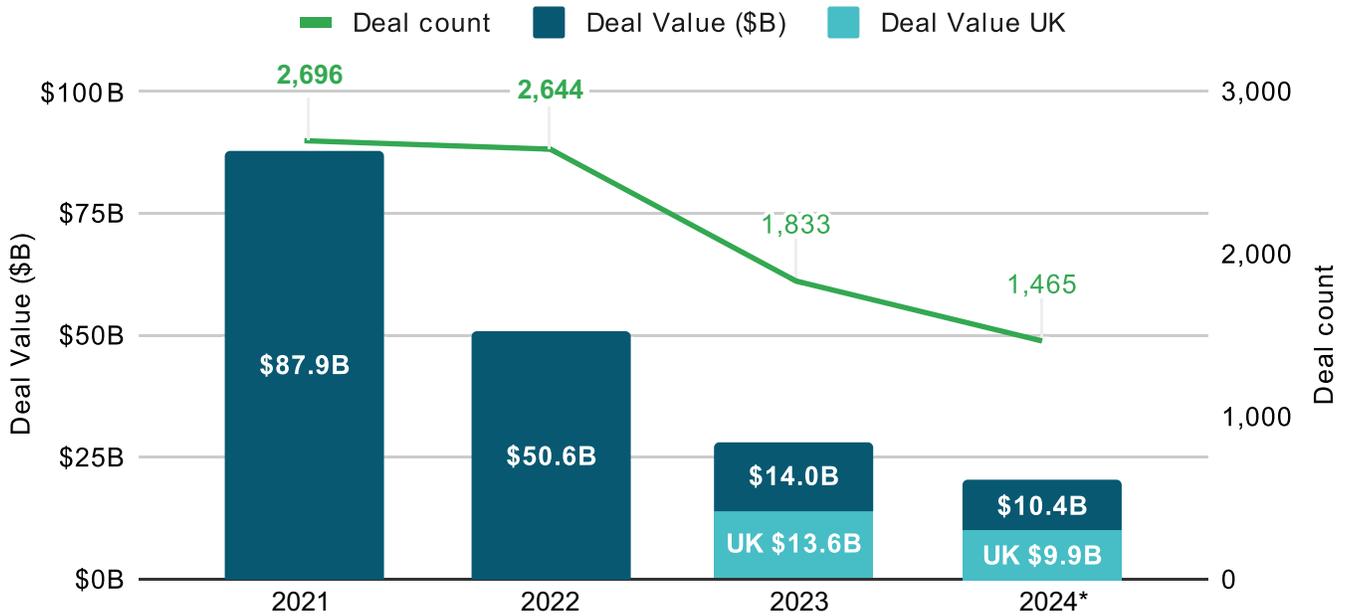
Notes: Data is as of September 30, 2024. Full Year funding extrapolated linearly from year to date. Excludes biotech, debt, lending capital, and grants

Fintech

Mirroring a global dip in funding, in 2024 investment in fintech hit a four-year low (\$9.9 billion compared to \$13.6 billion in 2023), but the UK still attracted close to half the total funding in the EMEA (Europe, Middle East, Africa) region, and the UK remains the capital of European fintech.²⁴

EXHIBIT 16

The UK attracted almost half of the total fintech funding activity (VC, PE, and M&A) in the EMEA in 2024.



Data Source: KPMG Pulse of Fintech H2'24 report analysis of PitchBook data, February 2025 *as of December 31, 2024

Measuring Tech and Startup Competitiveness

Global and European Indexes

Global indexes of startup ecosystems place the UK's startup environment in the top ranks.

The **StartupBlink Global Startup Ecosystem Index 2024 (GSEI)**, measures startup environments in 1,000 cities in 100 countries. In its top countries ecosystem rankings, the United States holds the number 1 place, followed by the UK at number 2. In continental Europe, Sweden ranks number 6, Germany 7, France 8, the Netherlands 9, and Switzerland 10. Looked at through the lens of cities, the UK has four cities in the GSEI global top 100 cities list. San Francisco leads that list by a large margin, followed by New York at number 2. London ranks number 3, and number one in Europe, ahead of Paris (10), Berlin (13), and Stockholm (26). The other UK cities in the global top 100 are Cambridge (72), Manchester (85), and Oxford (99).¹

The **fDi European Cities and Regions of the Future 2025** ranking places London at number 1 in the *major European cities overall* category in terms of its attraction of foreign direct investment (FDI). Up to November 2024, Central London brought in almost three times as many FDI projects as any other city in Europe. In the study's sub-categories, London is also ranked number 1 for human capital and lifestyle, number 1 for business friendliness, number 1 for FDI strategy, number 2 for economic potential (after Dublin), and number 2 for connectivity (after Brussels). In the nine years since the UK voted to leave the EU, the effects of Brexit have only marginally impacted the city's dominant status.²

UK cities ranking well in other European Cities of the Future categories include Manchester placing tenth among *large European cities overall*, number 5 for business friendliness, number 8 for economic potential, and number 10 for connectivity. Three other UK cities also placed on the large European cities connectivity list, with Liverpool at number 2, Sheffield at number 6, and Glasgow at number 8. Birmingham placed number 10 on the large European cities business friendliness list.

Three UK cities placed among the *mid-sized European cities overall*, with Edinburgh at number 4, followed by Belfast at number 5, and Bristol at number 8. On the mid-sized cities economic potential list, Edinburgh was number 3, Belfast number 5, Bristol number 6, and Coventry number 9. Edinburgh ranked number 6 on the mid-sized cities human capital and lifestyle list and Bristol number 9. Edinburgh and Belfast also placed on the mid-sized cities business friendliness list at number 9 and 10 respectively, and Edinburgh took the number 10 spot on the mid-sized cities connectivity list.

Three UK cities also placed in the *small European cities overall* category, with Cambridge at number 4, Oxford at number 8, and Reading at number 9. In the small European cities sub-categories, Cambridge ranked number 7 on the economic potential list, followed by Oxford at number 8 and Reading at number 10. On the small cities human capital and lifestyle list, Oxford placed at number 1 and Cambridge at number 10. Cambridge, Reading, Oxford, and Milton Keynes ranked 4, 5, 8, and 10 on the small cities business friendliness list.³

EXHIBIT 17

fDI European Cities and Regions of the Future 2025: Cities Winners

TOP 10 MAJOR EUROPEAN CITIES OF THE FUTURE 2025 — OVERALL

RANK	CITY	COUNTRY
1	London	UK
2	Dublin	Ireland
3	Warsaw	Poland
4	Paris	France
5	Amsterdam	Netherlands
6	Munich	Germany
7	Berlin	Germany
8	Madrid	Spain
9	Bucharest	Romania
10	Stockholm	Sweden

TOP 10 LARGE EUROPEAN CITIES OF THE FUTURE 2025 — OVERALL

RANK	CITY	COUNTRY
1	Frankfurt am Main	Germany
2	Hamburg	Germany
3	Kraków	Poland
4	Düsseldorf	Germany
5	Poznań	Poland
6	Cologne	Germany
7	Gothenburg	Sweden
8	Antwerp	Belgium
9	Stuttgart	Germany
10	Manchester	UK

TOP 10 MID-SIZED EUROPEAN CITIES OF THE FUTURE 2025 — OVERALL

RANK	CITY	COUNTRY
1	Wrocław	Poland
2	Zürich	Switzerland
3	Vilnius	Lithuania
4	Edinburgh	UK
5	Belfast	UK
6	Gdańsk	Poland
7	Bratislava	Slovakia
8	Bristol	UK
9	Tallinn	Estonia
10	Eindhoven	Netherlands

TOP 10 SMALL EUROPEAN CITIES OF THE FUTURE 2025 — OVERALL

RANK	CITY	COUNTRY
1	Luxembourg	Luxembourg
2	Cork	Ireland
3	Geneva	Switzerland
4	Cambridge	UK
5	Ghent	Belgium
6	Espoo	Finland
7	Basel	Switzerland
8	Oxford	UK
9	Reading	UK
10	Leuven	Belgium

Source: fDI Intelligence European Cities and Regions of the Future 2025 report

The **WIPO Global Innovation Index 2024 (GII)** measures ecosystem performance in 133 countries across a range of measures in four key stages of the innovation cycle: Science and Innovation Investment (scientific publications), R&D investment, venture capital, international patent filings); Technological Progress (computing power, cost of renewable energy, electric battery price, cost of genome sequencing, drug approvals); Technology Adoption (safe sanitation, broadband connectivity, robots, electric vehicles, cancer radiotherapy); and Socioeconomic Impact (labor

productivity, life expectancy, CO2 emissions). Overall, the 2024 index puts the UK at number 3 in Europe after Switzerland and Sweden, and number 5 in the world after Switzerland, Sweden, the United States, and Singapore.

In the GII's listing of the top 100 global science and technology (S&T) clusters, Cambridge and the San Jose-San Francisco Bay Area rank as the world's two most S&T-intensive clusters, measured by R&D relative to population density.⁴

EXHIBIT 18

Top 15 science and technology (S&T) clusters by S&T intensity, 2024

Rank per capita	Cluster Name	Economy	Top Applicant	Top Scientific Organization
1	Cambridge	UK	ARM	Cambridge University
2	San Jose-San Francisco, CA	US	Google	Stanford University
3	Eindhoven	NL	Philip Electronics	Eindhoven University of Technology
4	Oxford	UK	Oxford University	Oxford University
5	Boston-Cambridge, MA	US	MIT	MIT
6	San Diego, CA	US	Qualcomm	University of California, San Diego
7	Daejeon	KR	LG Chem	Korea Adv. Inst. of Science & Tech.
8	Ann Arbor, MI	US	University of Michigan	University of Michigan
9	Seattle, WA	US	Microsoft	University of Washington, Seattle
10	Munich	DE	BMW	Technical University of Munich
11	Beijing	CN	BOE Technology	Tsinghua University
12	Göteborg	SE	LM Ericsson	University of Gothenburg
13	Raleigh, NC	US	Duke University	Duke University
14	Stockholm	SE	LM Ericsson	Karolinska Institutet
15	Tokyo-Yokohama	JP	Mitsubishi Electric	University of Tokyo

Source: WIPO Statistics Database, April 2024

Technology Drives FDI (Foreign Direct Investment)

Trends in foreign direct investment (as distinct from equity investment) point in two directions. Since Brexit in 2016, with compounding effects from the pandemic, foreign direct investment in the UK has declined, having peaked in 2017.⁵ A 2023 report from the Tony Blair Institute for Global Change suggests that business investment in the UK is 31% below its pre-pandemic trend.⁶ For context, foreign direct investment across Europe, including the UK, has trended downward since the start of the pandemic and still remains below 2020 levels. The UK, however, was the only country in the top three (France, the UK, and Germany) to see its numbers rise. Greater London absorbed 359 projects in technology and financial services, a 20% increase over 2022, making it Europe’s best performing region for investment. Scotland was the next best UK performer, with 142 FDI projects (up 14% from 2022). An EY survey of investors suggested that 69% intended to invest in the UK in 2024, with more than half planning to invest in London.

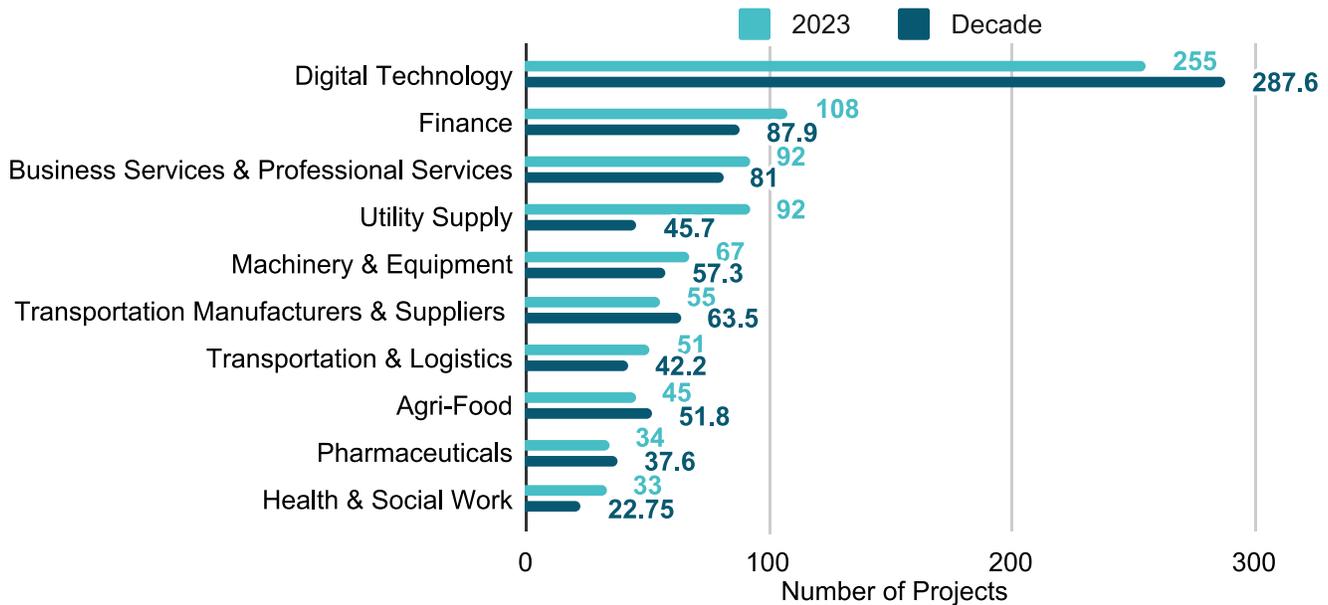
That growth is being led by investment in digital technology, with the UK accounting for 27% of all European digital technology investment projects. The UK recorded 255 technology projects in 2023, an 8.9% increase from 2022. The United States was the top investor, with 22% of all projects originating in the US.⁷

AI

AI has emerged as the UK’s most dynamic sector for tech investment. The \$3.4 billion raised by UK AI startups in 2023, a 10% increase over 2022, placed the UK first in Europe for AI funding. Thirty-four UK AI companies exited in 2023, 33 through acquisitions and one going public, with 11 exiting in the first quarter of 2024. At that point, the combined market value of the UK’s AI sector stood at \$92 billion, with more than 1,800 VC backed AI startups and 20 unicorns, and 16% of total UK VC investment in technology going into AI startups in Q1 2024. Two-thirds of these AI startups are based in London, with significant clusters in Oxford, Cambridge, Edinburgh, and Manchester.⁸

EXHIBIT 19

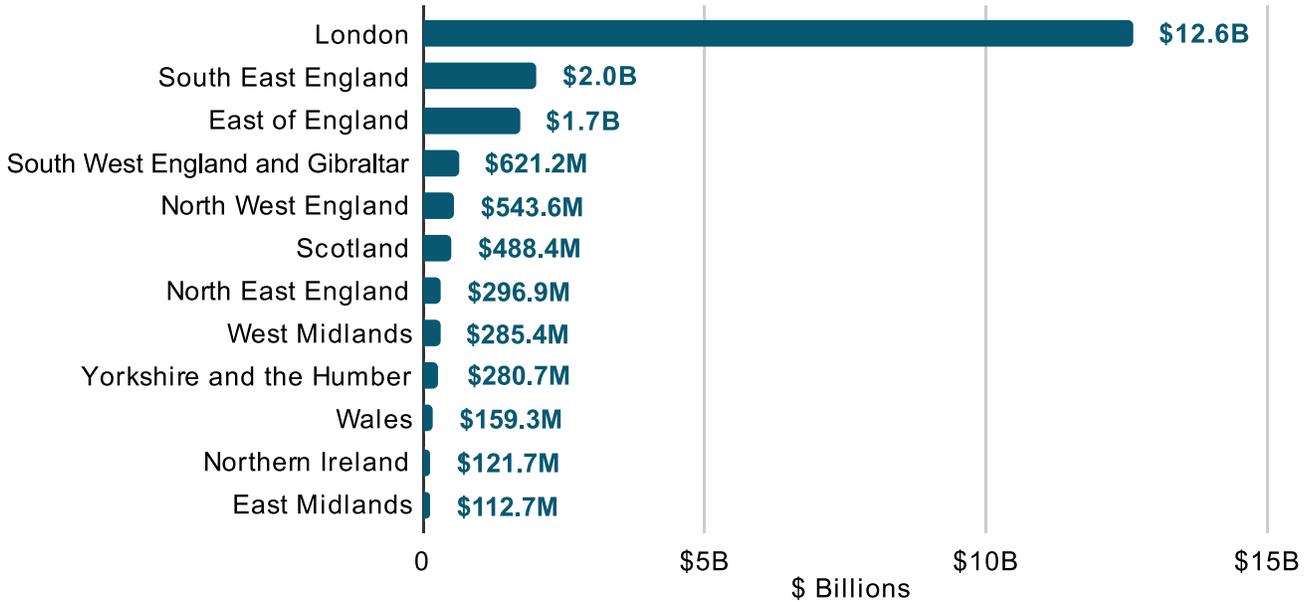
UK FDI projects by sector in 2023 and average projects per annum 2014–2023



Source: EY European Investment Monitor (EIM), 2014–2023

EXHIBIT 20

VC investment by UK region, 2024



Data Source: Dealroom.co

Startups, Universities, and Venture Capital

London is the center of venture and private equity activity in the UK, followed by Cambridge and cities such as Oxford, Edinburgh, Manchester, Glasgow, Newcastle upon Tyne, Bristol, Belfast, and Nottingham.⁹

The UK is home to nearly 550 venture and PE funds. While all regions in the UK are represented with at least one fund and significant concentrations can be found in the North West, the South East, and Scotland, the lion’s share—about 80%—are based in London. More than half of the companies being funded are also London-based.¹⁰

Leading investors, based on level of activity (investment deals), include Balderton Capital, Octopus Ventures, Seedcamp, 83 North, Anthemis Group, Ascension, Atomico, Eight Roads Ventures, LocalGlobe, TechStars, and Entrée Capital.¹¹ Parkwalk was the UK’s leading investor in university spinouts in 2023, with 29 deals valued at £304 million pounds and with dedicated funds associated with Oxford, Cambridge, and Imperial College London.¹² In addition to venture capital, angel

investment groups are a significant funding source for UK startups, with approximately 60 angel networks active across the country. Overall, there are roughly 11,000 active business angels, with about 70% located in London.¹³

As in Silicon Valley and other major technology centers around the world, UK deal count and deal value peaked in 2021 and early 2022 and have since then flattened as exits and venture markets have adjusted back to pre-COVID levels.¹⁴

University spinouts are a fertile field for technology investors and, to a large degree, define the investment landscape. Mirroring the challenging environment for startup investment worldwide, equity investment in UK university spinouts has been falling since its peak of £2.73 billion in 2021—to £2.38 billion in 2022 and £1.75 billion in 2023. University spinouts, however, attracted investment totaling £1 billion in the first half of 2024, suggesting a rebound.

Approximately one-third of investment in university spinouts comes from outside the UK. Overseas investors are playing a growing role, with 14% of equity deals in 2023 being entirely by foreign investors and 23% with

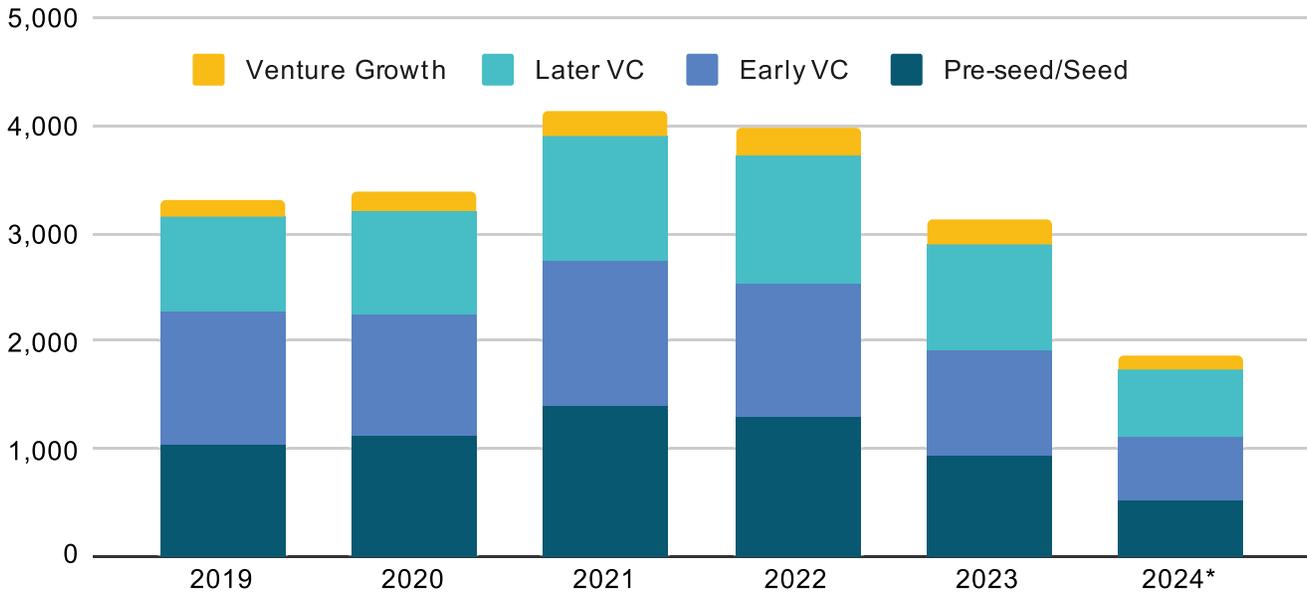
UK-foreign co-investment (compared to 4.35% and 14.6% respectively in 2020). Among foreign investors, the United States leads by a large margin in the number of equity deals financed. The United States also strongly leads in acquisitions of UK spinouts, accounting for 59 between 2014 and H1 2024, compared to acquisitions originating from inside the UK (48), Japan (11), Germany (5), and Switzerland (4).

Even in a weak market, some verticals have shown strength. Life sciences and AI, where the UK has a competitive advantage, accounted for the largest share of deals from the second half of 2023 through the first half of 2024, with 210 and 53 deals respectively. Of the

university spinout exits since 2014, 12 of the top 15 are in the life sciences sector.¹⁵

While most early-stage investment in the UK comes from local venture firms, most later-stage investment comes from the US. UK technology companies that go public primarily list in the US, where the pool of capital is larger, despite efforts by the London exchange to encourage local listings. The US is also the primary overseas market—ahead of Europe—for technology and life sciences startups when they expand globally. This is particularly the case for life sciences, where the local market is dominated by the National Health Service and the US market is both larger and more diverse.

EXHIBIT 21
UK VC-backed company counts by stage



Data Source: PitchBook *As of October 2, 2024

EXHIBIT 22**Top academic Institutions by number of equity deals secured by their spinouts, 2023**

University of Oxford	62	University of Leeds	11
University of Cambridge	45	University of Warwick	10
Imperial College London	28	King's College London	10
University of Bristol	26	Queen's University Belfast	9
University of Sheffield	17	University of Nottingham	7
University of Edinburgh	17	University of Glasgow	7
University College London	15	University of Birmingham	7
Royal College of Art	15	Swansea University	7
Newcastle University	15	Loughborough University	7
University of Strathclyde	14	University of Surrey	5
University of Southampton	14	Heriot-Watt University	5
University of Exeter	13	City University	5
University of Manchester	12		

Data Source: Beauhurst and Parkwalk, Equity Investment into Spinouts report, September 2024

EXHIBIT 23**Top academic institutions by equity volume secured by their spinouts, 2023**

University of Oxford	£406m	University of Edinburgh	£35.0m
University of Cambridge	£248m	University of Birmingham	£30.6m
University College London	£243m	University of Leeds	£25.3m
Imperial College London	£139m	Babraham Institute	£25.0m
University of Manchester	£95.3m	University of Sheffield	£22.9m
King's College London	£72.2m	Royal College of Art	£20.8m
University of Bristol	£59.4m	Queen's University Belfast	£17.5m
University of Strathclyde	£55.5m	Cardiff University	£12.4m
University of Glasgow	£54.9m	Cranfield University	£12.3m
Culham Centre for Fusion Energy	£52.7m	University of Exeter	£11.0m
University of Warwick	£51.6m	University of St Andrews	£10.1m
University of Southampton	£48.5m	University of East Anglia	£10.1M
Newcastle University	£39.2m	Swansea University	£9.72M

Data Source: Beauhurst and Parkwalk, Equity Investment into Spinouts report, September 2024

EXHIBIT 24

Top nationalities of overseas investment funds participating in UK spinout equity deals, 2014–H1 2024, by deal count

	United States	526
	Netherlands	62
	Germany	55
	France	53
	China	42
	Switzerland	35
	Australia	29
	Japan	25
	Ireland	24
	Singapore	20
	Hong Kong	20
	Denmark	17
	South Korea	17
	Spain	16
	Belgium	16

Data Source: Beauhurst and Parkwalk, Equity Investment into Spinouts report, September 2024

Distributed Innovation

Research universities are at the heart of the UK’s technology innovation system. The U.S. News and World Report 2024–2025 university survey includes eleven UK universities in its Top 100 Global Universities ranking, with three in the top ten.

- University of Oxford (#1 in the UK, #4 globally)
- University of Cambridge (#2 in the UK, #6 globally)
- University College London (#3 in the UK, #7 globally)
- Imperial College London (#4 in the UK, #12 globally)
- King’s College London (#5 in the UK, #36 globally)
- University of Edinburgh (#6 in the UK, #38 globally)
- University of Glasgow (#7 in the UK, # 61 globally)
- University of Manchester (#8 in the UK, # 67 globally)
- Queen Mary University London (#9 in the UK, #92 globally)
- University of Birmingham (#10 in the UK, #94 globally)
- University of Bristol (#11 in the UK, # 96 globally)

Assessing 2,250 universities worldwide, criteria include research reputation, research citations, most highly cited research publications, and international collaboration.¹⁶

Some UK universities have formed regional consortia to pool innovation resources and amplify their impact. **Northern Gritstone**, an independent investment organization, was formed through the Universities of Manchester, Leeds, and Sheffield to support the commercialization of science and IP-rich businesses originating on their campuses and across Northern England.¹⁷ Similarly, **Midlands Mindforge** has been formed by eight universities in the Midlands region—Aston University, the University of Birmingham, Cranfield University, Keele University, the University of Leicester, Loughborough University, the University of Nottingham, and the University of Warwick—to invest in and accelerate the development of university spinouts and early-stage IP-rich businesses. Branded as Midlands Innovation, the universities group looks to address the significant deficit in funding available to early-stage technology businesses in the region.¹⁸

Within Europe, the UK is the leading country for university spinouts, with Cambridge and Oxford universities ranked number 1 and 3 by value produced, with ETH Zurich in second place. Reflecting the role their universities play, Cambridge and Oxford also account for the most venture capital raised in the UK outside London in 2024, followed by Edinburgh and Manchester.¹⁹

London is the heart of the UK’s innovation system, which extends to the nearby cities of Oxford and Cambridge—sometimes referred to as the Oxford-Cambridge Arc. The city concentrates university research, venture capital, and startups, as well as large numbers of incubators, accelerators, and co-working spaces. Research universities with strength in technology include Imperial College London, University College London, King’s College London, and Queen Mary University of London.²⁰ Prominent incubators and accelerators include Collider (specializing in marketing and advertising technology startups),²¹ Global Tech

Advocates Launchpad,²² Level39, Techstars London, 500 Startups London, Founders Factory,²³ Entrepreneur First,²⁴ and the London Business School Incubator²⁵. Tech companies particularly cluster in Shoreditch and the intersection known as Silicon Roundabout.²⁶

Though concentrated in Greater London, technology innovation and startup activity is widely distributed across the UK, in cities such as Cambridge, Oxford, Manchester, Glasgow, Edinburgh, Bristol, and Belfast. Some cities like Glasgow (health) and Belfast (cybersecurity) have distinct strengths while others have unique assets—Bristol, for example, is home to the Bristol Robotics Laboratory, a collaborative research partnership between the University of Bristol and the University of the West of England;²⁷ to the newly built Isambard-AI2 supercomputer (hosted at the University of Bristol and the fastest in the UK),²⁸ and to strong aerospace programs at both universities. Not surprisingly, in all these cities access to talent is a driver and the presence of leading universities plays a central role.

EXHIBIT 25

Combined enterprise value of UK tech companies founded since 1990



Source: Dealroom.co, The rise of Cambridge tech, and its role in the future of innovation report, May 23, 2024



Manchester

The birthplace of the Industrial Revolution, Manchester was for many years a major manufacturing center and base for the textile industry but emerged early as a center for digital activity. The world's first stored-program digital computer was designed at the University of Manchester in 1948 and Alan Turing, who cracked the Enigma Code, was based there. Today, approximately 28% of jobs based in Manchester are in the digital technology sector,²⁹ with major clusters in Enterprise City in central Manchester and Media City UK in Salford. Several accelerators such as ZEEBOX, Dotforge and Accelerate Me operate in the city, as well as a small but growing cluster of early-stage venture funds (Praetura Ventures, DSW Ventures, and KM Capital).³⁰

Cybersecurity is a major focus, attracting the cyber divisions of global defense companies such as Raytheon, BAE Systems AI, and Northrop Grumman, as well as the UK's government security agency GCHQ with approximately 1,000 staff. The Manchester Digital Innovation and Security Hub (DISH), a £10 million program established in 2021, provides collaborative space for companies, universities and government to share best practices for addressing cyber threats, while

the GM Cyber Foundry, a £6 million initiative, links the cyber programs of four universities in the North West. Other sectors growing in the city include e-commerce, gaming, and artificial intelligence.³¹

The city's innovation system builds on key universities: Manchester Metropolitan University, the University of Salford, the University of Bolton, and particularly the University of Manchester, which hosts over 40,000 students and ranks 4th in the UK for engineering and technology after only Oxford, Cambridge, and Imperial College. Its Innovation Factory incubates and commercializes technology innovations that the university generates. From this base, Manchester has grown to be the UK's largest digital hub outside of London. With tech startups employing an estimated 13,800 people,³² the city has produced several unicorns, including cloud productivity data platform Matillion, ecommerce leaders Boohoo, THG, and AO.com, and car marketplace AutoTrader.³³ In the summer of 2024, UK semiconductor giant Arm Holdings expanded its presence, doubling its footprint in the city.³⁴ Other major tech global companies with a footprint in the city include Booking.com, IBM, Amazon, Microsoft, and Google.³⁵



Buchanan Street, Glasgow, UK

Glasgow

In Glasgow, three universities—the University of Glasgow, the University of the West of Scotland, and the University of Strathclyde—play key roles. The city’s fast-growing ecosystem hosts startups and scaleups with a collective value of more than £4 billion, with nearly 30% of total enterprise value coming from regional university spinouts.³⁶ Glasgow supports three Innovation Districts—Glasgow City Innovation District, Glasgow Riverside Innovation District, and the Advanced Manufacturing Innovation District—that support tech enterprises with a range of accelerator programs.³⁷ The city has been home to the JPMorganChase Technology Centre for 25 years, one of the firm’s 23 Global Technology Centres and a key site for software development. The firm is one of the largest employers in Scotland and in April 2024 expanded into new facilities.³⁸

Key technology sectors include food, education, enterprise software, sensing, robotics, photonics, climate, space, and particularly healthtech—which accounted for more than 50% of all investments through 2023, ranking Glasgow in 15th place among European ecosystems for VC investment in the sector in 2023. Overall, early-stage investment in the Glasgow tech ecosystem reached a record £68 million that year, and Series B and

C investment likewise reached a record of £123 million. Top investors in Glasgow since 2019 have a local Scottish cast and the largest share of investment overall comes from UK investors, but in 2021 and 2023, the share of investment coming from the US more than tripled.³⁹

Belfast

Queen’s University Belfast and Ulster University (a top-ranked campus for biomedical science and nutrition and food sciences) anchor research and entrepreneurial development in Belfast. The city’s fast-growing knowledge economy centers on healthtech, hardware, the Internet of Things (IoT), and social media—fields that account for 40% of the Belfast’s startups.⁴⁰ The city is particularly strong in cybersecurity and is a destination for investment by US firms such as the Bay Area’s Proofpoint, Imperva, Anomali, and Contrast Security. Local firms such as Metacompliance, Angkola, Salt Communications, and Skurio are also developing cybersecurity products and services for the international market. Queen’s University Belfast is home to the Centre for Secure Information Technologies (CSIT), the UK’s Innovation and Knowledge Centre (IKC) for cybersecurity and an engine for both research and commercial spinouts.⁴¹



The Titanic Quarter, Belfast, NI

In 2021, leading universities and the Belfast City Council signed the Belfast Region City Deal, an agreement to invest £1 billion to support tourism, digital transformation, infrastructure and innovation, with more than £300 million being invested into five centers of excellence focusing on industries of the future: the Advanced Manufacturing Innovation Centre (AMIC), the Centre for Digital Healthcare Technology (CDHT), the Global Innovation Institute (GII), the Institute for Research Excellence in Advanced Clinical Healthcare (iREACH), and Studio Ulster, a large-scale virtual production studio.

The city's startup support system includes HBAN (a business angel network), investment funds Clarendon Fund Managers, Co-Fund NI, Whiterock Capital Partners, TechStart Ventures, Innovation Ulster (a technology venture company owned by Ulster University), and QUBIS (the commercialization arm of Queen's University Belfast).⁴² The 25-year-old Northern Ireland Science Park, now known as Catalyst, is home to a cluster with approximately 140 companies and 2,700 people working across its sites. Silicon Valley is finding opportunities, such as Catalyst-supported cybersecurity firm Titan IC, which was recently bought by Nvidia.⁴³

Oxford

The 2024 WIPO Global Innovation Index ranks Oxford as one of the top science and innovation clusters in the world by intensity based on the per capita production of patents and scientific articles—indicators of the presence of inventors and scientific authors.⁴⁴ Its innovation system is centered on the University of Oxford, which is the leading university patent filer in the UK. There are 2,950 technology companies in the Oxfordshire region employing 29,000 people, with 12,000 of those employed in R&D intensive activities. Of those companies, 1,500 are science, engineering, or mathematics based.⁴⁵

Oxford has demonstrated strength across a range of technologies including life sciences—producing high impact companies such as Nanopore (a major firm producing gene sequencing equipment), Immunocore, and Vaccitech; energy—including commercial fusion companies Tokamak Energy and First Light Fusion; autonomous mobility—with companies such as Oxbotica and Saietta; quantum computing; materials science; chemistry; and data science.⁴⁶ The city's life sciences cluster centers on the University of Oxford's Old Road Campus in Headington.



Anchors for research and innovation include charities such as the Oxford-based Wellcome Trust, which disburses approximately \$1.6 billion in research funds each year; the Wellcome Sanger Institute, which specializes in genomic sequencing; the Jenner Institute (named after Edward Jenner, the inventor of vaccination), which developed the widely used vaccine for COVID-19; and pharmaceutical companies GlaxoSmithKline and AstraZeneca, which produced the Oxford-AstraZeneca COVID-19 vaccine.⁴⁷

University programs that support entrepreneurs and technology commercialization include the BioEscalator, which since its founding in 2018 through February 2023 has supported more than 30 life sciences companies that have attracted more than £1.6 billion of funding and investment; the Oxford Foundry (a startup incubator and accelerator); and Oxford Sciences Innovation (an investment company that funds and supports university spinouts in science and technology). Noteworthy science parks dot

Oxfordshire, including Oxford North (associated with St. John's College), Oxford Science Park (owned by Magdalene College), ARC Oxford, Begbroke Science Park (owned by the University of Oxford), and Harwell Science Park, with new research facilities planned for Milton Park and Botley Road.⁴⁸

The Oxford Science Park is home to a new research and development facility funded by the Ellison Institute of Technology (EIT) at a cost of £1 billion.⁴⁹ Founded by Oracle Chairman of the Board and CTO Larry Ellison and supported by computing capability from Oracle, EIT prioritizes major societal challenges with programs focused on Health & Medical Science, Food Security & Sustainable Agriculture, Climate Change & Clean Energy, and Government Innovation in the Era of AI. With the goal of creating commercially sustainable companies for public good through research but also through funding and assistance in scaling, its 300,000 square foot campus, designed by Sir Norman Foster, is slated to open in 2027.⁵⁰



The Mathematical Bridge, Queen's College, University of Cambridge, UK

Cambridge

While London dominates the UK tech scene, Cambridge has risen to prominence in both the UK and Europe. The city particularly excels in startup activity and VC investment in deeptech (products and companies based on novel scientific or engineering breakthroughs) in fields such as generative AI, autonomous mobility, quantum computing, semiconductors, AI drug discovery, and oncology. Cambridge ranks #3 globally as a deeptech hub, behind the Bay Area and Boston. Accounting for 18% of the total value of UK tech, it ranks as the number one city in the world for the production of unicorns per capita, ahead of the Bay Area.⁵¹ With 36 research parks and more than 5,000 innovation-led companies⁵² with a combined value of \$191 billion in 2024, noteworthy companies to emerge from the city's technology ecosystem include semiconductor company Arm (valued at over \$100 billion), Quantinuum (quantum computing), Darktrace (cybersecurity), Wayve (autonomous vehicles), CMR Surgical (surgical robots) and Abcam (biotech).

The city's innovation ecosystem is anchored by the University of Cambridge, which ranks number one in Europe for university-related spinouts.⁵³ Of 62 venture capital rounds in the city through the third quarter of 2024, nearly half (29) were raised by founders who studied at the University of Cambridge.⁵⁴ Other research campuses include Anglia Ruskin University and the MRC Laboratory of Molecular Biology.⁵⁵ The Cambridge Biomedical Campus is the largest center of medical research and health science in Europe.⁵⁶ Cambridge is also home to significant venture firms such as Cambridge Innovation Capital, which in February 2025 announced a new £100 million Opportunity Fund to invest in growth-stage deeptech and life sciences companies.⁵⁷

Innovate Cambridge, launched in 2022 to define the future of the city's science and tech ecosystem and maintain its competitiveness, in October 2024 announced a ten-year vision that aims to double venture investment, double the rate at which unicorns are produced, and double the number of science and innovation companies in the city by 2034.⁵⁸

National Policies and Initiatives Supporting Technology Innovation

Several government policies and initiatives are in place that support the UK ecosystem.

The **Enterprise Investment Scheme (EIS)**, in place since 1994, provides tax benefits for individual investors in unlisted early-stage companies, with qualified companies (having fewer than 250 employees and being less than seven years old) able to raise up to £5 million annually with a lifetime cap of £12 million. Companies considered to be “knowledge-intensive” —i.e., creating intellectual property based on R&D—benefit from relaxed eligibility criteria.⁵⁹ A parallel incentive for smaller companies, the **Seed Enterprise Investment Scheme (SEIS)** provides tax relief to individual investors buying shares of unlisted very-early-stage companies subject to conditions including having fewer than 25 full-time employees and assets totaling less than £350,000. The funding is subject to a cap of £250,000 pounds and must be spent to prepare for or carry out a qualified trade within three years of the share issue.⁶⁰ The **Venture Capital Trust Scheme (VCT)**, introduced in 1995, encourages individuals to invest indirectly in portfolios of small, higher risk companies through Venture Capital Trusts, investment vehicles managed by fund managers who are usually associated with larger investment groups. Investors subscribe for shares, which managers invest in qualified companies. To qualify, companies must have fewer than 250 employees (500 if the company is knowledge intensive) and gross assets of no more than £15 million before investment and £16 million immediately after investment. VCTs are exempt from capital gains.⁶¹

R&D tax relief is available for qualified small and medium enterprises (SMEs)⁶² that work on innovative projects in science and technology. To claim R&D tax relief, a company must be engaged in a qualified project that seeks an advance in a field of science or technology by resolving scientific or technological uncertainty.⁶³ The relief allows SMEs to deduct an extra 86% of qualifying costs from their trading profit for tax purposes.⁶⁴

The **Science and Technology Framework**, announced by the UK government in 2023, establishes a vision and goals for science and technology through 2030, with a focus on five critical technologies: AI, engineering biology, future telecommunications, semiconductors, and quantum technologies. Goals include increased levels of public and private R&D, STEM skills development, narrowing the financing gap for science-and-technology-based companies through a deeper pool of domestic capital, supporting demand for innovative technologies through government procurement, developing international science and technology partnerships, investment in access to innovation facilities and infrastructure, and pro-innovation regulation.⁶⁵

UK Research and Innovation (UKRI) funds scientific research, with a particular concentration on life sciences.⁶⁶ The UK government’s most recent budget, in October 2024, committed to delivering record levels of R&D investment, with £20.4 billion allocated in 2025–2026.⁶⁷ Science and technology R&D funding as a percentage of GDP has been low compared to other OECD member and selected non-member economies (Israel, South Korea, Taiwan, United States, Sweden, Belgium, Japan, Switzerland, Austria, Finland) and only slightly above the OECD average.⁶⁸

Innovate UK, part of UKRI, is the UK’s national innovation agency. Its mission is to help companies to grow through the development and commercialization of new products, processes, and services. Support includes Innovation Loans for SMEs (offering repayable finance for businesses that are pre-revenue or pre-profit but have identified a clear route to market), Knowledge Transfer Partnerships (facilitating project partnerships between businesses or not-for-profit organizations and educational institutions, research and technology organizations, or Catapults), and grants to support domestic and international collaboration to grow the UK economy. Strategic priorities include working across the

ecosystem to bolster the science and technology skills pipeline and delivering accelerator programs that support place-based innovation across the UK.⁶⁹

The **Innovate UK Catapult Network** supports nine technology and innovation centers across more than 65 locations in the UK, facilitating university-industry collaboration and providing access to R&D facilities and ecosystem services that support innovation from the business concept stage through readiness for commercialization.⁷⁰ Functionally the centers span Cell and Gene Therapy (London, Stevenage, Braintree, Edinburgh), Compound Semiconductor Applications (Newport, Bristol, Northeast, Scotland), Connected Places (London, Milton Keynes, Birmingham), Digital (London, Belfast, Bristol, Sunderland), Energy Systems (Birmingham), High Value Manufacturing (7 centers), Medicines Discovery (Cheshire), Offshore Renewable Energy (Glasgow, Blyth, Leven, Pembrokeshire, and other coastal regions), and Satellite Applications (Didcot, County Durham, Leicester, Portsmouth, Westcott, Cornwall).⁷¹

The **National Quantum Strategy** is a ten-year vision announced in 2023 to anchor the UK as a world-leading center for quantum science and engineering, including a goal to fund an additional 1,000 postgraduate research students in quantum-related disciplines. Starting from 2024, the government has committed \$3.15 billion (£2.5 billion) to developing quantum technologies, more than doubling public investment.⁷² Key components include quantum test beds driven by the UKRI Technology Missions Fund and the UK's National Quantum Computing Center, a Small Business Research Initiative (SBRI) to accelerate the development of scalable quantum computers, and a £15 million Quantum Catalyst Fund, delivered through Innovate UK, to accelerate the adoption of quantum solutions by the public sector.⁷³

The UK's Financial Conduct Authority (FCA) offers three services designed to address regulatory issues while stimulating innovation: the **Digital Sandbox** offers a safe space for the development of innovative solutions in the fintech and digital technology sectors; the **Regulatory Sandbox** allows testing of innovative propositions in a live market environment; and

Innovation Pathways provides tailored regulatory support to help companies navigate the complexities of regulation as they grow.⁷⁴ Through the **Company Share Option Plan**, the use of stock options by emerging companies to attract and hold talent was recently incentivized by an increase in the value of unexercised options that an employee could hold without taxation from £30,000 to £60,000.⁷⁵ A **Patent Box** allows businesses to pay a lower corporate tax on profits earned from patented inventions.⁷⁶

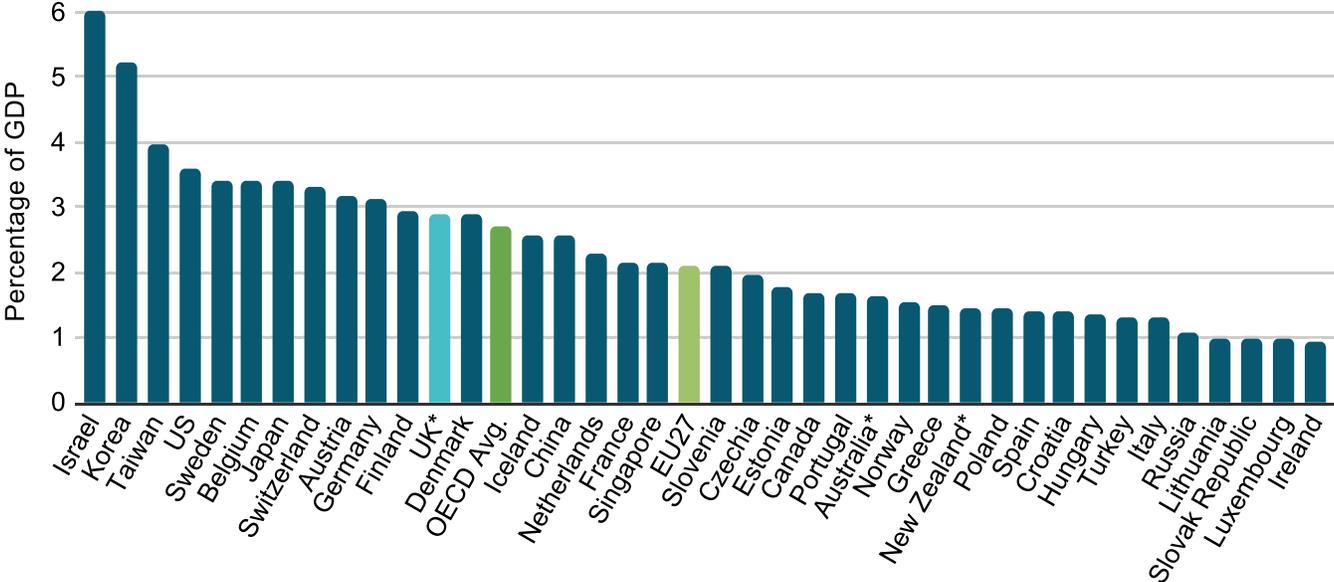
The **Global Talent Visa** enables individuals to live and work in the UK for up to 5 years at a time and offers multiple extension options when renewed, including the possibility of indefinite leave to remain and settle in the UK after 3 to 5 years, depending on one's field of work or study.⁷⁷ The program is specifically targeted at applicants with technical or business skills in the fields of academia or research, arts and culture, and digital technology and has two application pathways: the Exceptional Talent pathway is for individuals from overseas who are established in their careers (5+ years) and have demonstrated impact and innovation as a founder or employee; the Exceptional Promise pathway is for individuals who are at an earlier stage of their careers (less than 5 years) and have demonstrated the potential to make an early impact as a founder or employee.⁷⁸

The UK government's **AI Opportunities Action Plan**, published in January 2025, outlines how the government will develop the opportunities of AI in the coming decade. This includes plans to create new AI Growth Zones to speed planning proposals and build more AI infrastructure, to increase public compute capacity by twentyfold, and to create a National Data Library to safely and securely unlock the value of public data to support AI development.

The government also set out plans for a new Industrial Strategy to create a pro-business environment and support high-potential clusters across the country. This includes supporting eight growth-driving sectors: advanced manufacturing, clean energy industries, creative industries, defense, digital and technologies, financial services, life sciences, and professional and business services.⁷⁹

EXHIBIT 26

Annual gross domestic expenditures on science and technology R&D as a percentage of GDP across countries, 2022 or latest year available



Data Source: OECD, Main Science and Technology Indicators: Highlights from the March 2024 Edition *2021 latest year data available

3

US-UK Technology Investment

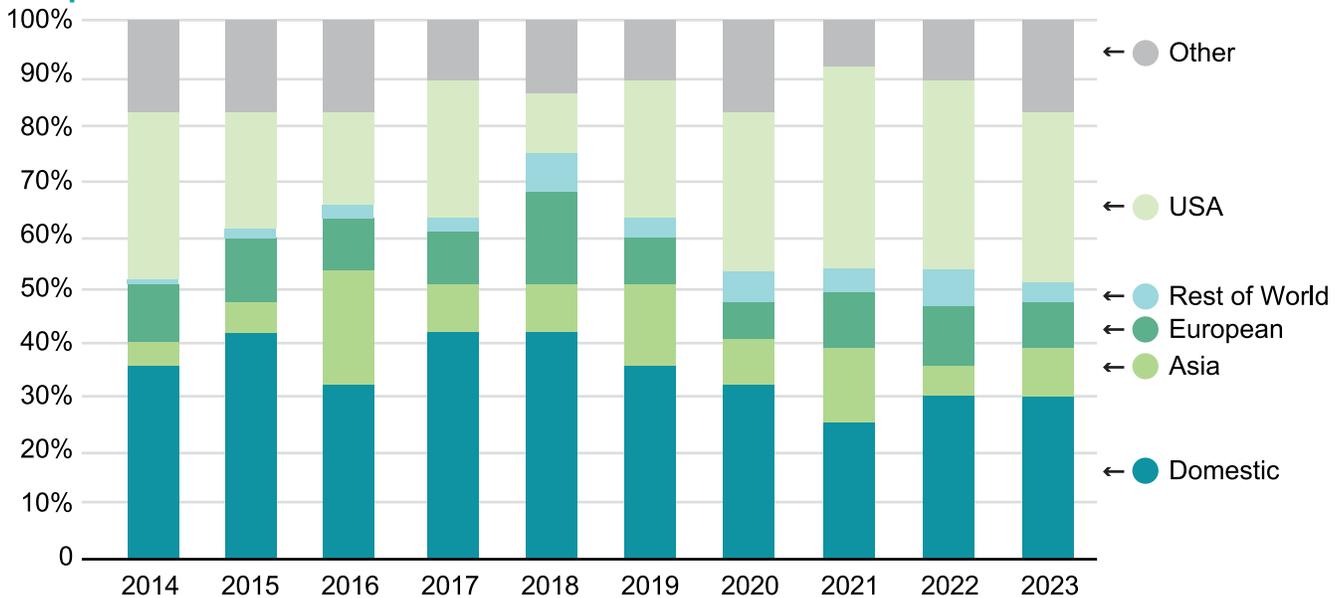
Over the past ten years on average, 64% of venture investment in tech startups in the UK has come from overseas. The United States has been the largest investor, accounting for 26%. In 2023, the investment from the US was 28%, with internal UK investment accounting for 32%.¹ The top five investors by VC deal count from 2020 to 2023 included Plug and Play Tech Center, with 204 deals.² This reflects in part Plug and Play's business model of high-volume, small-scale investing. The scale of US investment in the UK's venture

market and that scale when compared to domestic venture investment points to the depth of the UK market for tech investment and the symbiotic channels that link the UK with the US, as well as the relative weakness of later-stage venture in the UK.

Removing the United States from the picture, in 2023 the value of funds raised in the UK was greater than in any other country, at \$95.6 billion. For context, the value of funds raised in the US that same year was \$631.8 billion.³

EXHIBIT 27

Percentages of domestic and foreign investment into UK tech startups over the past decade based on location of investor HQ



Source: UK Tech in the Age of AI: The Tech Nation Report 2024

Bay Area Technology Investment in the UK

As the world's leading center for technology development, venture capital, and entrepreneurship, the San Francisco/Silicon Valley Bay Area is a major partner in the UK's technology ecosystem.

Investing in Research and Data Infrastructure

Leading technology companies with deep Bay Area connections have become prominent investors in the UK's research and data infrastructure. Microsoft, for example, announced in 2023 a 3-year plan to invest \$3.2 billion in its next-generation AI data center infrastructure in the UK, growing its data center footprint across multiple sites including London and Wales by 2026.¹ Also in 2023, Palantir Technologies, which counts the National Health Service among its clients, chose London for its new European headquarters for AI research and development.² Global data center provider CloudHQ has its EMEA headquarters in London and operates a data center in Didcot, one of its 12 campuses across the world.³ Most recently, in January 2025, data center developer Vantage Data Centers announced a £12 billion investment in data centers across the UK, including one of Europe's largest data center campuses in Wales.⁴ Investment in technology infrastructure carries over into the sustainable solutions and biotech sectors, where Oracle's founder has established the Ellison Institute of Technology at Oxford Science Park, and life sciences infrastructure company BioMed Realty has invested in 15 life sciences properties in Cambridge, including Cambridge Science Park and Granta Park.

Technology Companies

Leading Bay-Area-headquartered technology companies have established significant operations in London and elsewhere in the UK in fields spanning engineering, sales, and research. Prominent among them are

- Google
- Meta
- Apple
- Uber
- Netflix
- X
- Intel
- Cisco
- Oracle
- eBay
- Adobe
- Nvidia
- Electronic Arts
- VMware
- PsiQuantum
- Salesforce

Large Silicon Valley tech companies and platform providers have also significantly increased their investment in European startups. **Nvidia** has recently emerged as a major player, having participated in 8 funding rounds for European startups in an 18-month period in 2023–2024, with \$1.9 billion invested. **Google** has participated in 50 of 90 startup funding rounds with big tech involvement since 2019. **Meta** leads on exits, having acquired twelve European tech startups in the last five years. Beyond direct investment, large platform providers such as Google engage growing European tech companies through marketing support and ad credits accompanying their cloud services.

In the first half of 2024, investment by large US technology companies in Europe grew dramatically, driven by the large-scale funding of AI unicorns, with Nvidia investing in UK company Wayve’s \$1.05 billion Series C round led by Softbank. Of the 7 European tech startups that have gone public with backing from large tech companies, 5 are from the UK, with Google being an investor in 2—Autolus (in 2018) and Barinthus (in 2021). Major US acquirers of UK startups include Amazon and Microsoft.⁵

The UK also serves as a major research and innovation base for Silicon Valley companies. Google, for example, opened an R&D center in London in 2022 to develop tech support for people with disabilities. UK partners include the Royal National Institute of Blind People, the Royal National Institute for Deaf People, and the charity Everyone Can. An example of product focus is Google’s development of the Project Relate app, which is designed to help people with non-standard speech to communicate clearly with others.⁶ Elsewhere in the UK, Google and the University of Cambridge have a multi-year research agreement that enables researchers and scientists from Google to collaborate with counterparts at Cambridge on foundational AI research in fields such as climate and sustainability, and AI ethics and safety.

Google is also the first funding partner for the university’s Centre for Human-Inspired Artificial Intelligence (CHIA), which brings together researchers and experts from computer science, engineering, and other disciplines to develop AI that is beneficial to humanity and supports human values. The new partnership builds on many years of collaboration between the university, Google Research, and Google DeepMind.⁷

Building on the UK’s push into quantum technology, Palo Alto-based quantum computing company **PsiQuantum** operates an advanced R&D facility, opened in March 2023 in Daresbury in the North West of England. In late 2024, Prime Minister Kier Starmer and Chancellor of the Exchequer Rachel Reeves visited the company to discuss how the testing and development of prototype systems in Daresbury can play a critical role in the effort to build the first utility-scale quantum computers. PsiQuantum is deeply connected to the UK, with co-founders Jeremy O’Brien and Mark Thompson having been professors at the University of Bristol and directors of photonic quantum computing centers there, and co-founder Terry Rudolph having been a professor of quantum physics at Imperial College. Co-founder and chief scientific officer Pete Shadbolt received his PhD at Bristol and completed his post-doctoral studies at Imperial.⁸

EXHIBIT 28

FDI from Bay Area companies into the UK by sector, 2014–2024

Sector	Capital Expenditures (\$ millions)	Jobs Created
ICT & Electronics	\$6,904.0	8,374
Energy	\$795.3	100
Life Sciences	\$673.4	3,074
Professional Services	\$63.9	2,581
Consumer Goods	\$50.9	207
Creative Industries	\$36.9	2,428
Industrial	\$35.8	428
Financial Services	\$21.6	272
Transport Equipment	\$20.1	210

Source: Bay Area Council Economic Institute analysis of fDI Markets data

EXHIBIT 29

Largest FDI deals from Bay Area companies into the UK, 2014–2024

Company	Capital Expenditures (\$ millions)	Jobs Created	Sector	Date
Salesforce	\$2,500.0		ICT & Electronics	Jun 2023
Google	\$1,000.0		ICT & Electronics	Jan 2024
Google	\$986.6	3.6	ICT & Electronics	Jan 2022
Fulcrum BioEnergy	\$795.3	100	Energy	Feb 2021
Prologis UK	\$626.5	2,120	Life Sciences	Nov 2024
Salesforce	\$364.2	317	ICT & Electronics	May 2018
Digital Realty Trust	\$234.7		ICT & Electronics	Nov 2018
Equinix	\$120.0		ICT & Electronics	Nov 2018
SSP Process Tech	\$100.0	90	ICT & Electronics	Feb 2022
Equinix	\$83.8		ICT & Electronics	Oct 2021

Source: Bay Area Council Economic Institute analysis of fDI Markets data

Bay Area Foreign Direct Investment in the United Kingdom

Bay Area companies have been major drivers of foreign direct investment (FDI) in the UK. From 2014 through 2024, there have been 647 distinct investments from Bay Area companies into the United Kingdom, totaling \$8.6 billion. That investment is estimated to have created 18,012 jobs. San Francisco (249 deals) and Santa Clara County (230 deals) accounted for the lion’s share of outbound deals at 39% and 36% respectively.

The largest deal for a single-year period was by Google in January 2024, with a capital expenditure of \$1 billion in artificial intelligence, cloud computing, and data centers. Salesforce had the largest overall number, with \$2.5 billion invested over a five-year period from June 2018 through June 2023, and a subsequent goal of investing \$4 billion in the UK through 2028.

ICT and Electronics, Energy, and Life Sciences Dominate FDI from Bay Area Companies into the UK

Bay Area investment is particularly focused on the ICT and electronics, energy, and life sciences sectors. In the ICT and electronics sector, which has attracted \$6.9 billion in FDI, companies such as Salesforce and Google have heavily invested in data centers and R&D across the UK. In the energy sector, which attracted

\$795.3 million in FDI, Bay Area companies such as Tesla and Google have made substantial investments in renewable energy and sustainable energy technology, aligning with the UK’s ambitious carbon reduction and green energy transition goals. The life sciences sector has also seen significant FDI, with \$673.4 million invested by companies like Gilead Sciences, Prologis, and Genentech into expanding operations in the UK’s biotech hubs.

Leading Bay Area Investors

Salesforce

Salesforce has made major investments in the United Kingdom, underscoring its expansion in Europe. In 2018, the company announced a five-year investment of \$2.5 billion to increase its footprint, with plans to build a second data center to support its growing customer base.⁹ In June 2023, it doubled down with an announcement that the company will invest another \$4 billion into its UK operations through 2028.¹⁰ In June 2024, the company announced the establishment in London of its first AI center, a space designed to foster collaboration by bringing together industry experts, partners, and customers to advance AI innovation. Separately, Salesforce has invested \$200 million into

UK-based technology through its Salesforce Ventures arm. Salesforce CEO for the UK and Ireland Zahra Bahroloumi explains: “AI has the potential to drive manor growth for UK businesses—with the UK AI market predicted to reach over \$1 trillion by 2035.”¹¹

Google

Over the past decade, Google expanded its presence in the UK through a series of strategic moves. In January 2022, Google invested \$1 billion in London to expand its office footprint, which together with its King’s Cross and Manchester offices will provide capacity for an additional 3,600 UK employees.¹² Two years later, Google invested another \$1 billion to establish a new data center in Waltham Cross, adding crucial computing capacity to support AI innovation and digital services for Google Cloud customers.¹³ Google has also invested in the UK’s tech ecosystem through initiatives such as Google for Startups Accelerator: AI, a 12-week equity-free accelerator program to support Seed to Series A UK startups in scaling their businesses.¹⁴

Prologis

In November 2024, San Francisco-based developer Prologis announced an investment of \$635 million into the expansion of its biomedical hub at the Cambridge Biomedical Campus. The development will provide laboratory and office space to house a range of scaleups and research-led life sciences companies.¹⁵

Where are Bay Area Companies Investing in the UK

Foreign direct investment by Bay Area companies is spread across multiple cities, led by London, Manchester, and Cambridge. London remains the dominant recipient. Manchester, a growing hub for tech, creative industries, and advanced manufacturing, has seen a surge, with nearly \$1 billion in investments from 15 deals between 2014 and 2024. Cambridge has also seen a steady rise, with \$642.7 million in FDI, concentrated in biotech, life sciences, and digital innovation.

SPOTLIGHT

Google DeepMind

Google DeepMind is the product of Google’s acquisition of British AI company DeepMind in 2014¹⁶ and its subsequent merger with Google’s Brain team in 2023.¹⁷ Headquartered in London and with research centers in the United States, Canada,¹⁸ and France,¹⁹ the company serves as Alphabet/Google’s advanced AI research laboratory.

In a highly-publicized competition in 2016, its AlphaGo gaming program became the first computer program to defeat a Go world champion. AlphaGo at the time represented a significant advancement in AI technology through its use of deep neural networks and reinforcement learning.²⁰ WaveNet, a text-to-speech system introduced in 2016,²¹ became the basis of Google Assistant and the company’s generative AI systems in use today. Google’s multimodal large language model Gemini was introduced by Google Deep Mind in 2023.²² Today, Google’s infrastructure runs on Google Brain’s research breakthroughs.²³

Google DeepMind has made other advances in the creation of neural network models and in breakthroughs in protein folding through AlphaFold, a program that accurately predicts 3D models of protein structures. With applications across multiple aspects of biology and health, AlphaFold has predicted 200 million protein structures, and the database it has produced has two million users in 190 countries.²⁴ Deep Mind researchers John Jumper and Demis Hassibis were awarded the Nobel Prize for Chemistry in 2024.²⁵

SPOTLIGHT

Plug and Play

Bay Area accelerator Plug and Play (PnP), which has invested in UK startups from the United States over the last ten years, has dramatically increased the number of its investments together with investment across Europe. PnP Ventures works with startups that it can help to scale, and being on the ground is an advantage. Its model is to partner with major corporations in markets around the world, building programs around key verticals. Plug and Play UK Director Kieran Borrett observes that major UK companies underinvest in startups and scaleups and there are relatively few corporate VCs compared to the rest of Europe; part of Plug and Play's mission is to get large companies in the UK to engage and invest more.

Launched in the UK in June 2022 with an initial focus on transportation and mobility, Plug and Play UK's corporate partners include BT (British Telecom), Bentley, and JLR. Work has begun with Associated British Ports (ABP), the UK's leading ports operator, to help startups scale their businesses in green energy sectors such as hydrogen, offshore floating wind, and low carbon fuels.²⁶ The Energy Ventures Accelerator program will be delivered jointly, with ABP developing centers for industrial decarbonization with specific thematic targets, and PnP connecting those centers with promising startups. Future UK ecosystem verticals for PnP may include energy and infrastructure, health, and insurance and financial services.²⁷

Venture Capital

Bay Area firms are among the top venture investors in the UK. Accelerators and venture firms with an active UK presence include

- 500
- Index Ventures
- Accel
- Sequoia Capital
- Draper Esprit
- Bessemer Venture Partners
- Next Ventures
- Ten Eleven Ventures
- Plug and Play Tech Center

Seminal Bay Area accelerator **Y Combinator**, which accepts large numbers of international companies to its program in San Francisco, is a major investor by deal count in UK startups, with UK companies constituting the largest European presence in its international portfolio. Overall, Y Combinator has supported 162 UK companies, accounting for 41% of the 392 European companies in its portfolio. Ten UK companies participated in the 2024 cohort, accounting for 38% of the European contingent of 26.²⁸ Other leading Bay Area accelerators investing in UK companies include **500** and **Berkeley SkyDeck**. Portfolio companies at SkyDeck, where the UK is a leading source of applications, range from semiconductors (Wave Photonics) to AI (Matta Labs) to personalized medicine (Allos), biotech (Cambridge Nucleomics), and computational fluid dynamics (Vanellus).²⁹

Leading Bay Area venture firms that, like Y Combinator, don't have offices in the UK but actively invest in UK companies include Kleiner Perkins, Greylock Partners, and Andreessen Horowitz. Sometimes there is a specific industry focus. In Andreessen's case, it's financial services and cryptocurrency. The firm considers the UK a "fintech regulatory superpower." As described in a fintech feature story published in 2023, "The UK is home to some of

the largest payments companies and most successful neobanks in the world, Wise, Starling, and Monzo among them. That success has been bolstered by the fact that the UK is among the world's most innovative financial services regulatory environments. Regulation is generally a blocker of innovation. But the UK has used it to foster domestic competition and successfully grow its global presence. If Europe is the world's regulatory superpower, then the UK has quietly become Europe's financial regulatory superpower (even post-Brexit). The UK is the goldilocks of financial services: big enough to be meaningful on a global scale, but small enough to make decisions much faster than the US, or the rest of Europe."

Significantly, the UK was an early adopter of fintech infrastructure and among the first markets in the world to use contactless (tap to pay) cards, has given fintech companies access to accounts with the central bank (in contrast to the US, where only banks are connected), and was the first market in the world to create a regulatory sandbox to support emerging fintech companies.³⁰

Innovation banking—banking services specifically tailored for the startup community—is another area where Bay Area companies play a role. **Silicon Valley Bank**, which had offices in the UK for twenty years before its UK entity was sold to HSBC in 2023, considers the UK a "highly strategic market" and continues to support many UK clients, including founders looking to expand in the US and founders who don't plan to come to the US but are seeking US investment. SVB serves as both a banker and a resource, connecting them with partners, advisors, and investors. Like in the US, the bank has close working relationships with many UK venture firms.³¹

UK Tech in the Bay Area

The United Kingdom is the top foreign investor in California, with more than 1,900 businesses supporting 113,292 jobs. The leading concentrations of investment are in professional and business services, hospitality, and technology. The UK is also the top foreign investor in the Bay Area, with 665 establishments supporting more than 37,000 jobs.¹

Leading UK technology companies with a presence in the region include

- Arm (semiconductors)
- Improbable (virtual worlds and simulations)
- TransferWise (fintech)
- Revolut (fintech)
- Babylon Health (digital health)
- Deep Mind (AI)
- Benevolent AI (drug discovery and applications)
- Graphcore (AI for semiconductors)
- Monzo (fintech)
- Immersive Labs (cybersecurity)
- Cazoo (online car retail)

SPOTLIGHT

Arm

Arm's history dates back forty-five years to the founding in Cambridge of Acorn computers. Arm was launched in 1990 as Advanced RISC Machines Ltd., a joint venture between Acorn Computers and two Bay Area companies, Apple and VLSI Technology. Since then, through licensing, Arm's computing architecture has become ubiquitous, designed into silicon chips that run in everything from mobile devices to cars and data servers. Today, Arm's technology has been embedded in more than 265 billion chips.²

In 1994, Arm established a base in Silicon Valley from which it could expand its licensing, leveraging close proximity to many of the world's leading semiconductor vendors. Its presence also enabled engineering engagement with many of the world's leading software companies to ensure that their software ran optimally on Arm. Since then, Arm has continued to establish itself in key technological hubs worldwide while maintaining a strong and growing presence in Cambridge, which remains the company's largest office and global headquarters. San Jose, with more than 400 employees, serves as the company's US headquarters.³

Supportive Connectors and Infrastructure

HSBC Innovation Banking

British bank HSBC established an innovation banking unit in the Bay Area following its acquisition of Silicon Valley Bank's assets in the UK in 2023. Forty-three US employees were acquired as part of that transaction, and since that time the US employee base has grown to 100. Three months after the acquisition, the bank (which had closed its retail operations in the US in 2021) launched HSBC Innovation Banking, a dedicated platform providing comprehensive banking solutions for technology startups, scaleups, and growth businesses in the US and UK markets, with a focus on lending and venture debt financing.⁴ Sector priorities include climate tech, software, and life sciences, with approximately \$1 billion in venture debt issued to date. While the US and UK branches operate in different markets, they also serve as two-way bridges for entrepreneurs in both countries who are looking to expand globally.⁵

GBx

British entrepreneurs in the Bay Area are supported by GBx, a professional network created in 2017 that brings together British tech executives, investors, and entrepreneurs in the region. The network serves as a platform to build connections in the British tech community, support British tech entrepreneurs looking to establish themselves in the region, and provide a forum for the discussion of emerging issues. Members receive advice on scaling, fundraising, relocating, and coaching on how to pitch.⁶

Imperial Global USA

In November 2024, Imperial College London launched Imperial Global USA—the university's first physical presence in the United States—in San Francisco. The hub's creation also makes Imperial the first UK university to have a permanent science and technology base on US soil. Imperial's goals focus on the development of long-term collaborations with trans-Atlantic business partners, governments, and knowledge organizations.⁷ In anticipation of the hub's launch, Imperial President Professor Hugh Brady observed that "California, particularly the San Francisco Bay Area, is the natural place for Imperial

to develop its US partnerships. It is the centre of tech innovation and global venture capital. Imperial's world-leading STEM [science, technology, engineering, medicine, and business] research capabilities will be greatly enhanced by closer connections with this region, accelerating scientific advances."⁸

In the same week as the hub's launch event, the first Imperial Technology Innovation Impact Award, recognizing outstanding deeptech innovations that have successfully moved from research labs to the Bay Area's commercial market, was awarded at the GREAT GBx Gala, an annual event in San Francisco sponsored by the UK Government's GREAT Campaign and the GBx network to celebrate the best of British technology.⁹

Entrepreneurs First

Founded in the UK in 2011, accelerator and venture capital firm Entrepreneurs First (EF) has established presences in London, New York, Paris, and Bangalore, and launched a new hub in San Francisco in early 2024. Greylock partner Reid Hoffman is an investor and serves on the board. Since the convening of EF's first San Francisco startup Demo Day in April 2024, all startups it supports are required to relocate to San Francisco for the second half of their program, which leads up to making their pitch to investors and launching via the Demo Day platform.¹⁰ Co-founder and CEO Alice Bentinck describes the reason for the San Francisco shift: "It's a city that only talks about tech. We're still very bullish on the UK and Europe; it has some of the world's best talent—and they have an increasing inclination to found. But, ultimately for our customers... the Bay Area still does have a degree of magic that's hard to replicate elsewhere."¹¹

London and Partners

In its investment promotion role representing London in the Bay Area, London & Partners facilitates startup connections through its Grow London global program.¹²

British-American Business Council

As part of a 20-chapter transatlantic business network, the British-American Business Council in Northern California also facilitates tech and startup connections.¹³

The Startup Bridge: Early-Stage Companies in the UK and Silicon Valley

“The challenge is that to win a business category, you need to win the US market, which is tough to do without the founders being there.”
—Alastair Paterson, CEO, Harmonic Security

Interviews with UK startup founders that are operating in the region, as well as American entrepreneurs that are in the UK, confirm both the UK’s depth of talent and the central importance of Silicon Valley and the US market.

SPOTLIGHT

Modern Synthesis

Modern Synthesis is a London-based biotech company developing a new class of microbially-derived biomaterials for fashion, footwear, and other uses. Co-founded in 2019 by Californian and Cornell graduate Jen Keane and Imperial College London’s Ben Reeve, the company uses material science to transform bacterial nanocellulose—a natural byproduct of fermentation—into a new class of responsible textiles and coatings. With CEO Keane’s background in design and material innovation for Adidas and CTO Reeve’s expertise in bioengineering, Modern Synthesis aims to reduce the fashion industry’s dependence on petrochemical-based products by offering high-quality, lower-impact alternatives to animal leathers and plastic-based textiles. It aims at the same time to open new doors for designers seeking new material forms and functions.

Modern Synthesis received two Innovate UK grants (2020 and 2021) and has subsequently attracted seed investment from over fifteen investors. Initial venture investment came from Boston, followed by investment from firms and private investors in New York, Seattle, Los Angeles, London, Germany, and Silicon Valley, including the Bay Area’s Climate Capital, IMO Ventures, and AgFunder. In late 2024, climate-focused investor Extantia and Australian firm Artesian joined the investor group. Manufacturing and R&D are conducted at the company’s pilot facility in London, and Keane frequently travels between London and Silicon Valley for meetings with investors and advisors.

Asked about the tie to Silicon Valley and the UK’s strengths as a business environment, Keane cites the UK’s lower costs compared to Silicon Valley and a deep pool of engineering talent. She also notes the UK’s rich textile manufacturing heritage, world-leading fashion and design sector (including events such as London Fashion Week), and leadership in advanced materials and biotechnology innovation. Keane observes that “The UK offers a unique combination of cost-effectiveness, highly skilled scientists and engineers, and a thriving fashion ecosystem, making it an ideal location for our work. Our strong connection with Silicon Valley has been pivotal in deepening relationships with tech and climate-focused investors who share our values, setting us up for sustainable growth.”¹⁴

SPOTLIGHT

Pathfinder

While a student in engineering at Imperial College London, Pathfinder Co-founder and CEO Amaan Ahmad developed a focus on education. That led to a summer boot camp for 16- to 22-year-olds to test the proposition that new skills could be taught virtually. When the experiment worked, he reached out to people in the wider education community, many of whom were in San Francisco, so he flew from London to San Francisco to gauge interest in the model. In January 2024, he returned to the Bay Area through Entrepreneurs First. Initial funding came from Entrepreneurs First and first-round funding from angel investors, a Bay Area VC, and a UK/EU VC. Being in the Bay Area was an advantage. As he describes it, “raising funds in San Francisco is way faster than in Europe.” The company’s business model, which he terms “alternative education,” solves for the problem that teachers often use 60–70 hours each month to curate teaching experiences for students. Pathfinder’s solution is to use AI to speed and simplify the process by developing a personal learning AI for every student.

Alternative education is less accepted in Britain, which was another reason to come to the US. Policies and cultural movements in the US, Ahmad

notes, have made it a much more innovation-seeking environment. Pathfinder's product is already being used in US schools, and the company plans to scale further with a new funding round in 2025. Ahmad observes that "the culture and environment here are energizing. People are enthusiastic about what they're doing, and everyone wants to work on something ambitious. They're more ambitious and readily make introductions. The UK is a great source of talent, but people there are more reserved. And from a general talent perspective, there is far higher compensation for working in the US market."¹⁵

SPOTLIGHT

Pangaea Data

Dr. Vibhor Gupta, Pangaea's co-founder, came to the Bay Area in September 2024 from London, where the company was founded in January 2018. A wholly-owned subsidiary of its UK parent, Pangaea Data is incorporated in Delaware and 100% of its revenues are from the US market. Staffed by clinicians, scientists, and engineers, Pangaea offers an AI software product that helps clinicians identify untreated and undertreated patients at the point of care. Gupta explains that in spite of the substantial information available in patients' medical records, many go undiagnosed or undertreated when that information is missed. This is due to the limited time available to clinicians to research and connect those records. By allowing clinicians to access key intelligence without having to spend 40–50 minutes per record to research the history, Pangaea's product is designed to improve outcomes and reduce costs. To date, Gupta and Pangaea co-founder Professor Yike Guo have raised \$300 million in funding through their academic research.¹⁶

Commenting on the London-Bay Area connection, Gupta points out that the UK has a very strong talent base. The advantage the US brings is a large-scale market and a business culture that supports innovation: "People in the US are prepared to be first adopters and aren't afraid to fail." He points to the reduction in tax relief for entrepreneurs, visa barriers, and the time it takes to scale in the UK as other factors that can push companies towards the US. He sees, however, huge potential in the UK's talent pool: "The talent and

science base in the UK is phenomenal. The challenge in the UK for companies like us is scalability at speed, which is best provided by founders being physically present in the US."¹⁷

SPOTLIGHT

Solaris Suborbital

Solaris, an Earth intelligence company, has developed a suborbital observation capacity utilizing solar gliders that can be launched without a rocket to fixed positions 20 km above their targets (compared to Low Earth Orbit satellites that orbit at 400 km and geostationary satellites that orbit at 36,000 km). Solar power enables the gliders to circle continuously for up to two months, station-keeping in a tight radius of 500 meters. This capacity enables them, at low cost, to hold positions for long periods, providing continuous observation, as compared to satellites that take snapshots while flying by. Other advantages are that sensors don't have to be hardened for space, and real-time movement is more easily detected than at higher altitudes. Three key verticals the company addresses are climate (wildfire detection, where a fire less than a meter across can be detected and the fuel load measured within ten minutes of ignition), mapping, and dual-use security-defense applications (e.g., monitoring conflicts and borders).

The company, incorporated in the United States and now headquartered in San Francisco, was launched in the UK by co-founders Daniel Doulton and Andy Elson. The technology for the solar glider was first developed in the UK by Elson, with Solaris being a third-generation platform that has built on the success of first- and second-generation platforms oriented toward defense, designed by Elson and his team and now operated by Airbus and BAE.¹⁸ As CEO, Doulton resides in the Bay Area and manages marketing, fundraising, and commercial development, while his partner is based in the UK along with the company's senior design staff, who build and test prototypes. A third arm of Solaris is based in Spain, where aerial operations (launch, building, and testing) are handled. Asked about the division of labor, Doulton explains that there's good engineering talent in the UK, and Spain has a cost advantage for operations. As for the Bay Area, "This is where the VC money is, where the most

likely exit is, and where the AI talent is. Far more than in Europe, its ecosystem knows how to manage and invest in risk.”¹⁹

SPOTLIGHT

Vaire Computing

Vaire Co-Founder and CEO Rodolfo Rosini has spent 22 years in the UK, during which he founded several deeptech companies. Convinced that AI would be a transformative technology that would hugely expand the need for processing power, Rosini and Vaire co-founder Hannah Earley, a reversible computing researcher from the University of Cambridge, assembled a team of experts in the previously under-researched reversible computing semiconductor architecture field that included a founding engineer from Arm. Vaire’s goal is to design a chip that consumes low levels of energy and produces little waste heat, therefore requiring less cooling. Both are major challenges in meeting new AI data centers’ voracious demand for processing power.²⁰ The chip is undergoing testing, with a commercial release planned for 2027.

The company currently has four sites: London, Bellevue (Washington), Cambridge, and Sunnyvale. Rosini says that over time the company’s activity will be concentrated in just two sites, Sunnyvale and London, the largest being in Sunnyvale. All of the company’s customers are currently in the US. Asked about issues that might influence decisions on where to grow, Rosini points first to the cost of housing, which is high in the Bay Area but also in Cambridge and Southeast England. As it scales up, the company could later expand to Austin due to better housing availability.

Asked about the UK, Rosini also points to non-compete clauses in employment contracts. The 90-day waiting period before an employee can move to a competitor contrasts with Silicon Valley where non-compete clauses are prohibited and employees can move the same day. That was another reason to come to California: “We move so fast. We may need a person now in order to build a team and can’t risk waiting three months and then lose them. US employees may be twice the cost, but it’s worth it when we need to move quickly.” Visas are another issue in the UK: “We

want to hire from everywhere, and visas post-Brexit are a barrier. The UK doesn’t have enough workers, and restricted access to a labor pool of 500 million is a disaster. If we can’t hire the way we need to in the UK, we’ll move our operations somewhere else.”

The Sunnyvale facility will focus on reversible computing semiconductor design and commercial operations. As Rosini explains: “Everyone is in Silicon Valley, and everything is concentrated here. It’s easier to meet big companies in this place. The flow of innovation is from Silicon Valley to everywhere else, including Europe. The problem in the Valley (due to cost) is scaling, which is why we’d consider a facility in Austin.” Vaire’s Sunnyvale office opened in 2023 and is expected to grow to 100 employees in 2025.²¹

SPOTLIGHT

Harmonic Security

Alastair Paterson, Harmonic Security’s CEO & Co-Founder, worked for seven years in the UK for Detica, a data analytics company that was acquired by BAE. Not wanting to work for a large company, in 2011 he launched Digital Shadows, which became a significant cyber threat intelligence company using novel techniques to detect leaked enterprise data on the internet.²² Seed funding came in 2013 from London-based Passion Capital, followed by a Series A round in 2015 in Silicon Valley, at which point he moved the company to San Francisco (while keeping engineering in the UK). Digital Data later scaled to Series B and C before it was acquired, after which Paterson founded Harmonic.

Harmonic particularly focuses on addressing the risk of company data leakage associated with generative AI. Paterson believes that traditional rules-based data loss prevention systems aren’t good enough in the generative AI era and is building a suite of modern language models that understand the context of data in real time²³ to address issues such as the unauthorized use of data by shadow AI apps, monitoring SaaS providers using other companies’ data, and preventing the leakage of IP and source code. The company did an \$8.5 million seed round and an \$18 million Series A in October 2024, counting In-Q-Tel among its investors.

Harmonic is a US-headquartered company and its CEO is in Silicon Valley, but its engineering is done in the UK and the company's CTO is based there. Asked about the split, Paterson says, "You have to be here—it's the biggest market and people who 'get it' usually end up in the Valley. But it's also expensive. The UK, on the other hand, has phenomenal people, and you can build a world-class team there." Paterson points to a depth of talent in cybersecurity not just in London but in cities across the UK such as Bristol, Cambridge, and Cheltenham.

The benefit of Silicon Valley, he says is "the network and having your finger on the pulse of the market. You're surrounded by innovative companies and can test your business proposition and learn from others who have done it before. You can't exactly replicate that in the UK, but as more founders exit there and become angels and advisors, the ecosystem will naturally improve."²⁴

SPOTLIGHT

Impossible Metals

Oliver Gunasekara, Co-founder and CEO of Impossible Metals, spent much of his career in the semiconductor industry, having joined Arm in 1994 when it was a startup in the UK. He moved to the Bay Area to lead corporate development for Arm in 2005, where he championed the acquisition of Falanx, whose technology went on to become the world's number one shipping GPU. His next endeavor was the 2012 founding of NGCodec, a startup focused on next-generation cloud video acceleration, which was acquired by Xilinx data center group in 2019, giving his investors a 5x return.²⁵ The idea to found Impossible Metals came to him during the pandemic, when catastrophic wildfires turned his attention to the field of climate tech. His research led him to the conclusion that batteries are the most important technology

needed for a clean energy future, and batteries need huge quantities of critical metals.²⁶

Most of the world's critical minerals—with an estimated value of \$20 trillion—are in deep water on the ocean floor. Impossible Metals builds autonomous underwater vehicles (AUVs) that use robotic technology to sustainably harvest those materials. Where conventional harvesting techniques dredge the sea bottom to rake up metal-rich rocks called nodules and may use powerful water jets to dislodge nodules from seafloor sediment,²⁷ the company's Eureka AUV system uses robotic arms to pick up nodules individually, a process that is less disruptive to the environment and where AI-driven computer vision also helps the robot avoid damage to sea life. The company has successfully tested its Eureka II AUV model in deep water and is planning a 2025 test of its production-sized Eureka III system,²⁸ which is capable of collecting 4 metric tons every 3 hours.²⁹

Being in Silicon Valley brought the company a lot of exposure, particularly to robotics. It has completed a seed round and looks ahead to a Series A round. A graduate of Y Combinator, Gunasekara says, "There's no better ecosystem for startups than Silicon Valley. The access to capital is unparalleled and there's depth in both talent and mentors. The UK has great universities and great talent, but less access to risk capital."

Reflecting on angel investors he adds, "The Valley stands out for its capacity for "recycling," where as people succeed, they become angels. Access to early-stage risk capital is important—people who can write \$50–100K checks. There's not a lot of liquidity in the UK, but that's where Silicon Valley excels. You want the perfect angel to have both cash and experience. There are investors and mentors here who were in the same place as you were ten years earlier."³⁰

Where Next?

The UK-United States technology and investment relationship offers a distinct foundation for future growth.

Atlantic Declaration

At the national level, the Atlantic Declaration, signed by the United States and UK governments in June 2023, foresees a twenty-first century US-UK Economic Partnership that will build on the US-UK alliance relationship but in the economic sphere. As a first step, five pillars have been identified, each to be supported by coordinated actions:

- ensuring US-UK leadership in critical and emerging technologies,
- advancing cooperation on economic security and technology protection through toolkits and supply chains,
- partnering on an inclusive and responsible digital transformation,
- building a clean energy economy of the future, and
- strengthening the US-UK alliance across defense, health security, and space.

Key areas of focus include collaborating on R&D, deepening public-private dialogue across priority technologies, jointly mobilizing private capital toward strategic technologies, and improving reciprocal talent flows. Priority technologies include quantum, cutting-edge telecom, synthetic biology, semiconductors, and AI, with both sides agreeing to create a US-UK Strategic Technologies Investor Council.¹

US-UK government alignment can provide a platform to leverage public and private resources to advance shared goals.

Challenges and Change in the UK

Notwithstanding its competitive strength in Europe and global standing, the UK's innovation ecosystem faces challenges.

Talent

One UK challenge has to do with talent. While not facing a major talent shortage, the pipeline of talent from Europe is more restricted due to Brexit. Visa requirements involve cost and delay, a challenge for young companies with limited resources that are looking to grow quickly and acquire talent from wherever it's available. This is leading some companies to hire or expand elsewhere, and some European companies that are expanding globally to skip the UK and go directly to the US. A focus on talent mobility and an improved process to make high-skilled visas cheaper and easier to obtain could address this issue.

Late-Stage Funding and Capital Markets

As in other countries, ample seed and early-stage funding capital is available in the UK, but access to later-stage funding is constrained, making it difficult for emerging companies to scale. For the youngest

companies, more use could be made of the Enterprise Investment Scheme (EIS) and Seed Enterprise Investment Scheme (SEIS), generous incentive programs that are underutilized; but even with these schemes, the challenge posed by growth capital and public markets will remain. Because government funding can't fill this gap, a deeper mobilization of capital is needed.

A related challenge is the relative weakness of London's stock exchanges as vehicles for IPOs. Despite London being a global financial center, the London Stock Exchange (LSE) underperforms as a source of capital for Britain's technology sector. Since it lacks an orientation toward startups, few technology companies go public there. The LSE trails Euronext Amsterdam, XETRA Trading Platform (Germany), and Euronext Paris in its tech share of total market cap, ranking #4 in Europe and #13 globally in 2024. Its Alternative Investment Market (AIM), which was created in 1995 to support smaller, higher-risk companies, ranks only #9 in Europe and #28 globally.² Lack of investment by institutional investors such as pension funds and insurance companies—due largely to regulatory issues—is a factor. Financing in the UK's technology sector would benefit from their deeper engagement. A 2023 policy initiative (Mansion House 2023) aimed to address the lack of technology investment by pension funds through an industry-led compact committing many of the UK's largest defined contribution pension providers to direct 5% of their default funds to unlisted equities by 2030.³

All European exchanges fall far behind the Nasdaq as vehicles for raising funds, due to its greater market depth, scale, and higher trading volumes in the US. Since 2015, 17% of European technology companies with \$1B+ valuations have listed in the US, the most prominent being Arm.⁴

Scientific Research

It is estimated that 2021 R&D spending in the UK as a percentage of GDP was 2.9%, which was above the OECD and EU averages,⁵ but lower than in other leading economies such as Israel, the United States, Belgium, Japan, and Germany.⁶ The two-year post-Brexit loss of funding for scientific research under the EU's Horizon program,⁷ which substantially benefited UK researchers, also undercut investment in science.

In September 2023 the UK rejoined Horizon, making British researchers once again eligible to apply for EU grants.⁸ While that will benefit the UK's science community, increased national investment in scientific research is needed to strengthen the country's technology innovation base across key industries.

The UK's launch in 2023 of the Advanced Research and Innovation Agency (ARIA), an independent government-funded research organization led by Ilan Gur, former founder of the Cyclotron Road entrepreneurship program at Lawrence Berkeley National Laboratory,⁹ represents a significant investment in science innovation. ARIA's program, funded with \$1 billion (£800 million) over four years,¹⁰ focuses on advanced research that is "too hard, too speculative, or too interdisciplinary to pursue elsewhere." Its strategy addresses breakthrough technologies considered important to UK society, with teams supporting multi-year programs designed to address complex, large-scale challenges.

Inspired by the United States' Defense Advanced Research Projects Agency (DARPA), project funding ranges from £50–80 million, with seed support of up to £500 thousand available for smaller research teams with stand-alone projects. Current research fields range from applied electrochemistry to synthetic plant physiology, artificial intelligence, and neuroscience. Google DeepMind is one of several external partners that collaborate with ARIA to magnify the impact of its research.¹¹

Health Care

The UK's National Health Service (NHS) has one of the largest health care databases in the world, which can provide a valuable platform for innovation and technology deployment. The system, however, is fragmented in how it is organized, used, and focused, with a central focus on cost but little on innovation. More could be done to develop its potential as a medium for commercial technology deployment.¹²

Tax, Fiscal, and Regulatory Policy

With the UK's change of government in 2024, UK startups and their investors face greater policy uncertainty. As the new government addresses budgetary challenges, its funding for technology

initiatives appears less certain. An announcement in August 2024 that £1.3 billion committed by the previous government to tech and AI projects would be shelved has raised particular concern.¹³ Tax policy as outlined in the UK budget presented in the Fall of 2024—which increases the tax rate on carried interest capital gains by approximately 6%,¹⁴ increases tax rates on the first £1 million in exit earnings,¹⁵ and increases required employer contributions to National Insurance¹⁶—is also being watched closely. Founders and investors will also follow how the government steers the UK’s Competition and Markets Authority (CMA), which some in Silicon Valley see as too restrictively regulating M&A.

The new government has nonetheless signaled its intention to invest in the UK’s startup ecosystem. A 2022 report, *Start-Up, Scale-Up*, produced by the Labour Party while in opposition, outlined a range of goals and ideas for the startup ecosystem with the goal of making the UK “the best place to start and grow a business.” Its recommendations included unlocking institutional investment, including co-investment from institutional investors (such as pension funds) with the British Business Bank; amplifying the work of the British Business Bank, including the fostering of clusters around groups of universities across the UK; working with universities to create dashboards documenting support for startups, and encouraging universities to offer a range of options to founders including one where the university keeps a small stake of equity; creating a Procurement Council of Experts to make public procurement more accessible for startups; and maintaining and building on existing schemes such as the SEIS, EIS, and R&D tax credit.¹⁷ Investors and stakeholders in the startup ecosystem system will closely follow how the government reconciles these supportive proposals with its commitment to tighter budgets.

AI

In August 2024, the new Labour government announced its intention to develop an AI Opportunities Action Plan, a roadmap to leverage AI to enhance economic growth. Led by the Secretary of State for Science, Innovation

and Technology, the process aims to support an artificial intelligence sector that can scale and compete globally, can enhance productivity and support the delivery of government missions and services, and can strengthen enablers of AI adoption such as data, infrastructure, and policy and regulatory reform.¹⁸ Development of the Plan offers the UK an opportunity to leverage its strength in research to support accelerated adoption and innovation across a range of industries. University-industry partnerships to facilitate technology transfer and startup activity and support to help smaller and medium-sized businesses accelerate AI adoption will be important.

From a regulatory standpoint, the UK also has an opportunity to differentiate itself from the regulation-forward approach embodied in the EU’s AI Act, through a strategy that minimizes compliance burdens and incentivizes business investment, growth, and scaling.

Prime Minister Keir Starmer added further detail to the government’s direction in January 2025 with a comprehensive blueprint to implement the AI Opportunities Action Plan. Initiatives include dedicated “AI Growth Zones” across the country, designed to streamline planning processes and enhance data center access to power grids. The first AI Growth Zone will be in Culham, Oxfordshire (also home to the UK’s Atomic Energy Authority). The initiative also includes plans for a new supercomputer (part of a goal to increase compute capacity twenty-fold by 2030), a National Data Library to facilitate AI development through public data access, and an AI Energy Council to work with energy companies to understand the demand that will fuel the industry’s growth and support clean energy development. The plan is attracting private sector interest, with three companies—Vantage Data Centers, Nscale, and Kyndryl—pledging to invest £14 billion over three years to strengthen the country’s data center infrastructure. Of that, Vantage Data Centers plans to invest over £12 billion in data centers across the UK, including one of Europe’s largest data center campuses in Wales.¹⁹ Starmer also indicated that “the UK will go its own way on AI regulation.”²⁰



The UK-Silicon Valley Opportunity

The UK's startup and innovation system benefits from extraordinarily close ties with US markets and investors. History and business culture connect them. The exceptional depth of talent in the UK and strengths in an array of fields from life sciences to hard tech, AI, and quantum computing offer a rich environment for research and investment, while the US offers growth capital and a market in which to expand.

R&D offers further opportunities to align resources, one example being in the field of synthetic biology (the process of engineering DNA and biological cells to achieve specific outcomes), where the Bay Area is a global leader and has strong academic ties with the UK's biotech research ecosystem. The SynBioBeta Global Synthetic Biology Conference held in San Jose every year is a meeting ground for the nascent synthetic biology industry and its cross-Atlantic collaborators.¹

The depth of talent in the UK complements the size and depth of the market offered by the US. Many investors and growth companies have crossed that bridge in both directions, but there is room for further growth. Silicon Valley plays a major role in the relationship, with Bay Area VCs serving as large investors or co-investors in emerging UK companies. Many of those companies make the Bay Area and the US their destination of choice for overseas expansion.

Brennan O'Donnell, a Partner at Frontline Ventures (which invests in both US companies going to Europe and European companies coming to the US) encourages

his portfolio companies to come to the US early: "It's the largest market in the world. Location decisions should always be driven by where your customers are and where the best talent is (more than cost or tax). This is particularly true if you have global ambitions—it's where the benchmark is set." O'Donnell also says that US startups expanding globally must first succeed in Europe: "It represents over 30% of global revenue for public companies, and the UK is usually the largest contributor with the least amount of business friction."²

Other companies tell a similar story. London-based, Nvidia-backed AI voice assistant company PolyAI CEO Nikola Mrkšić says, "Our future is predominantly American, just because of the market, but I think a strength of London is that, in Britain as a whole, it's always been the natural conduit between continental Europe and America. And I think we should lean into that."³

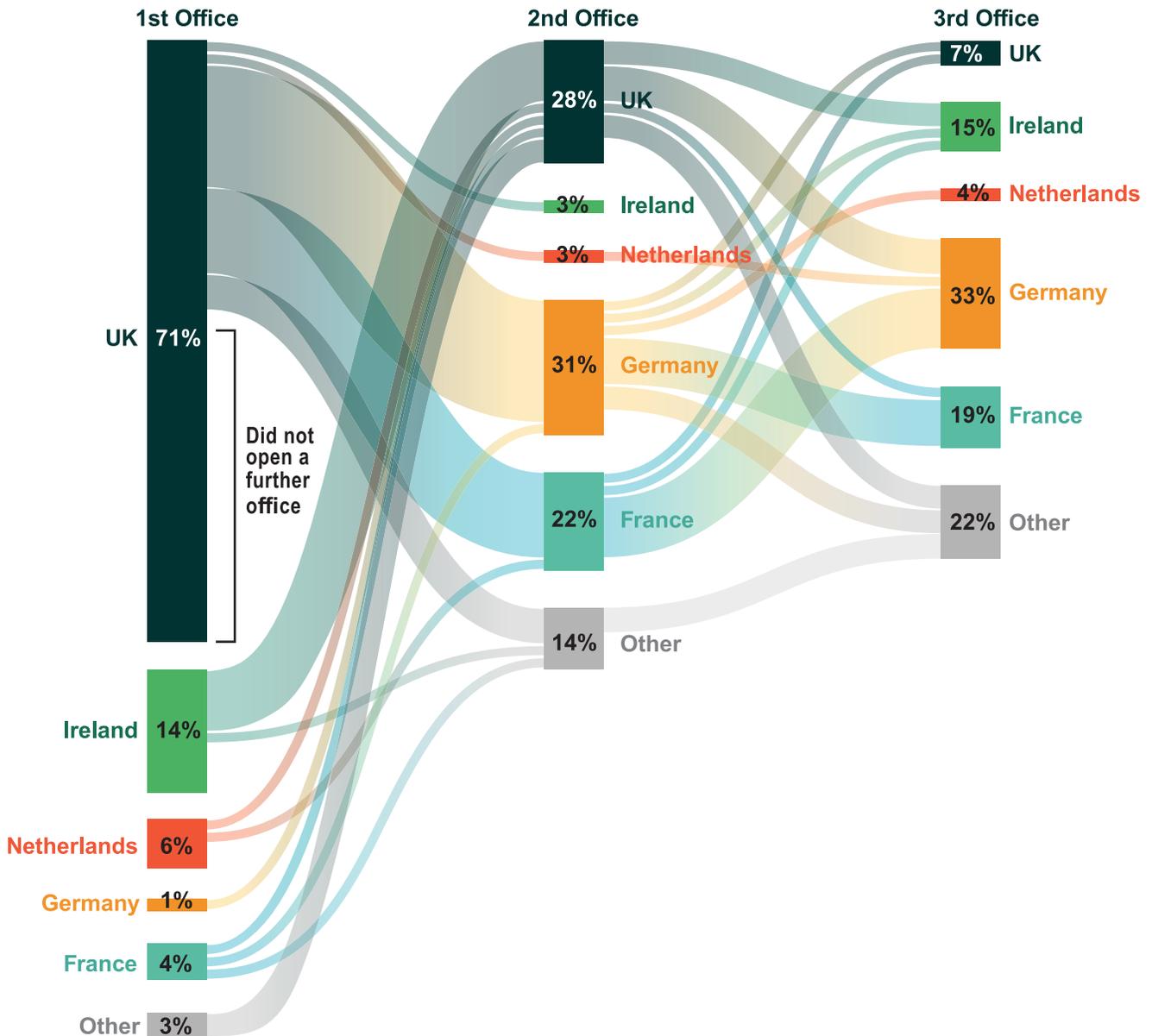
US scaleups expanding in Europe most often focus on engineering and/or sales, with a focus on engineering investment at the early stages (Seed, Series A, and particularly Series B and Series C), and sales becoming a priority only later (Series C and D) when companies and their products are more established. For both engineering and sales-driven expansion, a recent survey by Frontline Ventures points to the UK being the easiest European market to enter due to business culture and the ability to sell in English. When US scaleups are expanding into Europe, the UK is typically their first choice as a base of operations for both engineering and sales.⁴

Similarly, Adam Cragg, a partner at Osney Capital (the UK's only early-stage venture firm to exclusively focus on cybersecurity) sees the US as the first overseas market for his companies outside the UK: "100% of our UK businesses want to be in the US market." The road goes in both directions, and he sees a similar

opportunity for US cyber companies who are expanding globally—if not to move to the UK, then to establish a significant presence.⁵ Affinity in language and culture means that Britain poses fewer barriers than most locations on the continent for US companies looking for European expansion.

EXHIBIT 30

Sequencing Expansion into Subsequent Markets: First, Second, and Third Office Locations, 2013–2022



Infographic Source: Frontline Ventures analysis of 210 B2B expansions into Europe (2013–2022), The European Expansion Report

Notes

CHAPTER 1

An Evolving European Technology Landscape

- 1 Atomico, "State of European Tech 23," November 2023, <https://www.investeurope.eu/media/7424/atomico-state-of-european-tech-report-2023.pdf>
- 2 Dealroom.co, "Europe Tech Update Q2 2024," July 2024, <https://dealroom.co/uploaded/2024/07/Dealroom-Europe-Q2-2024-VC-Report.pdf>
- 3 Dealroom.co, "Europe," [Deep Dives guide], Q4, 2024, <https://dealroom.co/guides/europe>
- 4 Atomico, "State of European Tech 24: 10th Anniversary Edition," November 2024, https://www.investeurope.eu/media/g3yobbcs/soet2024_report.pdf
- 5 GP Bullhound, "Titans of Tech: Unrivaled era of A.I. led innovation for European Tech," May 2024, <https://www.gpbullhound.com/articles/titans-of-tech-2024/>
- 6 Eivind Friis Hamre and William Wright, "Brexit and the City: The Impact So Far," New Financial, April 2021, <https://media2-col.corriereobjects.it/pdf/2024/dataroom/DOC%2005%20-%20NewFinancial%202021.pdf>
- 7 Atomico, "State of European Tech 2023," November 2023, <https://www.investeurope.eu/media/7424/atomico-state-of-european-tech-report-2023.pdf>
- 8 Atomico, "State of European Tech 24: 10th Anniversary Edition," November 2024, https://www.investeurope.eu/media/g3yobbcs/soet2024_report.pdf
- 9 Atomico, "State of European Tech 24: 10th Anniversary Edition," November 2024, https://www.investeurope.eu/media/g3yobbcs/soet2024_report.pdf
- 10 Alex Hamilton, "European Tech in 2023," Dealroom.co, December 29, 2023, <https://dealroom.co/blog/european-tech-in-2023>
- 11 Atomico, "State of European Tech 24: 10th Anniversary Edition," November 2024, https://www.investeurope.eu/media/g3yobbcs/soet2024_report.pdf
- 12 Mind the Bridge, "Innovation or Isolation: The Future of Regional Ecosystems; Startup Ecosystem Stars Report 2024." December 2024, <https://storage.googleapis.com/mtb-research.appspot.com/publications/2024-policy-innovation-or-isolation/MTB-2024-policy-innovation-or-isolation-report.pdf>
- 13 Atomico, "State of European Tech 2023," November 2023, <https://www.investeurope.eu/media/7424/atomico-state-of-european-tech-report-2023.pdf>
- 14 Dealroom.co, "Europe Tech Update: Q2 2024," July 2024, <https://dealroom.co/uploaded/2024/07/Dealroom-Europe-Q2-2024-VC-Report.pdf>
- 15 Simon Bumfrey, "The UK innovation economy: Echoing the London landscape," HSBC Innovation Bank, July 21, 2024, <https://www.hsbcinnovationbanking.com/en-gb/insights/innovation-transformation/the-uk-innovation-economy-echoing-the-london-landscape>
- 16 Rebecca Uffindell, "UK ranked third most valuable tech sector in the world," Techerati, October 4, 2023, <https://www.techerati.com/news-hub/uk-ranked-third-most-valuable-tech-sector-in-the-world/>
- 17 Tech Nation, "UK Tech in the Age of AI: The Tech Nation Report 2024," July 2024, https://live.ff.co/l/800123/2024-07-08/3614gp/800123/1720429350818Y8tzt/The_Tech_Nation_Report_2024__UK_Tech_in_the_Age_of_AI.pdf
- 18 DEEP Ecosystems and European Startup Initiative, "Startup Heatmap Europe 2025: Top Entrepreneurial Hubs in Europe; A Data-Driven Look at Startup Ecosystems," April 1, 2025, <https://pub.marq.com/268897e7-8d94-45e1-ba7f-9d1a02c93e3c/#2d7255Y00Ddk>
- 19 Tamare Djurickovic, "24 European tech companies that raised the most in 2024," January 9, 2025, <https://tech.eu/2025/01/09/24-european-tech-companies-that-raised-the-most-in-2024/>
- 20 Dealroom.co & HSBC Innovation Banking, "UK Innovation Update: Q2 2024," July 2024, <https://dealroom.co/uploaded/2024/07/Dealroom-x-HSBC-Innovation-Banking-UK-Q2-2024-report.pdf>
- 21 Tech Nation, "UK Tech in the Age of AI: The Tech Nation Report 2024," July 2024, https://angelcapital.scot/wp-content/uploads/2024/08/The_Tech_Nation_Report_2024__UK_Tech_in_the_Age_of_AI.pdf
- 22 Atomico, "State of European Tech 24: 10th Anniversary Edition," November 2024, https://www.investeurope.eu/media/g3yobbcs/soet2024_report.pdf
- 23 Tech Nation, "UK Tech in the Age of AI: The Tech Nation Report 2024," July 2024, https://angelcapital.scot/wp-content/uploads/2024/08/The_Tech_Nation_Report_2024__UK_Tech_in_the_Age_of_AI.pdf
- 24 John Reynolds, "UK capital of European Fintech, despite four-year investment low," Tech.eu, February 18, 2025, <https://tech.eu/2025/02/18/uk-capital-of-european-fintech-despite-four-year-low/>

CHAPTER 2

Measuring Tech and Startup Competitiveness

- 1 StartupBlink, "Global Startup Ecosystem Index 2024," May 30, 2024, <https://colcapital.org/wp-content/uploads/2024/07/VC-Startup-Blink-Ecosystem-report-2024.pdf>
- 2 fDI Intelligence, "European Cities and Regions of the Future 2025: The standout investment destinations of the year," February 13, 2025, <https://www.fdiintelligence.com/content/rankings-and-awards/european-cities-and-regions-of-the-future-2025-84523>
- 3 fDi Intelligence, "European Regions and Cities of the Future 2025: The Best and Brightest Among Europe's Investment Destinations," February/March 2025, https://www.fdiintelligence.com/content/download/84642/2907615/file/FDIECRF_0225.pdf
- 4 WIPO (World Intellectual Property Organization), "Global Innovation Index 2024: Unlocking the Promise of Social Entrepreneurship," 17th Edition, 2024, https://www.wipo.int/web-publications/global-innovation-index-2024/assets/67729/2000%20Global%20Innovation%20Index%202024_WEB3lite.pdf

- 5 Rob Joyce, "Foreign Direct Investment: UK's project total grows as Europe's falls," EY press release, July 11, 2024, https://www.ey.com/en_uk/newsroom/2024/07/foreign-direct-investment-in-uk-grows-as-europe-declines
- 6 Tony Blair Institute for Global Change, "Three Years On, Brexit Casts a Long Shadow Over the UK Economy," February 3, 2023, <https://institute.global/insights/geopolitics-and-security/three-years-brexit-casts-long-shadow-over-uk-economy>
- 7 Rob Joyce, "Foreign Direct Investment: UK's project total grows as Europe's falls," EY press release, July 11, 2024, https://www.ey.com/en_uk/newsroom/2024/07/foreign-direct-investment-in-uk-grows-as-europe-declines
- 8 Tech Nation, "UK Tech in the Age of AI: The Tech Nation Report 2024," July 2024, https://live.ff.co/l/800123/2024-07-08/3614gp/800123/1720429350818Y8tzzr/The_Tech_Nation_Report_2024__UK_Tech_in_the_Age_of_AI.pdf
- 9 Dealroom.co, "United Kingdom" [guide], 2024 Q4, <https://dealroom.co/guides/united-kingdom>
- 10 Farzana Haque, "Mapping the UK's VC and PE Funds," Beauhurst, April 23, 2023, <https://www.beauhurst.com/blog/where-are-the-uks-vcs-located-and-where-are-they-investing/>
- 11 Gilion, "Venture Capital Firms and Investors in the United Kingdom," September 18, 2024, <https://vc-mapping.gilion.com/venture-capital-firms/united-kingdom>
- 12 Beauhurst and Parkwalk, "Equity investment into spinouts," September 2024, <https://www.beauhurst.com/wp-content/uploads/2024/09/Beauhurst-Equity-Investment-into-Spinouts-2024-.pdf>
- 13 BCG and Nordic Angels, "State of European Angel Investing in 2024," November 2024, <https://web-assets.bcg.com/8b/7a/ef219bc54e97b761d3fccde345ff/state-of-european-angel-investing-2024.pdf>
- 14 Leah Hodgson, "VC Map: UK's VC market falling back to pre-pandemic levels," PitchBook, October 2, 2024, <https://pitchbook.com/news/articles/vc-map-uks-vc-market-set-to-return-to-pre-pandemic-levels>
- 15 Beauhurst and Parkwalk, "Equity investment into spinouts," September 2024, <https://www.beauhurst.com/wp-content/uploads/2024/09/Beauhurst-Equity-Investment-into-Spinouts-2024-.pdf>
- 16 U.S. News and World Report, "Best Global Universities in the United Kingdom," 2024–202, <https://www.usnews.com/education/best-global-universities/united-kingdom>
- 17 Northern Gritstone, "About Us: The partner of choice," 2023, <https://www.northern-gritstone.com/about>
- 18 Midlands Mindforge, "Midlands universities establish investment company to boost UK 'superpower' status," [press release, n.d.], <https://midlandsmindforge.com/midlands-universities-establish-investment-company-to-boost-uk-superpower-status/>
- 19 Dealroom.co and HSBC Innovation Banking, "UK Innovation Update Q2 2024," July 2024, <https://dealroom.co/uploaded/2024/07/Dealroom-x-HSBC-Innovation-Banking-UK-Q2-2024-report.pdf>
- 20 Waterloo EDC, "% Charts: University of Waterloo vs. London's Top Tech Schools," April 8, 2024, <https://www.waterlooeedc.ca/blog/five-charts-uwaterloo-vs-london-tech>
- 21 Collider, <https://www.collider.io>
- 22 Global Tech Advocates Launchpad, <https://globaltechadvocates.org/launch-pad/>
- 23 SAGE, "Top 25 Startup Incubators & Accelerators in the UK," November 11, 2024, <https://www.sagemarketing.io/blog/top-25-startup-incubators-accelerators-in-the-uk/>
- 24 Entrepreneur First London, <https://www.joinef.com>
- 25 London Business School, "Incubator programme," <https://www.london.edu/faculty-and-research/institute-of-entrepreneurship-and-private-capital/opportunities-and-resources/scale/incubator-programme>
- 26 Patrick Scanlon, "Silicon Roundabout is still the spiritual home of London tech 15 years on," The Standard, May 2, 2024, <https://www.standard.co.uk/business/silicon-roundabout-spiritual-home-london-tech-shoreditch-old-street-b1155318.html>
- 27 Bristol Robotics Laboratory, "About Us," <https://www.bristolroboticslab.com/about-us>
- 28 HPCwire, "UK's Isambard-AI Supercomputer Goes Online, Ranking 2nd Greenest Globally," May 14, 2024, <https://www.hpcwire.com/off-the-wire/uks-isambard-ai-supercomputer-goes-online-ranking-2nd-greenest-globally/>
- 29 David Berwick, "How Manchester has become the place for Tech Startups," LinkedIn, September 19, 2023, <https://www.linkedin.com/pulse/how-manchester-has-become-place-tech-startups-david-berwick/>
- 30 Maddyness, "Manchester, the Engine Room of the Northern startup powerhouse", April 17, 2024, <https://www.maddyness.com/uk/2024/04/17/manchester-the-engine-room-of-the-northern-startup-powerhouse/>
- 31 MIDAS, "Creative, Digital and Technology: Cyber Security," <https://www.investinmanchester.com/why-manchester/industry-expertise/digital-and-technology/cyber-security/>
- 32 David Berwick, "How Manchester has become the place for Tech Startups," LinkedIn, September 19, 2023, <https://www.linkedin.com/pulse/how-manchester-has-become-place-tech-startups-david-berwick/>
- 33 Maddyness, "Manchester, the Engine Room of the Northern startup powerhouse", April 17, 2024, <https://www.maddyness.com/uk/2024/04/17/manchester-the-engine-room-of-the-northern-startup-powerhouse/>
- 34 Greater Manchester Business Board, "Tech giant takes on Manchester's biggest commercial let in two years with Gary Neville's No1 St Michael's," August 29, 2024, <https://gmbusinessboard.com/news/tech-giant-takes-on-manchesters-biggest-commercial-let-in-two-years-in-gary-nevilles-no-1-st-michaels>
- 35 David Berwick, "How Manchester has become the place for Tech Startups," LinkedIn, September 19, 2023, <https://www.linkedin.com/pulse/how-manchester-has-become-place-tech-startups-david-berwick/>

- 36 Dealroom.co, Glasgow City Council, and Invest Glasgow, "Glasgow City Region Tech Ecosystem Report," May 2024, <https://dealroom.co/uploaded/2024/05/Dealroom-Glasgow-Ecosystem-Report-2024.pdf>
- 37 Invest Glasgow, "Why Glasgow? Innovation and R&D," 2025, <https://www.investglasgow.com/why-glasgow/innovation-and-r-d>
- 38 JPMorganChase, "JPMorganChase Opens the Doors of its New Glasgow Office," April 23, 2024, <https://www.jpmorgan.com/technology/news/jpmorgan-chase-opens-new-glasgow-office>
- 39 Dealroom.co, Glasgow City Council, and Invest Glasgow, "Glasgow City Region Tech Ecosystem Report," May 2024, <https://dealroom.co/uploaded/2024/05/Dealroom-Glasgow-Ecosystem-Report-2024.pdf>
- 40 Maddyness, "Belfast: What you need to know about Northern Ireland's fast growing tech hub," January 13, 2024, <https://www.maddyness.com/uk/2024/01/13/belfast-what-you-need-to-know-about-northern-irelands-fast-growing-tech-hub/>
- 41 Invest Northern Ireland, "Cybersecurity," <https://www.investni.com/international-business/cyber-security>
- 42 Maddyness, "Belfast: What you need to know about Northern Ireland's fast growing tech hub," January 13, 2024, <https://www.maddyness.com/uk/2024/01/13/belfast-what-you-need-to-know-about-northern-irelands-fast-growing-tech-hub/>
- 43 John Campbell, "Can Belfast Build a £1bn start-up?" BBC, June 13, 2024, <https://www.bbc.com/news/articles/c1448ggy7gpo>
- 44 WIPO (World Intellectual Property Organization), "Global Innovation Index 2024: Unlocking the Promise of Social Entrepreneurship," 17th Edition, 2024, https://www.wipo.int/web-publications/global-innovation-index-2024/assets/67729/2000%20Global%20Innovation%20Index%202024_WEB3lite.pdf
- 45 Advanced Oxford, "Oxfordshire's Innovation Engine," 2023, <https://www.advancedoxford.com/innovation-engine/>
- 46 Advanced Oxford, "Oxfordshire's Innovation Engine 2023," May 2023, <https://www.advancedoxford.com/wp-content/uploads/2023/06/OIE-2023-Report.pdf>
- 47 Ryan Chapman, "How British Science Came to the Rescue," The Economist, February 27. 2021.
- 48 Ibid.
- 49 University of Oxford, "University of Oxford and Ellison Institute of Technology join forces in a transformative strategic alliance," December 3, 2024, <https://www.ox.ac.uk/news/2024-12-03-university-oxford-and-ellison-institute-technology-join-forces-transformative>
- 50 EIT, "Reimagining the path from scientific discovery to real-world solutions," 2025, <https://www.eit.org/about>
- 51 Dealroom.co, "The rise of Cambridge tech, and its role in the future of innovation," May 23, 2024, <https://dealroom.co/uploaded/2024/05/Dealroom-Cambridge-UK-2024.pdf>
- 52 Cate Lawrence, "Innovate Cambridge launches strategy to accelerate innovation through increased startup investment," Tech.eu, October 24, 2024, <https://tech.eu/2024/10/24/innovate-cambridge-launches-strategy-to/>
- 53 Dealroom.co, "The rise of Cambridge tech, and its role in the future of innovation," May 23, 2024, <https://dealroom.co/uploaded/2024/05/Dealroom-Cambridge-UK-2024.pdf>
- 54 Cate Lawrence, "Innovate Cambridge launches strategy to accelerate innovation through increased startup investment," Tech.eu, October 24, 2024, <https://tech.eu/2024/10/24/innovate-cambridge-launches-strategy-to/>
- 55 Cambridge&, "A Unique Ecosystem: Universities > Research Institutes," 2025, <https://cambridgeand.com/a-unique-ecosystem/universities>
- 56 AccessAble, "The Cambridge Biomedical Campus," 2025, <https://www.accessable.co.uk/university-of-cambridge/the-cambridge-biomedical-campus>
- 57 Cate Lawrence, "Cambridge Innovation Capital launches £100 M Fund for deeptech and life sciences, Tech.eu, February 24, 2025, <https://tech.eu/2025/02/24/cambridge-innovation-capital-launches-ps100m-fund-for-deeptech-and-life-sciences/>
- 58 Cate Lawrence, "Innovate Cambridge launches strategy to accelerate innovation through increased startup investment," Tech.eu, October 24, 2024, <https://tech.eu/2024/10/24/innovate-cambridge-launches-strategy-to/>
- 59 British Business Bank, "What is the Enterprise Investment Scheme (EIS)," 2025, <https://www.british-business-bank.co.uk/business-guidance/guidance-articles/finance/what-is-the-enterprise-investment-scheme-eis>
- 60 GOV.UK, "Apply to use the Seed Enterprise Investment Scheme to raise money for your company," May 25, 2023, <https://www.gov.uk/guidance/venture-capital-schemes-apply-to-use-the-seed-enterprise-investment-scheme#how-the-scheme-works>
- 61 GOV.UK, "Venture Capital Trusts: Introduction to National and Official Statistics," May 23, 2024, <https://www.gov.uk/government/statistics/venture-capital-trusts-statistics-introductory-note/venture-capital-trusts-introduction-to-national-and-official-statistics>
- 62 GOV.UK, "Check what Research and Development (R&D) costs you can claim," October 31, 2024, <https://www.gov.uk/guidance/check-what-research-and-development-rd-costs-you-can-claim>
- 63 GOV.UK, "Check if you can claim Research & Development (R&D) tax relief," May 8, 2024, <https://www.gov.uk/guidance/corporation-tax-research-and-development-rd-relief>
- 64 GOV.UK "Research and Development tax relief for small and medium-sized enterprises," May 8, 2024, <https://www.gov.uk/guidance/corporation-tax-research-and-development-tax-relief-for-small-and-medium-sized-enterprises>
- 65 GOV.UK, "The UK Science and Technology Framework," [policy paper], February 9, 2024, <https://www.gov.uk/government/publications/uk-science-and-technology-framework/the-uk-science-and-technology-framework#regulation-and-standards>

- 66 "Does Britain Have a Problem with R&D Spending?," The Economist, December 1, 2022.
- 67 UK Government direct communication to Bay Area Council Economic Institute
- 68 OECD, "Main Science and Technology Indicators: Highlights from the March 2024 Edition," <https://www.oecd.org/content/dam/oecd/en/data/datasets/main-science-and-technology-indicators/msti-highlights-march-2024.pdf>
- 69 UKRI, "Innovate UK strategic delivery plan 2022 to 2025," September 30, 2022, <https://www.ukri.org/publications/innovate-uk-strategic-delivery-plan/innovate-uk-strategic-delivery-plan-2022-to-2025/>
- 70 Innovate UK Catapult Network, "Innovate UK Catapult Network: Catapults at the Heart of the UK's Innovation Ecosystem," February 2025, <https://catapult.org.uk/wp-content/uploads/2025/02/Catapult-Network-Prospectus-Spring-2025-DIGITAL.pdf>
- 71 Innovate UK Catapult Network, "About Us: Interactive Map," 2025, <https://catapult.org.uk/wp-content/uploads/2025/02/Catapult-Network-Prospectus-Spring-2025-DIGITAL.pdf>
- 72 Oscar Hornstein, "The UK National Quantum Strategy explained," UKTN (Tech City News), March 20, 2023, <https://www.uktech.news/news/government-and-policy/uk-national-quantum-strategy-explained-20230320>
- 73 Cater Lawrence, "The UK government invests £45M in the public benefits of the quantum sector," Tech.eu, February 5, 2024, <https://tech.eu/2024/02/05/uk-government-invests-ps45-million-in-quantum-sector-for-economic-transformation/>
- 74 FCA Innovation, "2024 FCA Innovation Services Autumn Expo: Projects Overview," September 2024, <https://www.fca.org.uk/publication/corporate/fca-innovation-services-autumn-expo-2024.pdf>
- 75 GOV.UK, "Tax and Employee Share Schemes: Company Share Option Plan," <https://www.gov.uk/tax-employee-share-schemes/company-share-option-plan>
- 76 British Business Bank, "How smaller businesses can protect their intellectual property," 2025, <https://www.british-business-bank.co.uk/business-guidance/guidance-articles/business-essentials/how-smaller-businesses-can-benefit-from-protecting-their-intellectual-property>
- 77 GOV.UK, "Apply for the Global Talent visa," 2025, <https://www.gov.uk/global-talent>
- 78 Tech Nation, "Global Talent Visa," 2025, <https://technation.io/global-talent-visa/>
- 79 UK Government direct communication to Bay Area Council Economic Institute

CHAPTER 3

US-UK Technology Investment

- 1 Tech Nation, "UK Tech in the Age of AI: The Tech Nation Report 2024," July 2024, https://live.ff.co/l/800123/2024-07-08/3614gp/800123/1720429350818Y8tzt/The_Tech_Nation_Report_2024__UK_Tech_in_the_Age_of_AI.pdf
- 2 PitchBook, "UK Market Snapshot Q4 2023," March 2024, https://files.pitchbook.com/website/files/pdf/Q4_2023_UK_Market_Snapshot.pdf

- 3 Tech Nation, "UK Tech in the Age of AI: The Tech Nation Report 2024," July 2024, https://live.ff.co/l/800123/2024-07-08/3614gp/800123/1720429350818Y8tzt/The_Tech_Nation_Report_2024__UK_Tech_in_the_Age_of_AI.pdfChapter 4

CHAPTER 4

Bay Area-UK Technology Investment

- 1 Brad Smith, "Our investment in AI infrastructure, skills and security to boost the UK's AI potential," Microsoft [blog], November 30, 2023, <https://blogs.microsoft.com/on-the-issues/2023/11/30/uk-ai-skilling-security-datacenters-investment/>
- 2 Katie Prescott, "Palantir chooses London for AI hub," The Times, June 9, 2023, <https://www.thetimes.com/article/palantir-chooses-london-for-ai-hub-zn7vckhsn#:~:text=Alexander%20Karp%2C%20co-founder%20and,artificial%20intelligence%20software%20solutions%20available.%E2%80%9D>
- 3 Mauro Orru, "U.S. Tech Firms to Invest More Than \$8 Billion in U.K. Data Centers Amid AI Frenzy," The Wall Street Journal, October 14, 2024; CloudHQ, "CloudHQ Global Campuses," <https://cloudhq.com/campuses/>
- 4 GOV.UK, "Prime Minister sets out blueprint to turbocharge AI," [press release], January 13, 2025, <https://www.gov.uk/government/news/prime-minister-sets-out-blueprint-to-turbocharge-ai>
- 5 Founders Forum Group, "Innovation Drivers: Tracking Big Tech's Support of European Startups", 2024, https://live.ff.co/l/800123/2024-10-02/36t52h/800123/1727886198wp2aSen2/Innovation_Drivers__Tracking_Big_Tech_s_Support_for_European_Startups.pdf
- 6 Oscar Hornstein, "Google opens London research centre for disability support tech," UKTN, December 5, 2022, <https://www.uktech.news/medtech/google-research-centre-for-disability-tech-20221205>
- 7 University of Cambridge, "Cambridge and Google partner to facilitate AI research," October 17, 2023, <https://www.cam.ac.uk/news/cambridge-and-google-partner-to-facilitate-ai-research>
- 8 PsiQuantum, "UK Prime Minister Kier Starmer & Chancellor Rachel Reeves Visit PsiQuantum's UK Research & Development Facilities at Sci-Tech Daresbury," September 23, 2024, <https://www.psiquantum.com/news-import/prime-minister-starmer-daresbury>
- 9 Salesforce, "Salesforce to Invest \$2.5bn in its UK Business Over Five Years to Support Growing Customer Base, [press release], June 12, 2018, <https://www.salesforce.com/news/press-releases/2018/06/12/salesforce-to-invest-2-5bn-in-its-uk-business-over-five-years-to-support-growing-customer-base/>
- 10 Salesforce, "Salesforce to Invest \$4B in Its UK Business Over 5 Years," [press release], June 29, 2023, <https://www.salesforce.com/in/news/press-releases/2023/06/29/salesforce-uk-investment-2023/?d=cta-body-promo-8>
- 11 Salesforce, "Salesforce Picks London for First AI Center, Building on \$4B Investment in the UK," [press release], June 6, 2024, <https://www.salesforce.com/in/news/press-releases/2024/06/06/ai-center-london/>

- 12 Joanna Partridge, "Google in \$1bn deal to buy Central Saint Giles offices in London," *The Guardian*, January 13, 2022, <https://www.theguardian.com/technology/2022/jan/14/google-deal-buy-central-saint-giles-offices-london>
- 13 Debbie Weinstein, "Our \$1 billion investment in a new UK data centre," Google [blog], January 18, 2024, <https://blog.google/around-the-globe/google-europe/united-kingdom/google-1-billion-investment-in-a-new-uk-data-centre/>
- 14 Google, "Accelerator: AI First," 2025, <https://startup.google.com/programs/accelerator/ai-first/europe/>
- 15 Prologis, "Prologis commits to \$635M investment at Cambridge Biomedical Campus," [press release], November 3, 2024, <https://www.prologis.co.uk/about/news-and-press-releases/press-releases/prologis-commits-635m-investment-cambridge-biomedical>
- 16 Samuel Gibbs, "Google buys UK artificial intelligence startup Deepmind for £400m," *The Guardian*, January 27, 2014, <https://www.theguardian.com/technology/2014/jan/27/google-acquires-uk-artificial-intelligence-startup-deepmind>
- 17 Sundar Pichai, "Google DeepMind: Bringing together two world-class AI teams," Google [blog], April 20, 2023, <https://blog.google/technology/ai/april-ai-update/>
- 18 Dave Johnson, "DeepMind is Google's AI research hub. Here's what it does, where it's located, and how it differs from OpenAI," *Yahoo! Tech*, May 10, 2024, <https://www.yahoo.com/tech/deepmind-googles-ai-research-hub-234502394.html>
- 19 Romain Dillet, "Google's new AI hub in Paris proves that Google feels insecure about AI," *TechCrunch*, February 15, 2024, <https://techcrunch.com/2024/02/15/googles-new-ai-hub-in-paris-proves-that-google-feels-insecure-about-ai/>
- 20 Google DeepMind, "AlphaGo," <https://deepmind.google/research/breakthroughs/alphago/>
- 21 Google DeepMind, "WaveNet," <https://deepmind.google/research/breakthroughs/wavenet/>
- 22 Sundar Pichai and Demis Hassabis, "Introducing Gemini: our largest and most capable AI model," Google [blog], December 6, 2023, <https://blog.google/technology/ai/google-gemini-ai/#sundar-note>
- 23 Google DeepMind, "About," <https://deepmind.google/about/>
- 24 Google DeepMind, "AlphaFold," <https://deepmind.google/technologies/alphafold/>
- 25 Google DeepMind, "Demis Hassabis & John Jumper awarded Nobel Prize in Chemistry," [blog], October 9, 2024, <https://deepmind.google/discover/blog/demis-hassabis-john-jumper-awarded-nobel-prize-in-chemistry/>
- 26 Associated British Ports (ABP), "ABP and Plug and Play to launch sector-leading Energy Ventures Accelerator," [press release], June 26, 2024, <https://www.abports.co.uk/news-and-media/latest-news/2024/abp-and-plug-and-play-to-launch-sector-leading-energy-ventures-accelerator/>
- 27 Interview with Kieran Borrett, Director, Plug and Play UK
- 28 Y Combinator, "Startup Directory," March 4, 2025, <https://www.ycombinator.com/companies>
- 29 Interview with Carolyn Winnett, Executive Director, Berkeley SkyDeck
- 30 Simon Taylor, "The UK is a Fintech Regulatory Superpower," *Andreessen Horowitz*, September 21, 2023, <https://a16z.com/global-payments-uk/>
- 31 Interview with Andy Tsao, Head of Global Gateway, Silicon Valley Bank, and Sara Rona, Managing Director and Head of UK/Europe, MENA & ANZ, Silicon Valley Bank

CHAPTER 5 UK Tech in the Bay Area

- 1 Los Angeles World Trade Center, "Foreign Direct Investment in California 2024," June 10, 2024, <https://laedc.org/wp-content/uploads/2024/08/2024-FDI-Report.pdf>
- 2 Arm, "The Official History of Arm," [blog], August 16, 2023, <https://newsroom.arm.com/blog/arm-official-history>
- 3 Interview with Stephen Ozoigbo, Head of Government Partnerships and Ecosystems, Arm, San Jose
- 4 Mark Calvey, "HSBC is thinking globally, but acting locally, to build 'Innovation Banking' from the Bay Area," *San Francisco Business Times*, January 23, 2025, <https://www.bizjournals.com/sanfrancisco/news/2025/01/23/hsbc-innovation-banking-startups-svb.html>
- 5 Interview with Geoff Headington, Managing Director – ClimateTech, HSBC Innovation Banking
- 6 Mark Charkin, Executive Director, GBx; "GBx Members: A Curated Community in Bay Area Tech," 2025, <https://gbxglobal.org/gbx-packages-private/>
- 7 Conrad Duncan, "Imperial's US Hub Launches with AI and Robotics Leaders in San Francisco," *Imperial College London*, November 1, 2024, <https://www.imperial.ac.uk/news/257838/imperials-us-launches-witj-ai-robotics/>
- 8 GBx, "Professor Hugh Brady, President of Imperial on the launch of the GBx Technology Innovation Award," August 30, 2024, <https://gbxglobal.org/qa-with-professor-hugh-brady-president-of-imperial/>
- 9 Cole Harry, Programme Director, Imperial Global USA. Conrad Duncan, "Imperial's US Hub Launches with AI and Robotics Leaders in San Francisco," *Imperial College London*, November 1, 2024, <https://www.imperial.ac.uk/news/257838/imperials-us-launches-witj-ai-robotics/>
- 10 Alice Bentinck, "Launching our new hub in San Francisco," *Entrepreneurs First*, January 26, 2024, <https://www.joinef.com/posts/launching-our-new-hub-in-san-francisco/>
- 11 Alice Bentinck, CEO, *Entrepreneur First*. Amy Lewin, "Entrepreneur First hosts first demo day in San Francisco After US Move," *Sifted*, April 17, 2024, <https://sifted.eu/articles/entrepreneur-first-us-demo-day>
- 12 London & Partners, "What we do," December 30, 2024, <https://www.londonandpartners.com/what-we-do>
- 13 British-American Business Council, "About Us," <https://babcsf.org>
- 14 Interview with Jennifer Keane, Co-Founder and CEO, Modern Synthesis
- 15 Interview with Amaan Ahmad, Co-Founder & CEO, Pathfinder

- 16 UK's Digital Health Playbook, "Pangaea Data," UK Department for Business and Trade (DBT), <https://digitalplaybook.co.uk/companies/pangaea-data/>
- 17 Interview with Vibhor Gupta, Director and Co-Founder, Pangaea Data
- 18 JiNan Glasgow George, LinkedIn post about Daniel Doulton and Solaris Suborbital, August 18, 2023, https://www.linkedin.com/posts/jinan-glasgow-george_invention-inventors-ideas-activity-7098326139399503872-rJhZ?utm_source=share&utm_medium=member_desktop&rcm=AAAVm2aABsoHOUoySYxGTcVPF3i2_xtVYgE0
- 19 Interview with Daniel Doulton, Co-Founder & CEO, Solaris Suborbital
- 20 Charlotte Trueman, "Here, Vaire, and everywhere: A bet on billions of reversible computing chips," Data Center Dynamics (DCD), January 2, 2025, <https://www.datacenterdynamics.com/en/analysis/vaire-computing-reversible-computing-semiconductor-chip/>
- 21 Interview with Rodolfo Rosini, Co-Founder & CEO, Vaire Computing
- 22 T.J. Rylander and Colton Dempsey, "Data Protection in the Age of AI: Next47 leads Harmonic Security's Series A," Next47, October 2, 2024, <https://next47.com/data-protection-in-the-age-of-ai-next47-leads-harmonic-securitys-series-a/>
- 23 Ibid.
- 24 Interview with Alastair Paterson, CEO and Co-Founder, Harmonic Security
- 25 Embedded Vision Summit, "Oliver Gunasekara: Independent Consultant," Edge AI + Vision Alliance, 2021, <https://embeddedvisionsummit.com/2021/speaker/oliver-gunasekara/>
- 26 GBx, "Member profile: Oliver Gunasekara, Impossible Metals," <https://gbxglobal.org/member-profile-oliver-gunasekara-impossible-metals/>
- 27 Ilya Epikhin et al., "Seabed Mining: A \$20 Trillion Opportunity," Arthur D. Little, August 2024, <https://www.adlittle.com/en/insights/viewpoints/seabed-mining-20-trillion-opportunity>
- 28 Impossible Metals, "Impossible Metals Announces Successful Deep-Water Test of Eureka II Autonomous Underwater Vehicle (AUV) or Deep Sea Minerals Harvesting," [press release], May 13, 2024, <https://impossiblemetals.com/blog/impossible-metals-announces-successful-deep-water-test-of-eureka-ii-autonomous-underwater-vehicle-auv-for-deep-sea-minerals-harvesting/>
- 29 Impossible Metals, "Frequently Asked Questions: D.18 What is the efficiency of the underwater robot's collecting system?" <https://impossiblemetals.com/frequently-asked-questions/faqs-impossible-metals-technology/>
- 30 Interview with Oliver Gunasekara, Co-Founder and CEO, Impossible Metals
- 2 Atomico, "State of European Tech 24: 10th Anniversary Edition," November 2024, p. 259, https://www.investeurope.eu/media/g3yobbcs/soet2024_report.pdf
- 3 GOV.UK, "Mansion House 2023," July 11, 2023, <https://gov.uk/government/collections/mansion-house-2023>
- 4 Atomico, "State of European Tech 24: 10th Anniversary Edition," November 2024, p. 252, https://www.investeurope.eu/media/g3yobbcs/soet2024_report.pdf
- 5 House of Commons Library, "Research and development spending," UK Parliament, September 11, 2023, <https://commonslibrary.parliament.uk/research-briefings/sn04223>
- 6 OECD, "Gross domestic spending on R&D," 2021, <https://www.oecd.org/en/data/indicators/gross-domestic-spending-on-r-d.html?oecdcontrol-8027380c62-var3=2021>
- 7 Alistair Smout, "Britain rejoins EU's Horizon science programme in further boost for ties," Reuters, September 7, 2023, <https://www.reuters.com/world/uk/britain-rejoins-eus-horizon-science-programme-with-bespoke-agreement-2023-09-07/>
- 8 GOV.UK, "UK joins Horizon Europe under a new bespoke deal," [press release], September 7, 2023, <https://www.gov.uk/government/news/uk-joins-horizon-europe-under-a-new-bespoke-deal>
- 9 Berkeley Lab, "Cyclotron Road Fellows Surpass \$1 Billion in Follow-on Funding," June 26, 2023, <https://cyclotronroad.lbl.gov/2023/06/26/cyclotron-road-fellows-surpass-1-billion-in-follow-on-funding/>
- 10 Matt Reynolds, "Eight Scientists, a Billion Dollars, and the Moonshot Agency Trying to Make Britain Great Again," Wired, October 2, 2024, <https://www.wired.com/story/aria-moonshot-darpa-uk-britain-great-again/>
- 11 ARIA, "Empowering scientists to reach for the edge of the possible," 2025, <https://www.aria.org.uk>
- 12 GOV.UK, Department of Health & Social Care, "Putting data, digital and tech at the heart of transforming the NHS," November 23, 2021, <https://www.gov.uk/government/publications/putting-data-digital-and-tech-at-the-heart-of-transforming-the-nhs/putting-data-digital-and-tech-at-the-heart-of-transforming-the-nhs>
- 13 John Reynolds, "Quantum computing startups will invest overseas if government shelves further tech funding, warns top UK startup," Tech.eu, August 22, 2024, <https://tech.eu/2024/08/22/quantum-startups-will-invest-overseas-if-government-shelves-further-tech-funding/>
- 14 Elliot Weston and Suzanne Hill, "Carried interest taxation in the UK: reform but not abolition," Hogan Lovells, January 14, 2025, <https://www.hoganlovells.com/en/publications/carried-interest-taxation-in-the-uk-reform-but-not-abolition>
- 15 Daniel Ionescu, "Why UK entrepreneurs are moving to Dubai, and why more are contemplating to do so too," Startups Magazine, December 2024, <https://startupsmagazine.co.uk/article-why-uk-entrepreneurs-are-moving-dubai-and-why-more-are-contemplating-do-so-too>
- 16 Ben Smith and Devika Punjabi, "UK Autumn Budget 2024: Key Points for Employers," Littler, December 3, 2024, <https://www.littler.com/publication-press/publication/uk-autumn-budget-2024-key-points-employers>

CHAPTER 6
Where Next?

- 1 GOV.UK, "Policy Paper: The Atlantic Declaration," June 21, 2023, <https://www.gov.uk/government/publications/the-atlantic-declaration/the-atlantic-declaration>

- 17 Labour Party, "Start-Up, Scale-Up: Making Britain the Best Place to Start and Grow a Business." 2022, https://labour.org.uk/wp-content/uploads/2022/12/WEB-17247_22-Start-up-review-v12-ALT-2.pdf
- 18 GOV.UK, "AI Opportunities Action Plan: terms of reference," July 26, 2024, <https://www.gov.uk/government/publications/artificial-intelligence-ai-opportunities-action-plan-terms-of-reference/artificial-intelligence-ai-opportunities-action-plan-terms-of-reference>
- 19 GOV.UK, "Prime Minister sets out blueprint to turbocharge AI," [press release], January 13, 2025, <https://www.gov.uk/government/news/prime-minister-sets-out-blueprint-to-turbocharge-ai>
- 20 Kieran O'Connor, "PSR's future becomes uncertain as UK eyes regulation cuts," Payment Expert, February 24, 2025, <https://paymentexpert.com/2025/02/24/psr-future-uk-regulation-cuts/>

CHAPTER 7

The UK-Silicon Valley Opportunity

- 1 Interview with John Cumbers, Founder & CEO, SynBioBeta (<https://www.synbiobeta.com>)
- 2 Interview with Brennan O'Donnell, Partner, Frontline Ventures
- 3 John Reynolds, "'Our future is predominantly American', says CEO of Nvidia-backed London Startup PolyAI," Tech.eu, February 19, 2025, <https://tech.eu/2025/02/19/our-future-is-predominantly-american-says-founder-of-nvidia-backed-london-startup-polyai/>
- 4 Frontline Ventures, "The European Expansion Report: How US Software Companies Win (and Lose) In Europe 2023," June 2023, <https://frontline.vc/wp-content/uploads/2023/06/The-European-Expansion-Report-2023.pdf>
- 5 Interview with Adam Cragg, Partner, Osney Capital

IMAGE CREDITS

- Front Cover: Millenium Bridge and St. Paul's Cathedral, London, by Acabashi on Wikimedia Commons
- Page 10: The Gherkin, London, by David Tkocz on Unsplash
- Page 11: The Shard, London, by Paul Knight on Unsplash
- Page 23: The Cube, Birmingham, by Mike Hindle on Unsplash
- Page 32: Princess Street, Manchester, by Mangoppear Creative on Unsplash
- Page 33: Buchanan Street, Glasgow, by Jason Briscoe on Unsplash
- Page 34: The Titanic Quarter, Belfast, by K. Mitch Hodge on Unsplash
- Page 35: Aerial view of Oxford, by Clément Proust on Pexels
- Page 36: The Mathematical Bridge, Queen's College, University of Cambridge, by Cajeo Zhang on Unsplash
- Page 40 and 41: More London Riverside, London Bridge City, by Harry Shelton on Unsplash
- Page 47: Hardman Square Area, Spinningfields, Manchester, by Patyo 1994 on Wikimedia Commons
- Page 53: 20 Fenchurch Street (The Walkie Talkie), London, by Darren Falukner on Unsplash
- Page 56: One Canada Square, Canary Wharf, London, by Harry Skelton on Unsplash
- Page 57: 5 Broadgate, City of London, by Stuart Frisby on Unsplash
- Back Cover: Canary Wharf, London, by George Rixon on Flidkr

ABOUT THE BAY AREA COUNCIL ECONOMIC INSTITUTE

The Bay Area Council Economic Institute is the leading think tank focused on the economy of the San Francisco Bay Area - Silicon Valley, the most dynamic region in the United States and the world's leading center for technology and innovation. A forum for stakeholder engagement and a respected source of information and fact-based analysis, the Institute is a trusted partner and adviser to both business leaders and government officials. Through its economic and policy research and its many partnerships, the Institute addresses major issues impacting the development and competitiveness of California and the region, including

infrastructure, climate, science and technology, and international trade and investment. The Institute is part of the Bay Area Council, a public policy organization that includes hundreds of the region's largest employers. It also supports and manages the Bay Area Science and Innovation Consortium (BASIC), a partnership of Northern California's research universities, federal laboratories, independent research laboratories, and leading research-based companies. BASIC provides a forum for the exchange of ideas on regional research priorities and a platform for public-private collaboration to address them.



Bay Area Council Economic Institute

San Francisco, CA

www.bayareaeconomy.org • bacei@bayareacouncil.org • [@bayareaeconomy](https://twitter.com/bayareaeconomy)

