



Understanding the UK's high-growth artificial intelligence companies

November 2023



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Executive summary

In the rapidly evolving landscape of artificial intelligence, the UK stands out as a leading hub of innovation. Though the nation's Artificial Intelligence (AI) industry is in its infancy, high-growth AI companies are attracting unprecedented public and private investment to fuel their expansion.

The UK's 1,797 active, high-growth AI companies are highly concentrated in Greater London, with 1,027 companies, or 57.2%, headquartered in the capital. This can be attributed to many factors, including talent availability, better infrastructure, and government support in the capital. Another populous region is the East of England, with 133 companies, and a notable cluster in the Cambridge region.

Many AI companies operate in the software-as-a-service, internet platforms, and mobile apps sectors, offering tools like banking apps and eHealth platforms. Fintech is another significant sector, with AI aiding in automation, fraud prevention, and service quality, as seen by companies like Thought Machine.

Equity investments have fueled AI growth, with early-stage businesses benefitting significantly. High-growth AI companies within the UK attracted £3.21b in 2022 via 746 deals, indicating strong investor confidence. High-value deals in diverse sectors show the sector's expansive impact. Amongst investors, SFC Capital leads in terms of UK equity deals in AI, participating in 104 deals since 2013, leveraging SEIS and EIS funds. Mercia Asset Management invests outside London, partnering with universities to support spinouts. Crowdfunding platforms also actively fund AI ventures.

The UK's AI sector shows a significant gender disparity, with 78.7% of companies having all-male founding teams and only 6.62% being all-female. Efforts are underway to enhance diversity, with initiatives like the Barclays Female Founder and Black Founder Accelerator. Age-wise, founders aged 30-59 are predominant, suggesting challenges for younger entrepreneurs. 66.3% of these founders are UK nationals, underscoring the domestic origin of AI innovation.

Amongst the top 200 active AI companies from 2013-2022, ranked in terms of equity raised, 41.7% of founders obtained master's degrees, 30.7% bachelor's, and 22.3% PhDs. Oxford and Cambridge lead in founder alumni, followed by Imperial and UCL. Notably, some founders attended global universities like Toronto, Harvard, and Stanford.

Despite the relatively nascent nature of the AI industry, there already exists a promising cohort of companies nationwide that are securing substantial public and private funding to bolster their expansion. As AI becomes increasingly more integrated into various sectors, companies within the AI industry will continue to experience increases in investment, fuelling innovation and technological advancements.

Introduction to artificial intelligence

Artificial Intelligence (AI) refers to the technologies employed to perform tasks that would otherwise require human intelligence. AI has evolved to impact a myriad of sectors across the UK ecosystem, including healthcare, finance, and manufacturing. Today, AI technologies are at the heart of groundbreaking applications in pattern recognition, problem-solving, and process automation. In recent years, AI has become a household name by embedding itself into common consumer goods and services.

Within its expansive wealth of applications, AI encompasses a range of sub-techniques, including machine learning, deep learning, natural language processing, and robotics. Amongst these, machine learning is one of the most prominent branches, as it involves the analysis of large datasets by mimicking

human learning patterns and refining its performance over time. Machine learning is prevalent in diverse applications, such as speech recognition, self-driving cars, and cybersecurity.

The accelerated growth of AI has fuelled considerable debate and given rise to multiple ethical and legal considerations—including recent debates as to how the dataset models used to train machine learning algorithms can introduce bias and error to its AI models. Recognising the challenge, governments are instituting regulatory frameworks to mitigate associated risks. The UK, in particular, has outlined the core principles of transparency, safety, and accountability, as guidelines for integrating AI within various industrial sectors. This strategy aims to optimise the benefits of AI-driven innovation while safeguarding societal interests. Moreover, these concerns have been addressed at the recent [AI Safety Summit](#) in November, with a direct focus on how to best manage the risks from advances in AI and further understand the variables influencing the potential risks. A key takeaway from the summit was the necessity for a global regulatory framework to collectively manage the risks posed by AI.

The AI market in the UK is currently valued at more than £16.9b, with projections indicating an exponential

increase to £804b by 2035.¹ Various factors are catalysing this growth, including the increasing ubiquity of data, technological advancements, and a surge in demand due to the post-pandemic digital transformation. Geographically, despite a higher concentration of AI clusters in London and the South East, there has been nationwide growth across the last five years. The UK's startup ecosystem is supported by leading AI research centres, often affiliated with academic institutions. Investors in both Cambridge (Cambridge Innovation Capital and Cambridge Enterprise) and Oxford (Oxford Sciences Enterprises, Oxford Technology and Innovations Fund) have been active backers of AI startups.

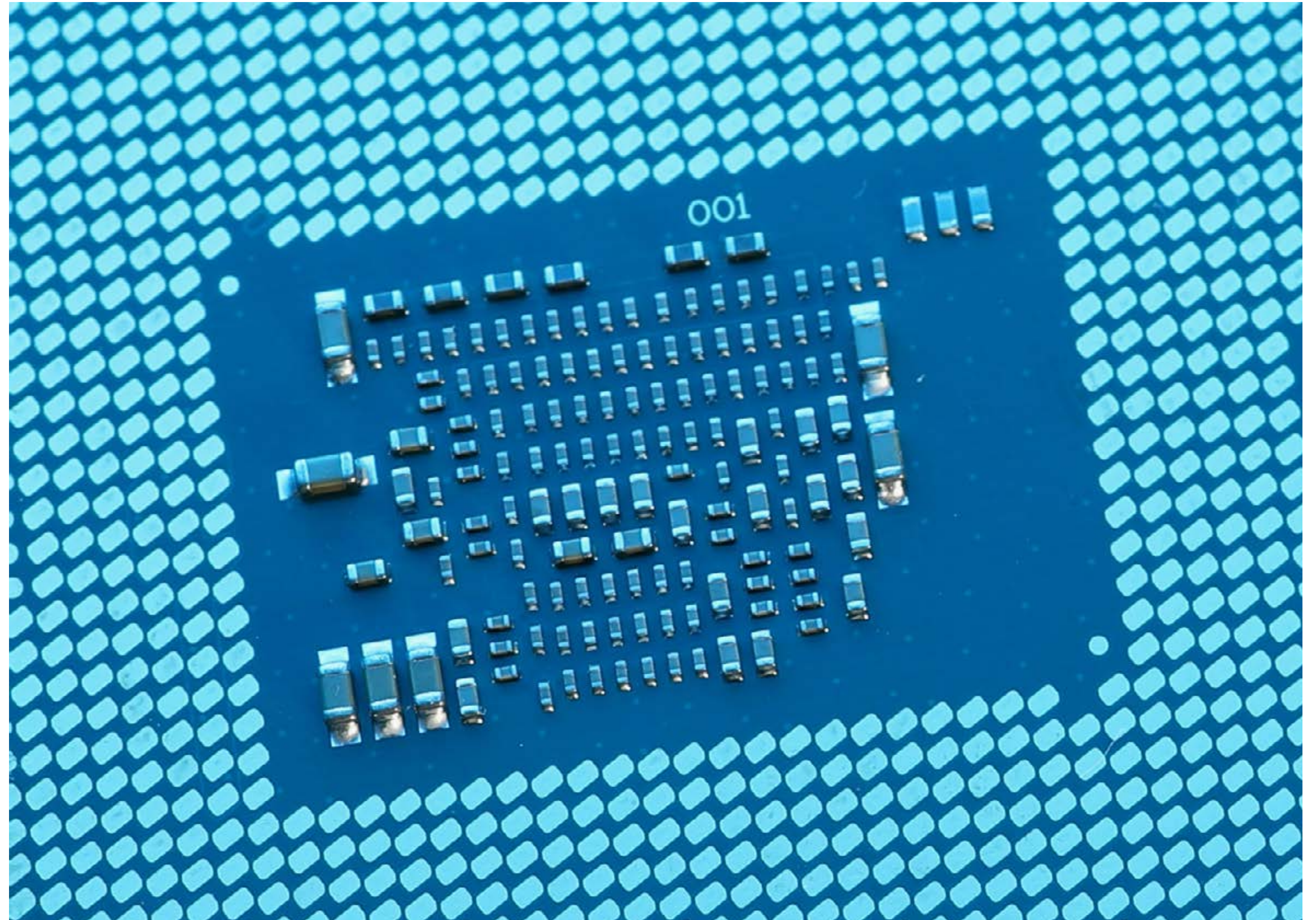
Furthermore, the UK government is vigorously endorsing AI initiatives through various funding mechanisms, which has led to the technology becoming widely adopted and integrated. International tech giants like Google, Amazon, and Hewlett Packard Enterprise (HPE) have also substantially invested in the UK's AI landscape, amplifying its growth prospects. Financial support through funding and grants continues to encourage early-stage businesses within this industry. Innovate UK, the UK's national innovation agency, has further earmarked £100m specifically for

¹ [United Kingdom Artificial Intelligence Market](#)

AI and machine learning projects,² thereby providing substantial momentum for technological advances in this realm.

This report examines the 2,319 active or historically active high-growth AI companies within the UK. The large number of high-growth companies in this sector indicates a fertile ground for investment, thus driving innovation. These companies serve as vital catalysts for technological, economic, and social growth. Their collective impact is further enriched by the ecosystem of academic collaborations, governmental partnerships, and cross-industry applications. By increasing and supporting the number of high-growth AI companies in the country, the UK can ensure development and competitiveness across the budding industry. To qualify as an AI company for this report, the business must be engaged in the development or application of AI technologies. The report underscores the diversity of AI-related businesses and expounds on the sector's considerable potential.

² [Innovate UK launches £100 Million AI fund for UK Business](#)



Business demography in the UK

The highest concentration of high-growth AI businesses (58.8%) is found within London, with key clusters in Westminster and Camden. The Silicon Fen cluster in Cambridge is another highly populated region, with 78 high-growth companies. The top sector for high-growth AI businesses is analytics, insight and tools (814), followed closely by software-as-a-service (734), and internet platforms (418). Over the past decade, there have been a collective 179 exits, with the highest concentration of these occurring in 2022 (46).

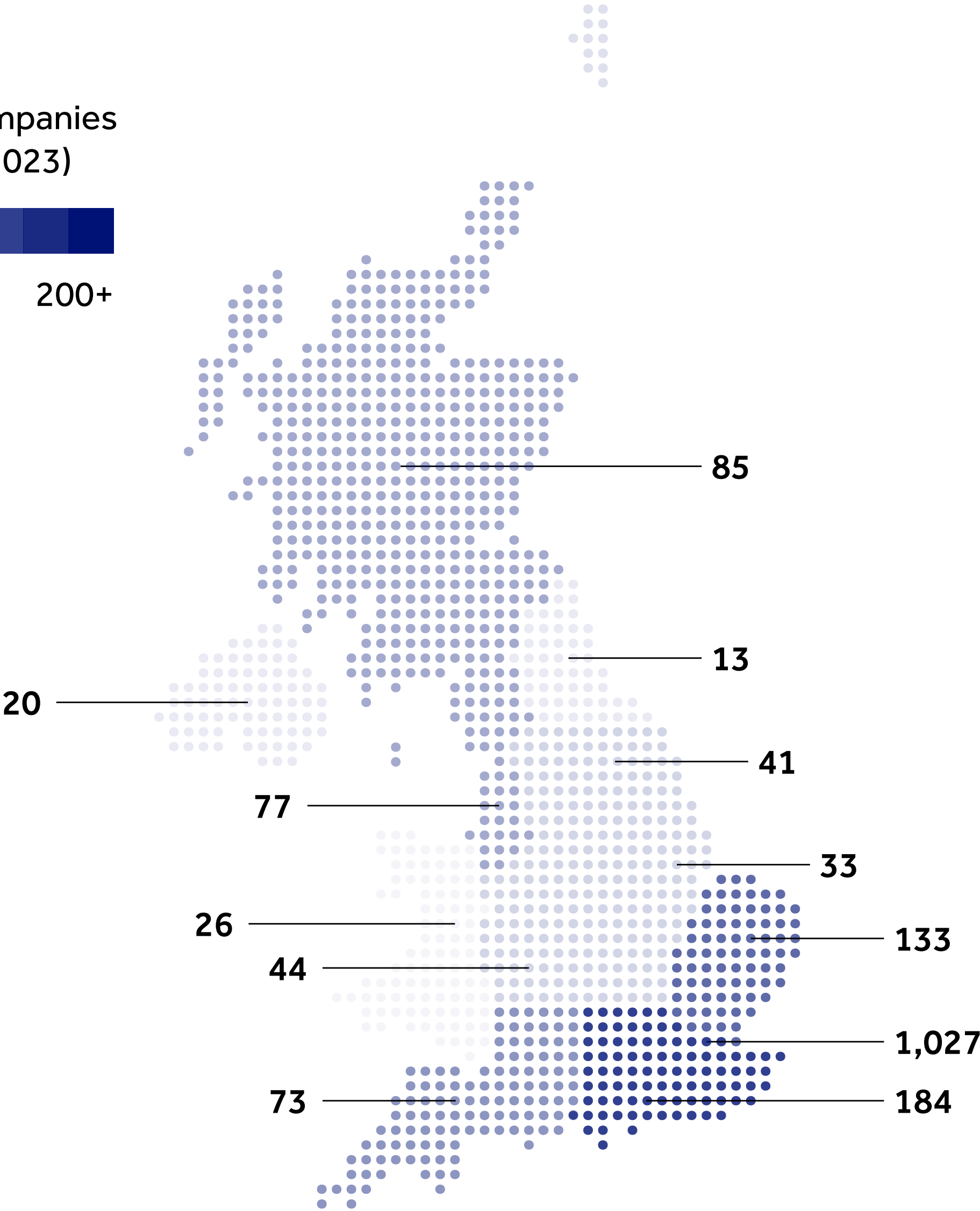
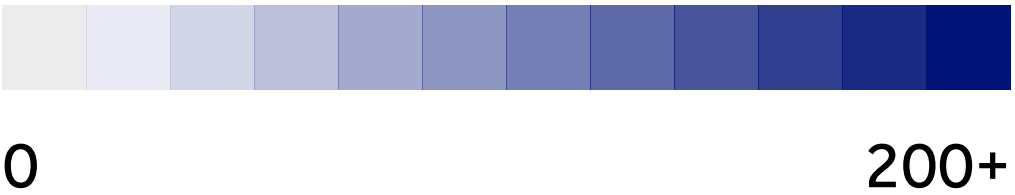


Regional distribution

London leads in terms of active company population, with over 1,000 high-growth AI businesses headquartered in the capital. The boroughs of Westminster and Camden have the highest concentration, with 177 and 149 companies respectively. This position validated by the study conducted by software analytics company SAS, ranking them as the most AI-ready boroughs. The close proximity to research institutions render these locations ideal for nurturing AI clusters.

The East of England is another highly populated area, with 133 companies. This region exhibits a dispersed landscape, benefitting from a network of prestigious universities. The Silicon Fen cluster in Cambridge is home to 78 high-growth businesses, and has paved the way for several successful startups, playing a pivotal role in the technology underpinning modern AI, encompassing applications in machine learning, chatbots, and speech recognition.

Number of high-growth companies per UK region (September 2023)



Company spotlight: Genie AI

The legal industry is increasingly adopting AI technologies in an attempt to streamline processes and improve efficiency. By developing an AI-powered legal assistant, London-based Genie AI aims to reduce the burden of repetitive tasks and provide support to lawyers.

Founded in 2017 by CEO Rafie Faruq and CTO Nitish Mutha, Genie AI is a legal tech company hosting the UK's largest open-source legal template library. Whilst undertaking their masters in Machine Learning at UCL, Faruq and Mutha identified many AI opportunities within the legal sector and sought to create a legal assistant that could function like a knowledgeable and experienced team member. Genie AI's Legal Assistant

utilises a combination of GPT-4, Claude-2, and proprietary models to read legal documents, understand questions, and provide tailored answers. Even though the assistant currently is limited to drafting, reviewing and asking questions on existing documents, Mutha says: "Soon users will get an AI agent which directly edits, updates, and even automatically negotiates their legal documents."

Genie AI has attended several accelerator programmes including Tech Nation's Applied AI and Entrepreneur First. Alongside the £2.55m raised in equity, these experiences have facilitated significant 30-fold year-on-year in new company accounts for Genie AI. The company has also secured several Innovate UK grants, the most recent being £198k in February 2023.

According to Faruq, "The UK is one of the easiest countries to set up and run an international business, and the government's Industrial Strategy and AI Sector Deal has cemented its position at the frontier of global AI. Through the digitisation of public sector services and maintaining open data sets, the UK AI sector will be able to make rapid advancements". Faruq also expressed optimism about the UK government's proactive stance. Genie AI's commitment to collaborating with industries and partnering with the government is evident in its role as the sole legal tech company to participate in UK AI Safety Summit events.

Shedding light on Genie AI's commitment to innovation, Faruq explains: "We are developing our own large language models (LLMs) that will outperform the next generation of foundation models at legal specific tasks. Legal accuracy is so important to us that we maintain a model-agnostic approach, so we'll use Open AI or Anthropic tools (as well as our own). This is especially important for AI companies to embrace, given that we're operating in an industry that is evolving at such a rapid pace."

Faruq encourages upcoming entrepreneurs to visualise future scenarios, highlighting that "we're only at the beginning of a Cambrian explosion of new products."



"The impact of AI over the next decade will be underestimated, so the government must be more nimble than it has ever been to be able to adapt and embrace the best progress."

Rafie Faruq

Co-founder and CEO of Genie AI

Top sub-sectors

Within the UK’s high-growth AI landscape, the leading application sector is analytics, insight and tools, with 814 companies. Due to the ability of AI to identify patterns and generate well-informed analysis, this sector particularly benefits from the advantages of AI tools. The sector includes Quantexa, a company specialising in the field of data analytics by harnessing the power of AI to analyse big data—vast and complex datasets generated from various sources. They offer a decision intelligence platform that helps clients make more informed decisions by processing and extracting valuable insights from their data, ultimately facilitating data-driven strategies. Since its incorporation in 2016, Quantexa has raised £286m over six rounds of funding.

Given the large number of businesses offering AI-driven products and services, there is an unsurprising number of companies operating in the software-as-a-service, internet platform, and mobile apps sectors.

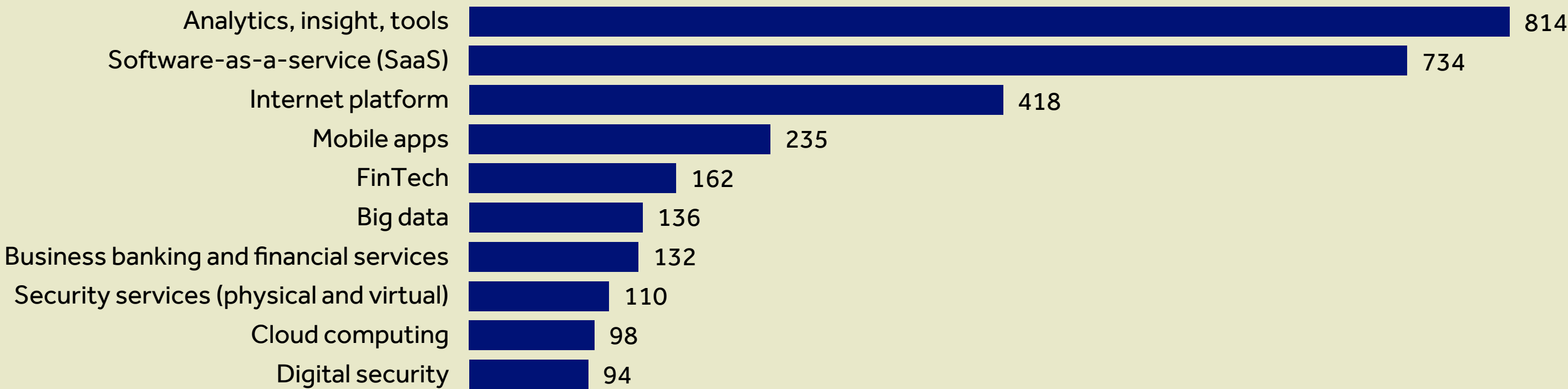
AI tools are increasingly becoming more mobile-friendly, and are found in a number of consumer applications. These readily available tools might include banking applications, eHealth platforms, or personalised recommendation software.

Another prominent sector across high-growth AI businesses is fintech. With 162 companies in the sector, AI is used in the automation of critical

processes, identifying threats, preventing fraud, and enhancing the overall quality of service.

Companies in this area include Thought Machine, a London-based banking software developer, which provides integrated solutions for managing financial products. To date, the business has raised £398m in equity via seven deals, with investors including ING Ventures, IQ Capital Fund, and Molten Ventures.

Top application sectors for high-growth AI companies (September 2023)



Company spotlight: Dragonfly AI

Dragonfly AI develops tools that help businesses understand how their advertising grab consumer attention, using eye movement data to improve marketing strategies. Spun out from Queen Mary University of London, the company combines AI with neuroscience to understand where people are looking when viewing ads and product packaging—an approach known as gaze path analysis.

Founded in 2018 by co-founders David Mitchell and Mark Bainbridge, Dragonfly AI's technology replicates human attention patterns through eye movement analysis in combination with machine learning algorithms. This results in the creation of visual heat maps, offering insights into the initial seconds of

consumer engagement. This data can then be utilised to optimise content for maximum impact, leading to increased sales. Among the clients in Dragonfly AI's portfolio are Diageo, GSK, and Vodafone.

Since 2019, Dragonfly AI has secured over £5m in funding with support from Guinness Ventures, Foresight Ventures and Capita. King highlights the importance of fostering innovation within the organisation, stating, "All of our engineers and data scientists allocate 20% of their time to projects using new tools. Innovation has always been the driving force behind Dragonfly AI's success, and giving our talented team the opportunity to explore and experiment with tech is essential to our success."

In a competitive tech landscape, attracting and retaining top talent is pivotal to a company's success and sustainability. King acknowledges this, remarking, "One of our biggest challenges and opportunities is keeping world-class AI talent when they can earn a lot better money away from a start-up. For that, we need to make sure Dragonfly is an incredible place to work".

Furthermore, King emphasises the importance of leveraging the UK's emerging talent: "The UK really benefits from having strong academic foundations with our universities, which in turn creates a rich and

diverse talent pool. We work tightly with universities to onboard the brightest young minds". Despite the challenges of securing and retaining AI talent as a relatively new company, Dragonfly AI has already established an internship programme that equips university students with the skills and knowledge essential for thriving in a tech startup environment.

Looking ahead, Dragonfly AI has ambitious plans for the future. As AI continues to advance and reshape industries, the company is focused on expansion, specifically into the US market. This move represents its commitment to global innovation and belief in the transformative power of technology.



"The landscape of AI is extremely dynamic, the next few years will really determine if the UK can compete on the AI stage with the US and Europe."

Steve King

CEO of Dragonfly AI

Exited companies

Between 2013 and 2022, 179 companies successfully achieved exits, either in the form of an acquisition or initial public offering (IPO). Notably, 46 of these exits took place in 2022, marking a substantial 21.0% increase compared to the previous year. Acquisitions dominated the exit landscape, constituting a significant 94.9% of all exits by AI companies, while 5.02% ventured into the public market—a trend seen across most sub-sectors.

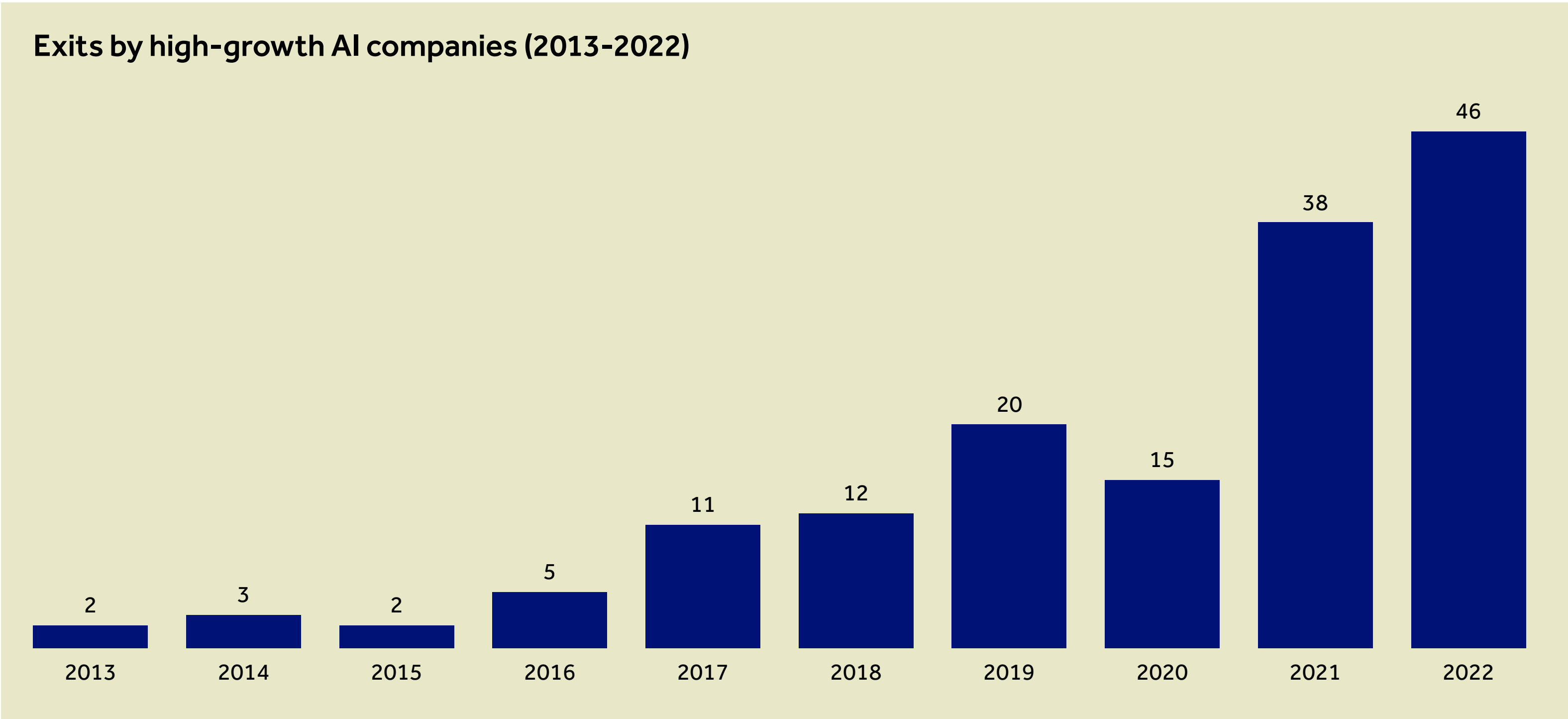
The rapid evolution of AI technology has been a significant driver of exits. As AI companies develop innovative solutions, they become attractive targets for larger corporations. For example, DeepMind's acquisition by Google was a strategic move to help it compete against other major tech companies. The company acquired DeepMind for £400m in 2014, topping the list in terms of highest acquisition prices. The high rate of acquisitions often reflects a broader industry trend towards consolidation, to expand product offerings, access specialised talent, and reduce competition.

Business demography in the UK

There was a noticeable decrease in exits in 2020, most likely attributed to companies biding their time for more favourable market conditions. As a result, there was a surge in public exits the subsequent year, exemplified by the £226m IPO of pharmatech company Exscientia in October 2021. Leveraging artificial intelligence techniques for faster and more efficient drug discovery, Exscientia had secured £300m over seven rounds of private funding, as well as three grants

totalling £5.40m prior to its listing on the NASDAQ stock exchange.

Babylon, a digital health chatbot company, went public via a SPAC merger with Alkuri Global in 2021. This valued the company at £334m. Babylon previously raised £518m across five deals since its incorporation in 2013. In 2023, the company is now part of eMed, a digital health company.



Company spotlight: Inicio AI

AI's integration into sectors like healthcare, education, and financial services holds the potential for profound societal benefits. In this landscape, Inicio AI, founded in April 2020 and led by CEO Rachel Curtis, is actively addressing social challenges through advanced AI technologies. The company is focused on developing a sophisticated conversational AI tool tailored for effective debt support. By leveraging AI technology to enhance financial literacy and understanding, Inicio AI demonstrates a forward-thinking approach, illustrating how AI can be harnessed for tangible, positive impacts on individuals and society.

Inicio AI utilises natural language processing (NLP) to

simulate conversational affordability assessments that are usually held with human agents. As with most AI implementations, this tool not only has cost efficiencies associated, but also time. The developed tool is set to be utilised in banks, debt management firms, and charities. Curtis further elaborates, stating, "We are actively collaborating with partners such as Whenfresh, Credit Reference Agencies, and Open Banking providers to seamlessly integrate data into their solution. This not only enhances the user experience but also fortifies the data's reliability and verification for businesses."

Inicio AI recently graduated from the University of Edinburgh AI Accelerator 2023, and Barclays Eagle Labs Female Founder Accelerator 2023. Both of these platforms have enabled the company to secure significant equity investment and expand their team. Inicio AI has so far raised £1.5m in equity funding.

AI, while transformative, does have challenges. Integration into daily operations sparks concerns about potential misuse, fostering consumer uncertainty. Curtis highlights the risk this worry plays in the eroding of confidence in AI applications. This is followed by an emphasis on the crucial role regulators must play. Curtis acknowledges the perpetual challenge of regulation and how to keep pace with the rapid innovation in the

AI landscape. Within the tech ecosystem, a common challenge encountered by early-stage businesses is the talent shortage. Curtis states, "Recruit those truly passionate about what you are doing and the problem you are solving with the technology."

Curtis advises aspiring entrepreneurs in the sector to "find a solution to a problem, not try to find a problem for your solution." In her view, deep understanding and passion for a specific use case are key to gaining traction in an industry flooded with technological marvels. Inicio AI stands as an example of this philosophy as it continues to deliver positive societal impact through purposeful and innovative solutions.



"AI can be used as a force for good to help both consumers and businesses. Its development allows us to pick some low-hanging fruit to support both end consumers and businesses alike. "

Rachel Curtis

Co-founder and CEO of Inicio AI

Funding and innovation

The UK's high-growth AI landscape has experienced remarkable growth in regards to investment over the past ten years. Companies secured an unprecedented £3.21b in equity funding during 2022 alone. Similarly, the number of published patent applications surged from 39 in 2012 up to 513 in 2020.

Public funding

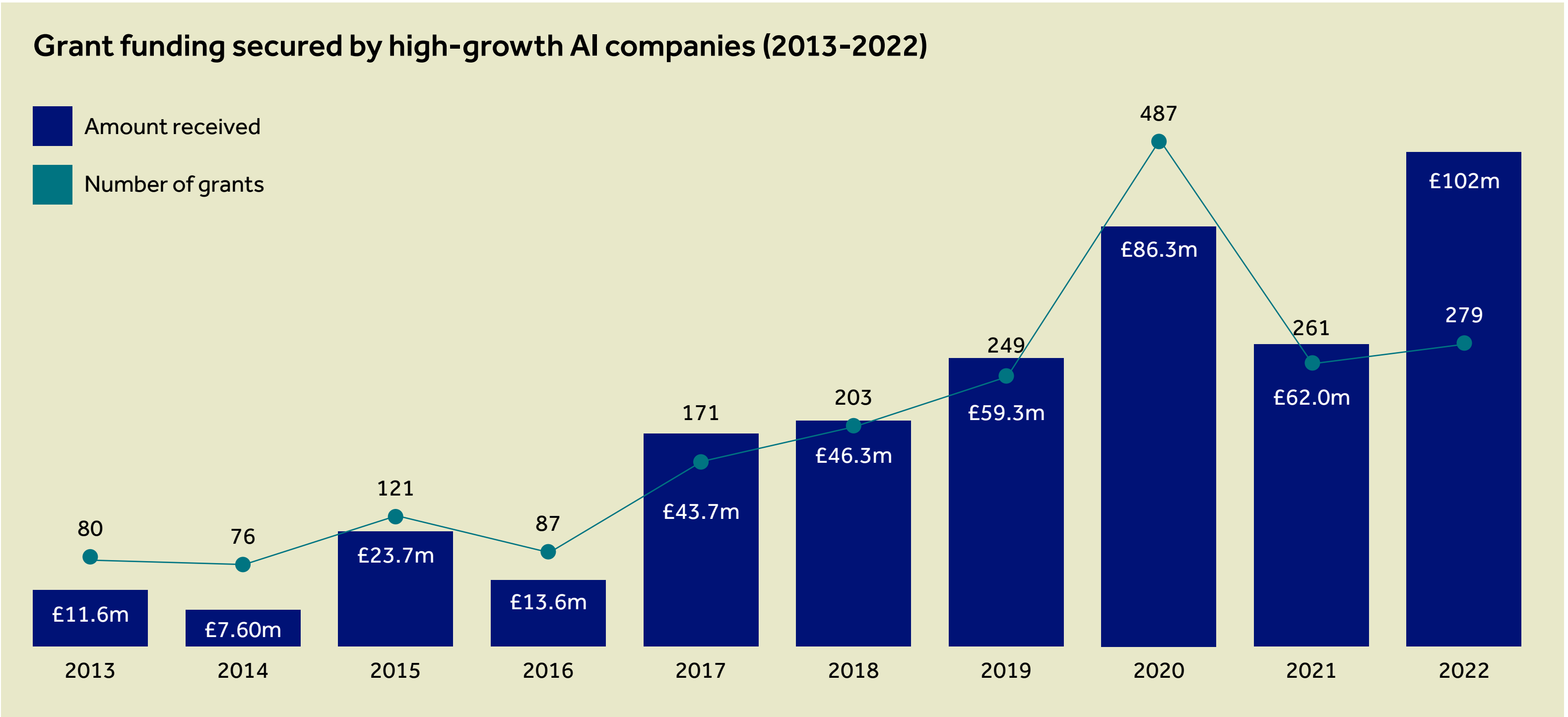
Public funding into AI is an essential component of the UK’s [National AI Strategy](#), which aims to promote innovation, research and development across the sector. The positive trend observed in grant funding levels across the decade underscores the growing recognition of AI’s importance. Public funding can fill funding gaps and also allow companies within the AI sector to undertake ambitious projects without taking on all the financial risks themselves. The period between 2013 and 2022 witnessed an almost tenfold increase in the total value of grants allocated to high-growth AI businesses. In the year 2022 alone, a total of £102m was awarded in the form of 279 grants, marking a 63.7% increase from the £62.0m allocated in 2021.

The top recipient in 2022 was DIOSynVax with grants totalling £32.1m. A spinout from the University of Cambridge, DIOSynVax utilises a combination of AI and synthetic biology to identify and develop vaccines against existing and future outbreaks. The company received this grant from Coalition for

Epidemic Preparedness Innovations (CEPI)—a global partnership supporting pandemic vaccine development. As of today, DIOSynVax has been awarded a total of £34.9m across six grants.

This growth comes despite a challenging economic landscape in the aftermath of the COVID-19 pandemic and evolving regulatory frameworks—factors that contributed to a downturn in both the number and

value of grants in 2021. However, as the number of active AI companies has consistently increased on an annual basis, grant funding has correspondingly expanded. In 2020, the high-growth AI industry witnessed a surge in the number of grants secured with 467 issued—a majority of which were awarded by Innovate UK. This figure marked the highest annual total of grants awarded to high-growth AI companies in the past decade.



Private funding

Equity investment plays a pivotal role in encouraging growth within the AI sector, particularly for SMEs. The last ten years have marked a significant growth period for high-growth AI companies in the UK, culminating in an unprecedented £3.21b in 2022. This influx of equity capital is crucial for SMEs, as it can be a very patient form of capital, offering financial support to engage in sustained research and development (R&D), a cornerstone of innovation in the sector.

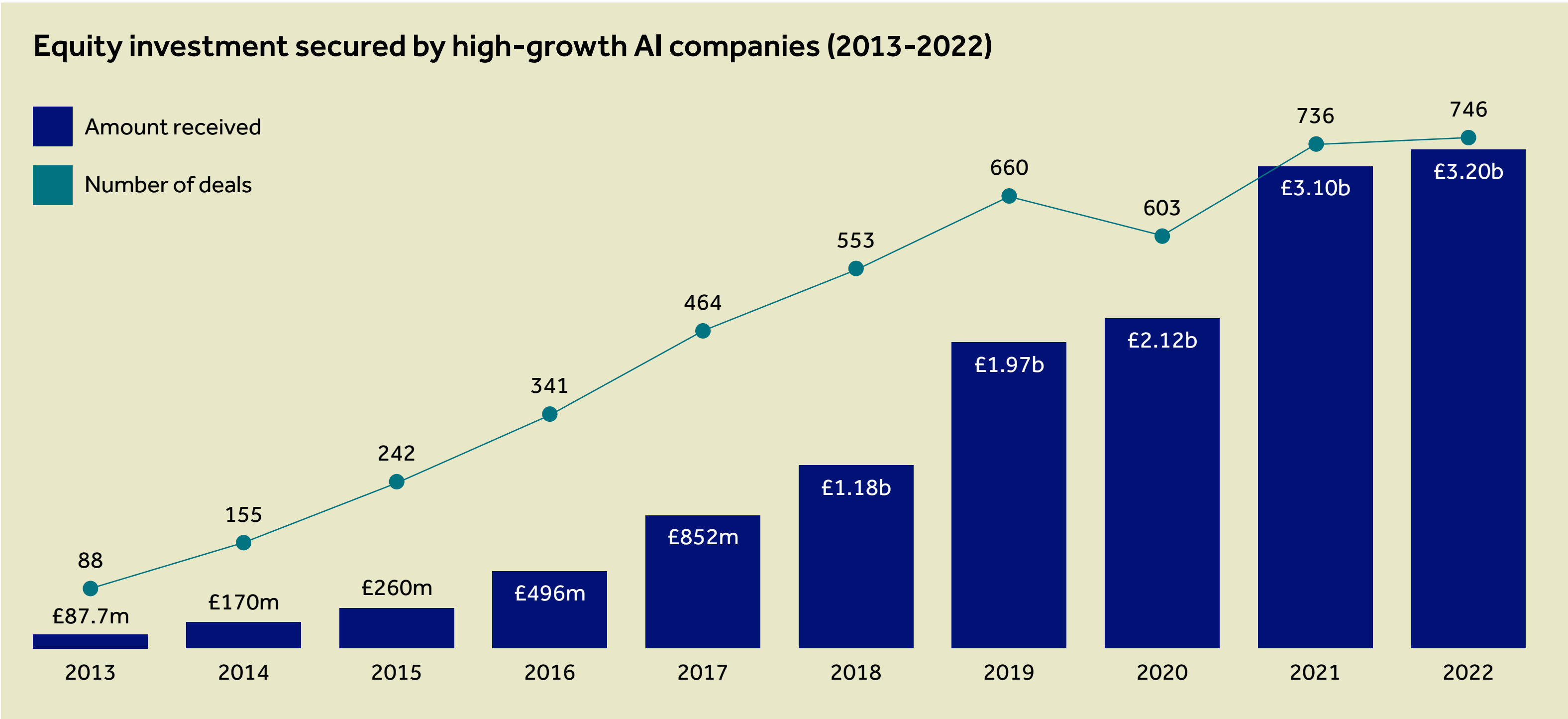
From 2013 to 2022, there has been a consistent annual rise in the number of deals made. The number of deals in 2021 and 2022 appear closely matched—736 and 746 respectively—pointing at the growing investor confidence in the industry. These investment volumes include a number of large deals, such as Cera’s £264m and Wayve’s £147m deal in 2022. Partially available data for 2023 reveals a lower deal number within the sector, aligning with levels observed in 2020. Nevertheless, as AI technologies continue to grow into mainstream applications, the investment landscape

is expected to present even more fertile ground for funding in the coming years.

Some of the top investees include OneTrust, a software development company specialising in security and privacy. It secured £699m via four rounds since 2013, with its largest totalling £224m in 2020. Similarly, Graphcore, a semiconductor firm engineering AI and machine learning accelerators, raised £528m in

total equity via nine deals.

Over the past decade, the UK’s AI sector has not only seen a steady uptick in domestic investment, but has also benefited significantly from foreign capital funding. This includes Insight Partners, a US-based private equity and venture capital fund, which has been involved in deals worth £860m in investment to UK-based high-growth AI companies since 2013.



Top investors

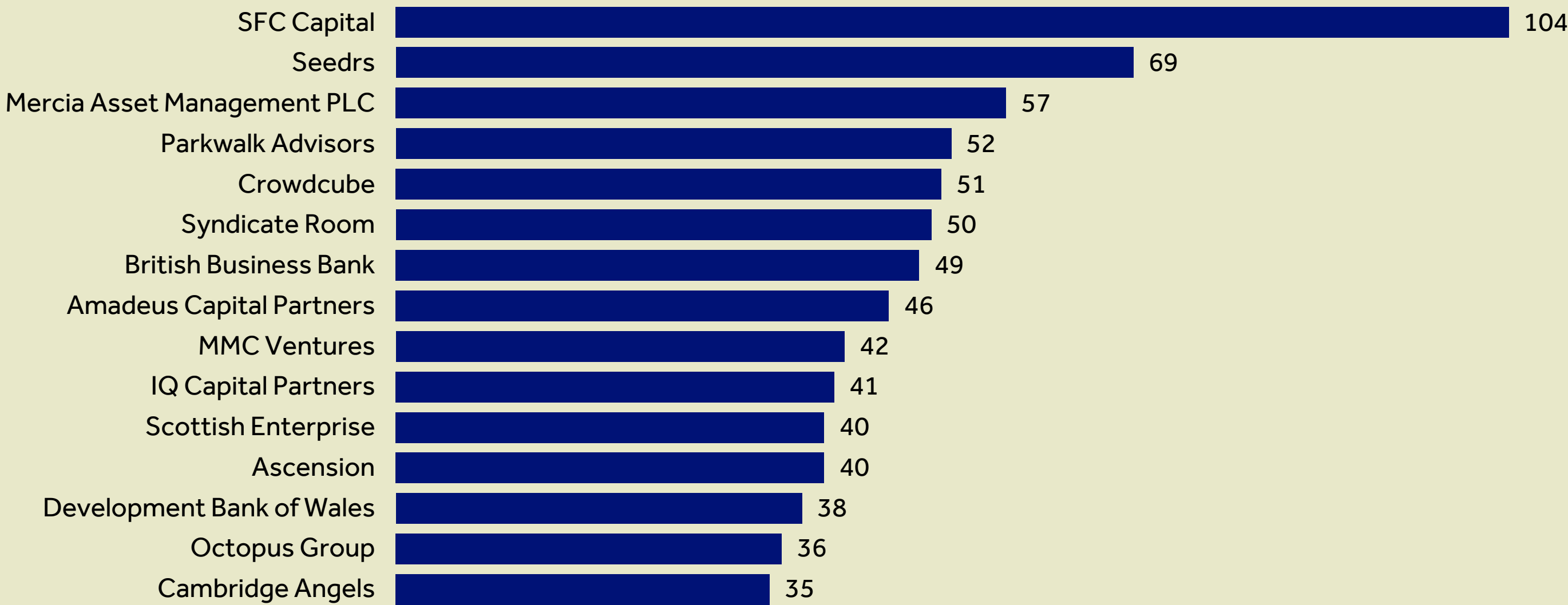
SFC Capital leads in terms of the number of equity deals into high-growth AI companies in the UK, and since 2013, has participated in 104 deals. SFC Capital invests into early-stage businesses eligible for the Seed Enterprise Investment Scheme (SEIS) and Enterprise Investment Scheme (EIS) funds. These figures hence underscore the important role of the schemes in supporting early-stage companies within the UK, as it can often prove difficult for these businesses to access sufficient sources of funding at such an early stage. SFC Capital’s broad investment portfolio primarily includes the AI Seed Fund, which has supported early-stage AI businesses through 15 deals since 2013. This includes an £18.8m fundraising round by debt capital market data platform 9fin in December 2022.

With a focus on early-stage businesses, Mercia Asset Management PLC is another fund investing in the high-growth AI sector. The fund tends to invest into regions outside of London and the South East, acknowledging available investment opportunities

outside of those regions. This approach is also aligned to the intended aim of the governmental [Digital Growth Grant](#). Mercia takes a proactive approach to cultivating talent, collaborating with 19 universities nationwide, including the universities of Edinburgh, St Andrews, and Warwick. These academic partnerships have led to successive spinout funding rounds, such as with Eyoto, a University of Aston’s spinout, which raised £19.5m across eight deals since its incorporation in 2013.

Additionally, crowdfunding platforms Seedrs and Crowdcube are significant contributors to the funding landscape within the high-growth AI sector. In 2022, they jointly participated in 13 deals, further solidifying the important role crowdfunding plays in the sector. Savings platform Chip secured funding via multiple crowdfunding rounds, with its most recent funding round landing in November 2022, totalling £2.06m.

Top fund managers by number of equity deals into high-growth AI companies (2013-2022)



Investor spotlight: MMC Ventures

“During the past decade, the European venture capital ecosystem has scaled new heights. Europe now represents nearly 20% of global VC funding, marking a significant increase over the past five years. The UK specifically is still the centre of European venture capital, with twice as much capital invested in the UK as the next two countries combined,” says Simon Menashy, Partner at MMC Ventures.

MMC Ventures is a venture capital fund investing in early-stage tech companies with a focus on enterprise AI, cloud and data infrastructure, fintech, and data-driven health. MMC has a large AI and data infrastructure portfolio, with investments including Synthesia, Signal AI, Red Sift and Ably. The fund has

also seen a recent string of exits including the \$400m sale of Current Health to Best Buy, the \$360m sale of Brightpearl to Sage and the £1.5bn acquisition of Interactive Investor by Abn. In.

“The AI market, which has been buoyed by the breakout successes of the past decade, has a growing generation of unicorn alumni becoming founders themselves. Talent is being redeployed, and we will continue to see this as the AI market continues to mature,” says Menashy. “The UK maintains a rich ecosystem of academia, with universities excelling in computer science and engineering. We consistently see global leaders in AI coming from these centres of excellence which are driving the next generation of AI innovation, both as advisors and partners to startups and also sometimes as their founders and executives”.

Having a defined strategy is important when investing in early-stage businesses operating within the AI sector. Menashy says, “Specific considerations we take into account when evaluating AI companies include the suitability of AI or machine learning to solve a problem, the scope for network effects through data and the scalability of AI solutions. Factors that are also important when evaluating AI companies are safety, security, and privacy, as well as compliance with existing regulations. Traditional points, on which

we place greater emphasis for the assessment of AI companies, include the quantifiability of ROI and the commerciality of management teams, which is a reflection of the dynamics of the AI market. We also think carefully about ethical issues such as potential bias and the risk of misuse.”

Securing investment within the AI sector may prove difficult due to competitiveness. Menashy advises entrepreneurs to “be clear on the problem that you are solving, the ROI it can deliver and for whom”.



“We have one of the largest AI portfolios in Europe, so a key differentiator we can offer is access to this community, sharing knowledge and best practice, and providing peer-to-peer support.”

Simon Menashy

Partner at MMC Ventures

Cera

£264m

amount raised

Aug 2022

Date

Cera operates healthcare hubs across the nation providing in-person home care, nursing, telehealth consultations, and prescription delivery services. Its digital app uses data analytics and machine learning to improve the way healthcare professionals monitor patients' health. The London-based eHealth company was established in 2015 and is currently led by CEO Dr Ben Maruthappu. Cera is an alumnus of the DigitalHealth. London Accelerator (2016), a programme focused on enhancing the adoption of healthcare technology in London's NHS. It subsequently participated in PwC's Scale Programme (2017), and GovStart (2017). Managed by PUBLIC, Govstart supports tech companies that have a strong public sector appliance. Since its establishment, Cera has raised £366m in investment via nine fundraising rounds, attracting investment from international firms such as US-based Jane Street and Kairos HQ.

Lendable

£210m

amount raised

Mar 2022

Date

Lendable is a London-based fintech unicorn, providing an online lending platform that leverages AI to expedite loan approvals. Established in 2014 by founder and CEO Martin Kissinger, the company has offices in London and New York to manage its expanding global presence. The firm provides a diversified portfolio of financial services, including personal loans, credit cards, and car financing. Lendable attended AG Elevate in 2018, an accelerator with a specialised focus in nurturing fintech startups. To date, the company has raised £216m in equity over eight rounds, with its biggest round in March 2022. This round totalled £210m in equity and was led by Ontario Teachers' Pension Plan. This latest fundraising effort catapulted the company's valuation to over £3.5b.

Investor spotlight: Cambridge Angels

"It is an exciting time to be in AI anywhere in the world," says Michelle Tempest, angel investor at Cambridge Angels. "The UK cannot rest on its laurels. The AI analogy is the space race, and I am searching for the AI global moonshot."

Cambridge Angels is a leading UK business angel network. Founded in 2001, the network invests in a range of start-up and scale-up businesses with a particular focus on deep-tech, healthtech, and other hi-tech sectors. Cambridge Angels' portfolio is mainly located in Cambridge, with some companies

spread across London and the UK. Over the past ten years, the network has backed over 110 portfolio companies, investing over £150m. This includes Healx's £43.9m deal in 2019, as well as semiconductor manufacturer Paragraf's £16.2m round in 2019.

"The UK's biggest strength is its wealth of startups", says Tempest. "The law will always lag behind innovation, and in a post-Brexit world, we need to leverage this as a strength to lead on global standards". The agility to set global standards could be the UK's ace, but as Tempest notes, this opportunity is yet to be fully seized, with the UK often waiting in the wings rather than taking centre stage.

When considering the UK's capabilities relative to global competitors, Tempest underscores the imperative need for a more expansive vision: "We cannot rely on history. The race is now, and to lead we need to be aware of what is happening in China, USA, India, to name a few." With the global summit in Bletchley, Tempest highlights the investment gap between nations like China, which pours billions into AI, compared to the UK's millions, is not just a gap in funding, but a chasm in future prospects.

Tempest's view on the UK's position in the AI world over the next decade is clear—it's a race, and to

lead, the UK must acknowledge and respond to the advancements of other nations rapidly and robustly. For entrepreneurs aiming to secure AI funding, she advises, "don't get distracted. AI is full of buzz, so know what problem your business is trying to solve. Keep your true beliefs, and keep updated around the latest research to help you solve issues you are passionate about. You need to lead by example, not by hype".

The changing regulatory landscape for AI is seen by Tempest as an opportunity for investment. Especially in the realm of 'AI for good,' these changes hint at potential growth areas that can mature as regulations become more defined.



"For start-ups a lot of my diligence is about the team. An investor has to bring something to the company, but the investor and team must work in harmony to enjoy the journey together."

Michelle Tempest

Angel investor at Cambridge Angels

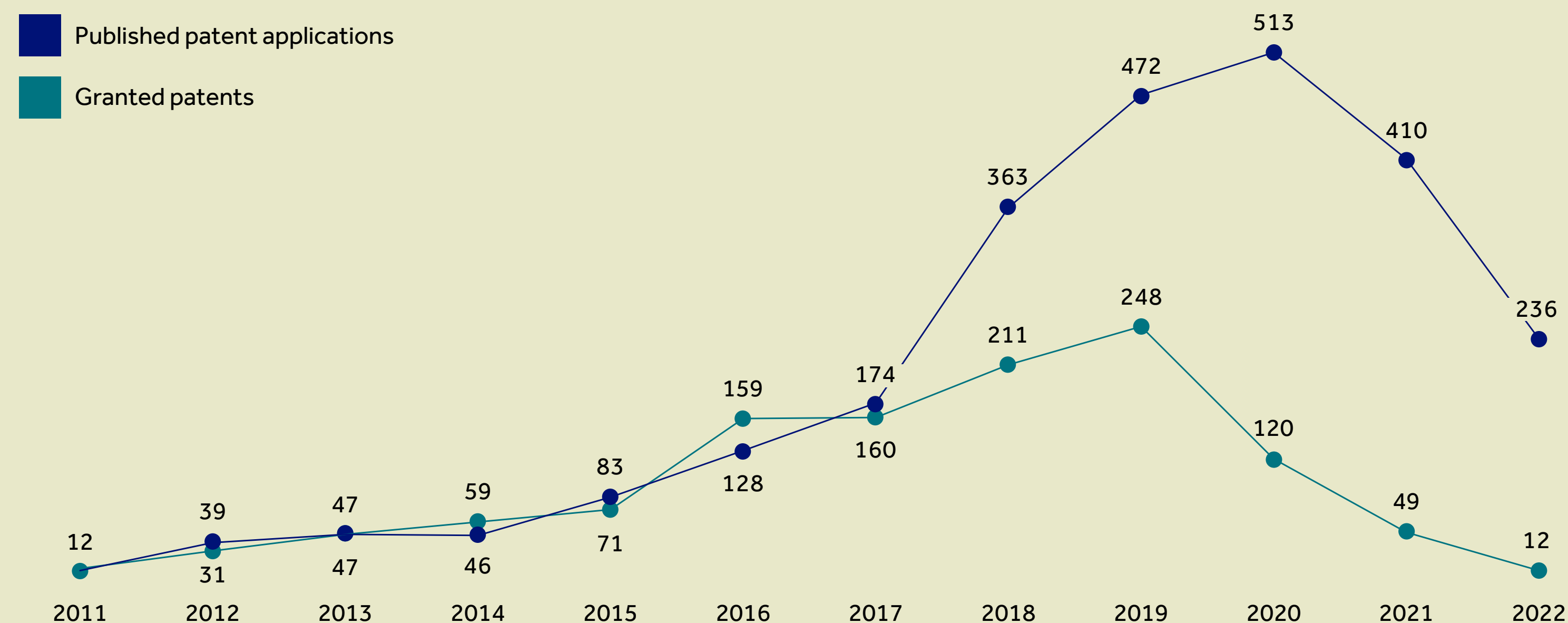
UK innovation

High-growth AI companies in the UK have significantly increased their domestic and international patenting since 2011, with a more than tenfold increase in both patent applications and granted patents between 2011 and 2019. The data on this page offers a preliminary view of patent activity by high-growth AI companies in the UK and is subject to change. The downturn in both published and granted applications from 2020 onward aligns with the 18-month latency period between the submission and publication of patent applications.

The surge in patent activity between 2011 and 2019 has been driven by a substantial increase in the number of active, high-growth AI companies in the UK. The sector expanded from 257 companies in 2011 to 2,063 in 2023. Widely publicised breakthroughs in AI since 2011 have also spurred investor interest in the associated technologies and helped fuel innovation by providing a strong foundation for entrepreneurs.

Part of the increase in patent activity may be due to increased investment in the sector, providing founders with the means (and potential pressure) to protect their IP in a robust manner. Such a move is not only a defensive strategy, but also a proactive approach to establish a strong market position and create barriers for would-be competitors.

Patent activity by high-growth AI companies (2011-2022)



Ecosystem

Amidst the various challenges within the industry, the UK government sets out regulatory policies to strike a balance between maintaining a competitive edge, mitigating constraints, and supporting the wider ecosystem. The distribution of spinouts across the UK is varied, with a total of 173 companies falling within this classification. Clusters are present in regions with academic institutions, including Oxford, Cambridge, and London. The industry faces challenges relating to access to skilled talent, diverse teams, and regulation. Different schemes have been put in place to address these challenges in the ecosystem.

Government and policy

The UK government has a pro-innovation approach to AI regulation, but deliberately aims to balance responsible innovation with public trust. This balance has been previously outlined in the [National AI Strategy](#), with the UK aiming to concentrate on investment, support functions and governance.³ This strategic posture is indicative of a broader commitment to maintain a competitive edge whilst mitigating the social and ethical pitfalls often associated with rapid technological adoption.

In the recent AI safety summit, the importance of regulation was emphasised. With further meetings in South Korea and France to be held in coming years, an international shared responsibility will allow actionable plans to be agreed upon and implemented. Prime Minister Rishi Sunak insisted that the UK's approach will ensure that safety issues are dealt with in a way that avoids hampering innovation in the sector. However, the challenge

remains: how to evolve these regulations at the same pace as AI technologies without causing regulatory lag or stifling innovation.

The government has invested more than £2.5bn since 2014, including nearly £600m towards the 2018 AI Sector Deal, which kickstarted growth of the AI landscape in the UK, as well as significant investments into the NHS AI Lab (£250m), and the Centre for Connected and Autonomous Vehicles. In the 2023 Spring Budget, the government pledged a further £900m to establish a new AI Research Resource to develop an exascale supercomputer to enhance computation capacity, and £100m to establish the Frontier AI Taskforce, which will now form the UK AI Safety Institute. An additional £54m investment was announced to develop AI research, with universities nationwide set to benefit from increased funding.

The financial commitment the UK government has set forward signal an optimistic stance on the future potential economic impact of AI technologies. However, whilst significant funding has been set for R&D and infrastructure, the allocation of public funding raises important considerations, including the extent to which early-stage startups will benefit in comparison to established tech giants.

The Department for Science, Innovation and Technology (DSIT) has launched an advisory service aimed at assisting new UK businesses in adhering to regulatory standards and facilitating their market entry. This service will consolidate the efforts of different regulatory bodies operating in sectors influenced by AI.

Startups stand to benefit from government-funded programmes like [BridgeAI](#), an initiative led by Innovate UK which aims to establish an AI innovation network within wider industry sectors with high-growth potential, such as construction, transportation and agriculture. Engaging with such initiatives not only offers financial support, but also provides access to valuable networks and resources crucial for the success of early-stage businesses.

³ [National AI Strategy](#)

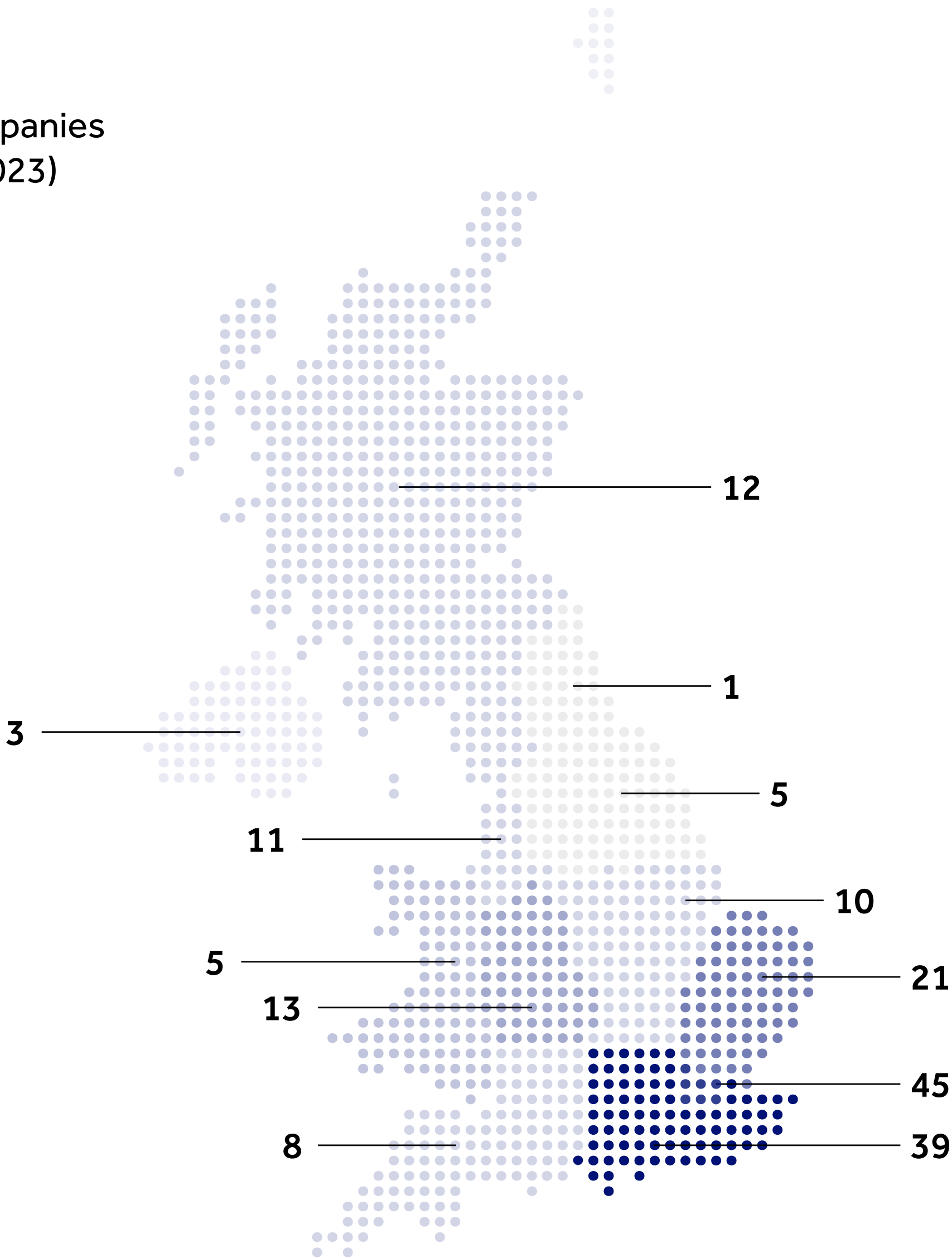
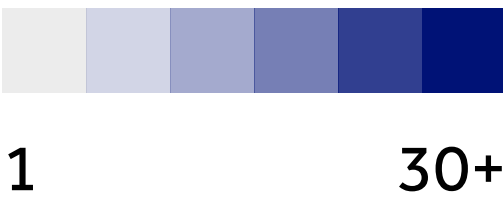
⁴ [Industrial Strategy, Artificial Intelligence Sector Deal](#)

Mapping spinouts

The UK boasts a large network of universities, supporting the ecosystem through skilled grads and the commercialisation of intellectual property (IP) through spinouts. Of the total high-growth AI ecosystem, university spinouts represent 7.47% of the total landscape, constituting 173 companies. Oxford University has the largest share, representing 8.5% of the total spinout cohort. The university’s portfolio includes Oxa, which develops software designed to power driverless vehicles. The company has secured £185m via five rounds of funding, as well as 14 grants totalling £14.6m. Out of the 32 companies in its portfolio, four have already exited via acquisition or IPO.

London shines as a central hub for AI spinouts, facilitated by the proximity of top institutions and research centres in the capital, including UCL and Imperial College. Meanwhile, Scotland also exhibits a robust presence, with a total of 12 companies. Scotland’s strong network of partnerships, including the Scottish AI Alliance, plays a pivotal role in nurturing the growth of AI enterprises in this innovative landscape.

Number of high-growth companies per UK region (September 2023)



Challenges within the ecosystem

As AI has evolved from its earliest beginnings in the 20th century to the dynamic landscape of the 2010s and beyond, it has played a pivotal role in shaping industries and societies. The UK has emerged as a thriving hub for AI innovation, with active contributions from companies, research institutions and innovation centres nationwide. Due to the importance of AI across a range of industries, the UK boasts a well-established support network committed to fostering innovation, providing funding, and offering guidance to small and medium-sized enterprises. Innovate UK is set to allocate up to £1m through its Creative Catalyst program, targeting companies engaged in AI-focused projects within the music industry⁵.

However, despite its remarkable growth and deeply-rooted support network, the AI industry is currently facing a range of multifaceted challenges, notably in addressing the skills gap and fostering diversity

within teams, particularly concerning female founders. The talent gap in the AI industry has also been exacerbated by insufficient public awareness regarding career prospects and vocational opportunities within the sector. This barrier of entry remains an obstacle, particularly for startups and small and medium sized enterprises (SMEs). There are a number of programmes providing support and advice, such as The Alan Turing Institute's initiative delivering bespoke AI and Data Science advice for SMEs.

One of the key challenges in the industry is the increasingly significant skills gap. AI companies consistently seek candidates with technical skills in areas such as machine learning, software development, and a general understanding of complex concepts like deep learning. According to a study by AND Digital⁶, the demand for digital skills is present in 23.5% of all job vacancies in the first seven months of 2022. However, the talent pool for these specialised disciplines remains limited and in high demand, often leading to higher salary expectations for these specialists. Consequently, smaller and medium-sized businesses might find themselves in direct competition with industry giants who can offer higher salaries and benefits.

Despite the sector's dynamic nature and an escalating demand for AI expertise, the widening skills gap is more troubling when seen through the lens of diversity and representation. Among the top 50 active AI firms, as assessed by equity raised, only 4.00% have founding teams comprising 50% or more female founders. A similar pattern emerges within leadership teams, where only 12% of companies within the top 50 have teams of 50% or more female directors. This underrepresentation is also reflected in the lack of ethnic diversity across AI teams nationwide. A 2020 study by Ipsos MORI⁷ revealed that 40% of the 118 firms studied had no employees from ethnic minority backgrounds.

The Department for Science, Innovation and Technology (DSIT) is attempting to manage this problem through innovations such as the Hyperlink Digital Growth Grant. This specific scheme is in place to help improve diversity and access to the industry, whilst continuing to foster innovation. Barclays Eagle Labs has also recently launched a new industry vertical focused on AI, led by Luke Christoforidis.

⁵ [Creative Catalyst: AI in the Music Industry](#)

⁶ [The nature of the UK's digital skills gap, AND Digital](#)

⁷ [Understanding the UK AI labour market: 2020. Ipsos MORI.](#)

Founders

Male founders overwhelmingly dominate the landscape. However, strides are being taken to foster greater diversity within entrepreneurial teams. Notably, founders between the ages of 30-39 and 40-49 constitute the largest demographic. Among the top 200 active companies, ranked by equity raised, a significant 41.7% of founders have master's degrees, closely followed by 30.7% with bachelor's qualifications. The universities of Oxford and Cambridge are the most frequented institutions among the cohort's attendees.

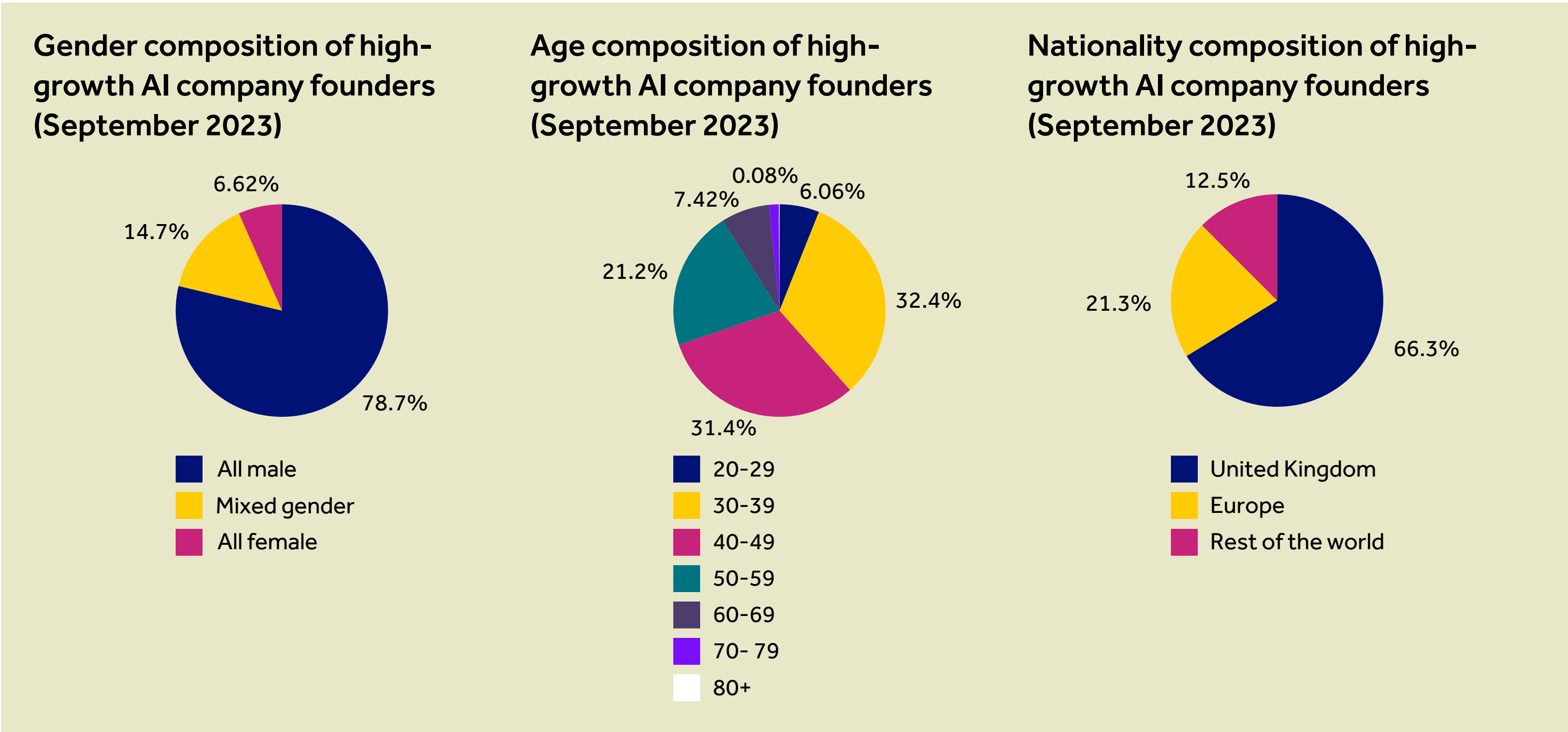
Founder diversity

The UK's high-growth AI sector exhibits some gender disparity among its founders, with a striking 78.7% of these companies featuring all-male founding teams. Of the remaining companies, just 6.62% have entirely female founding teams. This trend is more pronounced when contrasted with the broader landscape of UK high-growth companies, where the proportion of all-male founding teams is 57.4%. While this concentration of male founders may not be surprising given the historical gender imbalance in tech industries, it nevertheless adds to wider concerns about diversity and inclusivity within the AI sector. There have been efforts to mitigate this imbalance and promote a more diverse talent pool, including specialised accelerators for underrepresented founders. Examples include the previously referenced [Barclays Female Founder Accelerator](#) and [Barclays Black Founder Accelerator](#), both of which are funded by the [Digital Growth Grant](#).

Founders within the age brackets of 30-39 and 40-49 are nearly equally represented, comprising 32.4%

and 31.4% of the industry total, respectively. Founders in these age groups have witnessed the evolution of these technologies, allowing them to navigate AI innovation more adeptly. Interestingly, founders aged 50-59 account for 21.2% of the demographic, surpassing those in the 20-29 age range, who constitute 6.06% of founders. The limited presence of younger entrepreneurs in the high-growth AI sector could be indicative of barriers such as a lack of

mentorship, resources, and networking opportunities for younger talent. 66.3% of founders in active, high-growth AI companies are UK nationals. These proportions underscore the domestic origin of AI innovation but also hint at the scope for greater international diversity. However, as the sector matures, a more diverse array of founder nationalities is expected, reflecting the international reach of AI innovation.



Founder/leader educational backgrounds

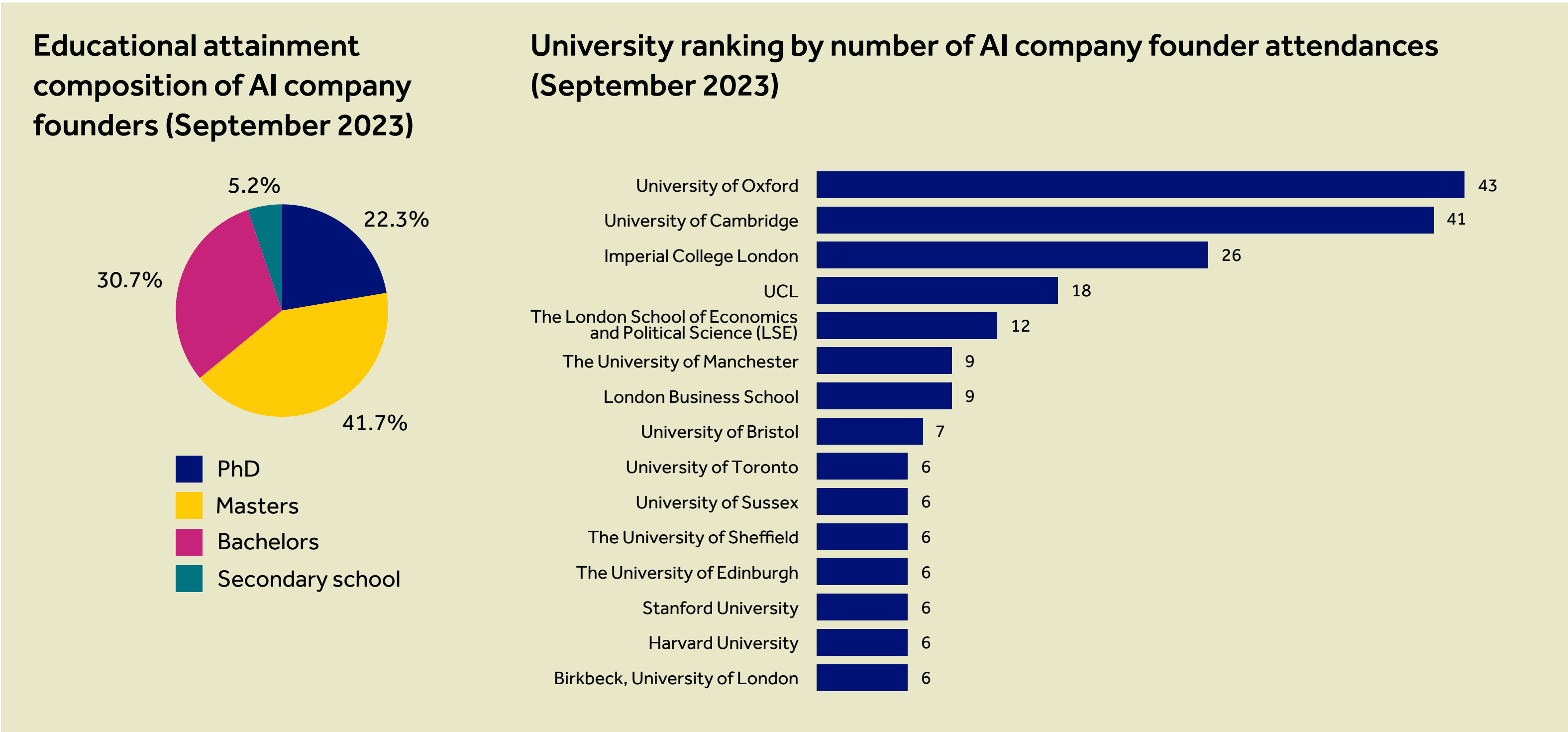
An evaluation of the top 200 active high-growth AI companies—measured by the highest equity funding raised from 2013-2022—reveals that the majority of founders have pursued advanced educational qualifications. A significant 41.7% of these founders have attained a master’s degree as their highest level of education, followed by bachelor’s degree holders at 30.7%. Meanwhile, 22.3% of founders hold PhDs—a figure that suggests specialised knowledge is highly valued in navigating the complex landscape of the AI sector.

The University of Oxford and the University of Cambridge are prominent academic institutions, with 43 and 41 founders respectively. This is perhaps not coincidental, considering that these institutions are renowned for their AI research programs, and as a result, are often the origin of spinout companies.

Their strategic locations also offer significant support to early-stage businesses. Following these universities are the London-based institutions, namely Imperial College London and University College London, with 26 and 16 founders respectively.

Despite the majority of founders attending UK-based universities, there is also significant representation from international institutions—the University of

Toronto, Harvard University, and Stanford University each had six founders attend their courses. The heavy concentration of founders from UK-based institutions, however, may indicate regional advantages such as better access to local talent pools, research collaborations, and funding opportunities, or students preferring to stay in the same region.



Methodology

Defining startup and high-growth companies

Beauhurst identifies high-growth startup companies using eight triggers (outlined on this page) that it believes suggests a company has high-growth potential. More detail on Beauhurst's tracking triggers is available via its website.

Active companies

'Active' companies refers to companies that are at the seed, venture, growth or established stages of evolution by Beauhurst analysis. The term excludes companies that are zombie or dead, or have exited via an IPO or acquisition.

Defining artificial intelligence

To qualify as an AI company for this report, the business must be engaged in the development or application of AI technologies. Artificial Intelligence (AI) refers to the technologies employed to perform tasks that would otherwise require human intelligence. This might encompass machine learning, deep learning, natural language processing, and robotics.

Equity investment

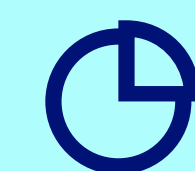
Equity investment refers to the purchase of shares within a company. This type of investment means buying into the equity (ownership) of the company rather than its debt. It is a common investment approach across various company types and stages, attracting a diverse range of investors. Venture capital firms typically engage in equity investments in early-stage startups, providing capital to fuel their growth. On the other hand, growth investors and private equity firms often target later-stage or more established companies, with private equity investors sometimes acquiring large, or even controlling, equity stakes.

To be included in our analysis, any investment must be:

- Some form of equity investment
- Secured by a UK company
- Issued between 1 January 2013 and 31 December 2022

The data included in this report is true as of 21 September 2023.

High growth triggers



Equity investment



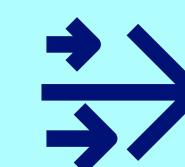
Academic spinouts



Scaleups



High-growth lists



Accelerator attendances



Major grant recipients



Management Buy-outs/
Buy-ins



Venture debt

Barclays Eagle Labs

Barclays Eagle Labs is a growing national network that provides business incubation, dedicated growth programmes, mentoring as well as co-working, and office space for ambitious high-growth businesses.

By cultivating a community of like-minded entrepreneurs and providing a collaborative work environment, access to peers, and opportunities to maximise growth through digital connections and growth programmes, curated events, and funding opportunities, Eagle Labs is able to help startups to grow at pace.

Eagle Labs also specialises in positively disrupting key industries by bringing together key corporate players, industry bodies, leading universities, and startups to enable rapid innovation and investment, by asking them to collaborate and currently have dedicated lawtech, healthtech, energytech and agritech industry-aligned programmes.

With various Eagle Labs dotted all across the UK and many more in the pipeline, our focus is to help to connect, educate, inspire, and accelerate ambitious UK businesses and entrepreneurs.

Find out more at labs.uk.barclays.

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Beaurohurst

Beaurohurst is a searchable database of the UK's high-growth companies.

Their platform is trusted by thousands of business professionals to help them find, research and monitor the most ambitious businesses in Britain. They collect data on every company that meets our unique criteria of high-growth; from equity-backed startups to accelerator attendees, academic spinouts and fast-growing scaleups.

Beaurohurst's data is also used by journalists and researchers who seek to understand the high-growth economy, and powering studies by major organisations – including the British Business Bank, HM Treasury and Innovate UK – to help them develop effective policy.

For more information and a free demonstration, visit beaurohurst.com

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