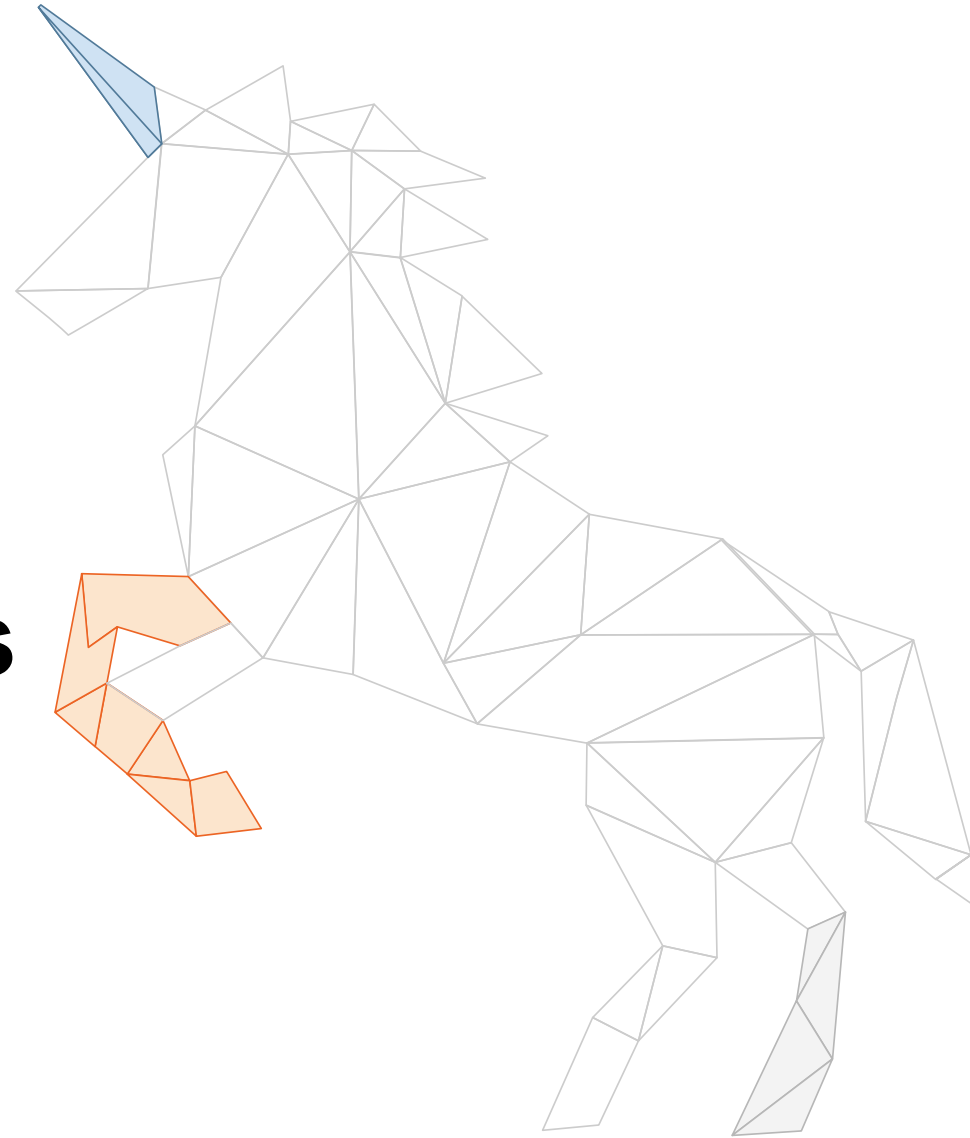
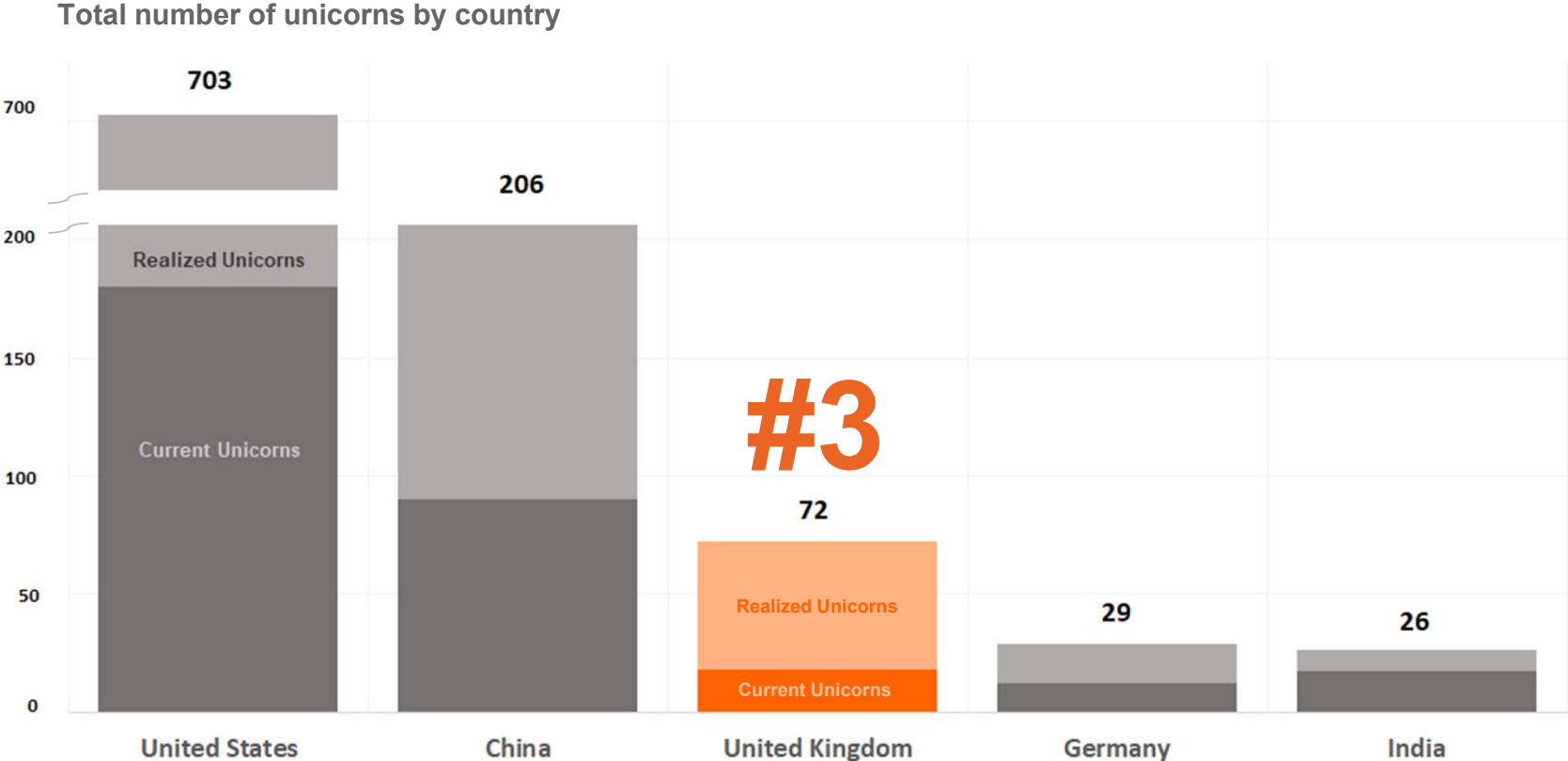


Mapping economic performance and ecosystem dynamics in UK Tech

Experience of countries in Eurasia. Challenges and Opportunities



3rd for Unicorns after US & China

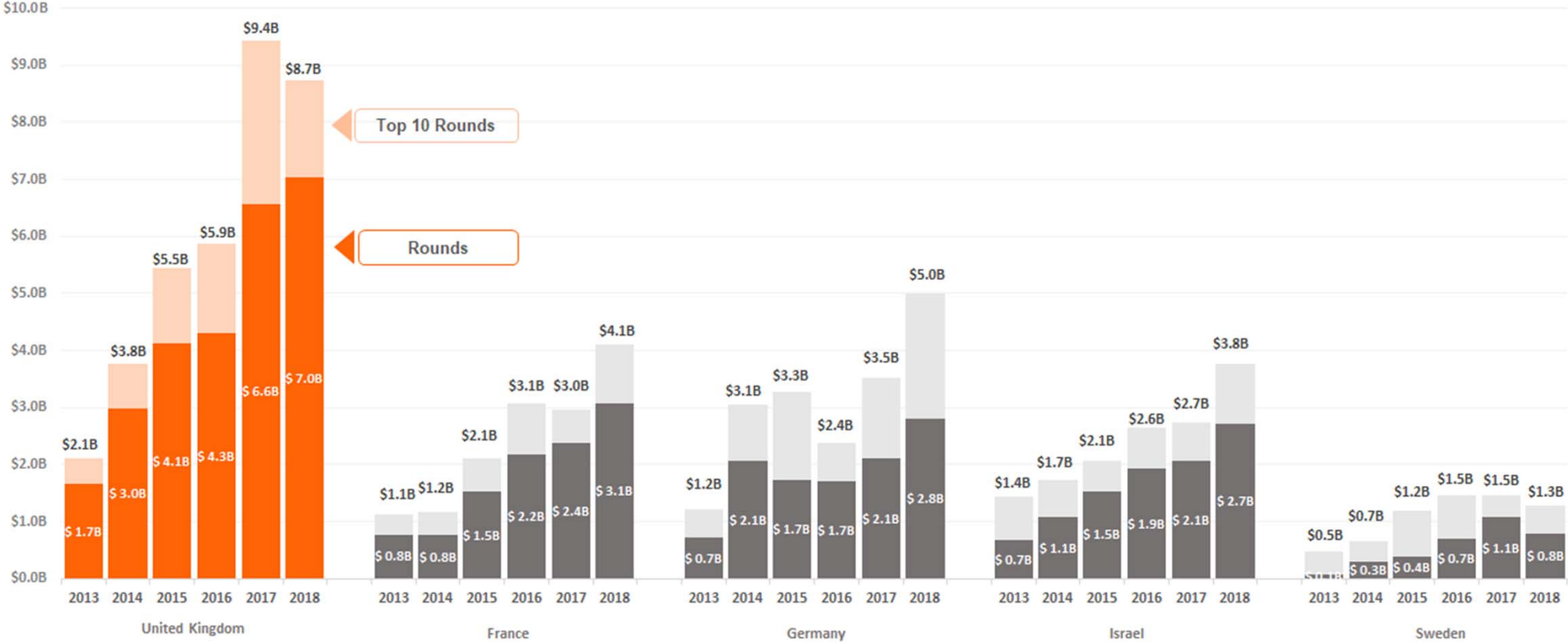


London is 2nd for FinTech Unicorns after Bay Area

Fintech Unicorns by city/area













UK venture investment rising, whilst other ecosystems see similar, or greater increases



All-time record VC investment in first half of 2019 in UK

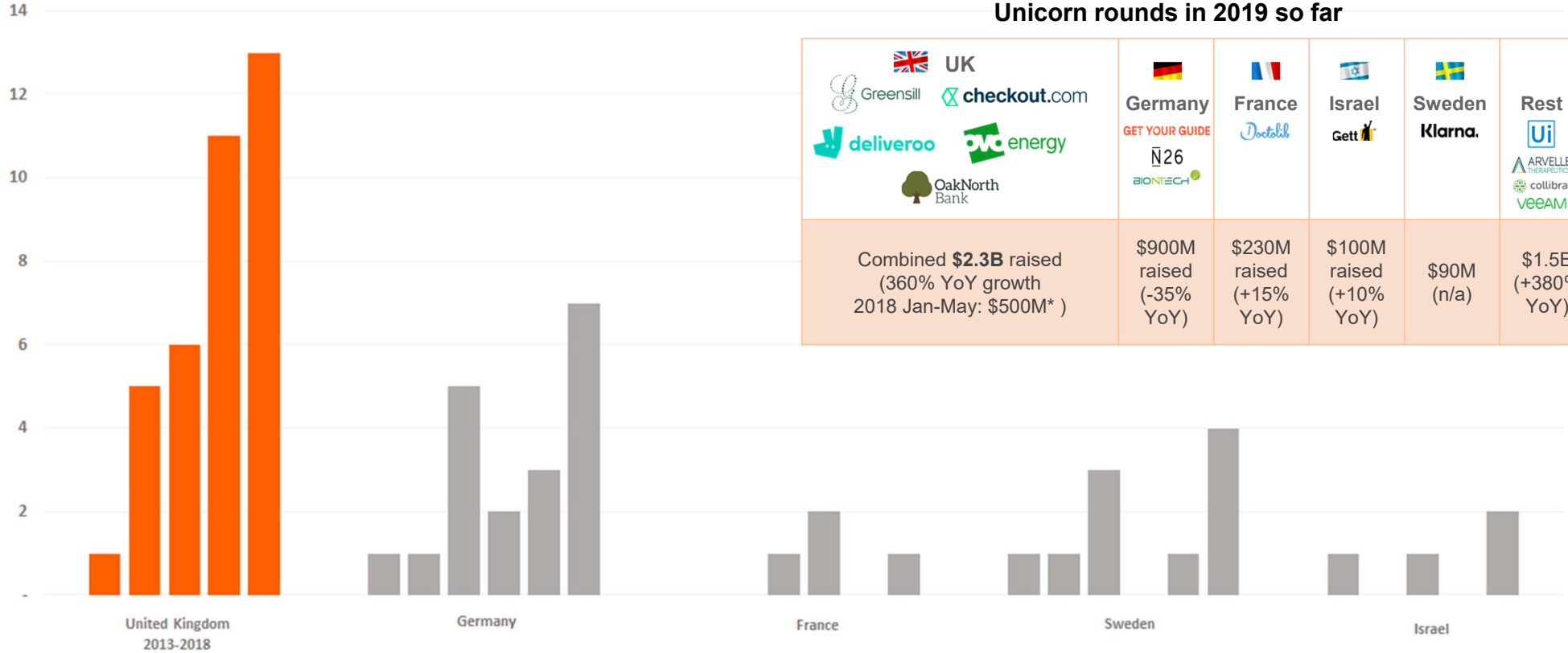


Notable investment rounds in 2019

 Greensill \$800M	 deliveroo \$575M
 OakNorth Lending for entrepreneurs. by entrepreneurs \$440M	 ovc energy \$240M
 checkout.com \$230M	 WorldRemit \$175M
 wejo \$100M	 STARLING BANK \$90M
 GOCARDLESS \$75M	 nutmeg \$54M

VC rounds at a valuation of \$1B+ topped at 13 in 2018 in the UK

Number of VC rounds at \$1 billion+ valuation



The UK is home to 4 of Europe's 5 leading unicorn hunter funds

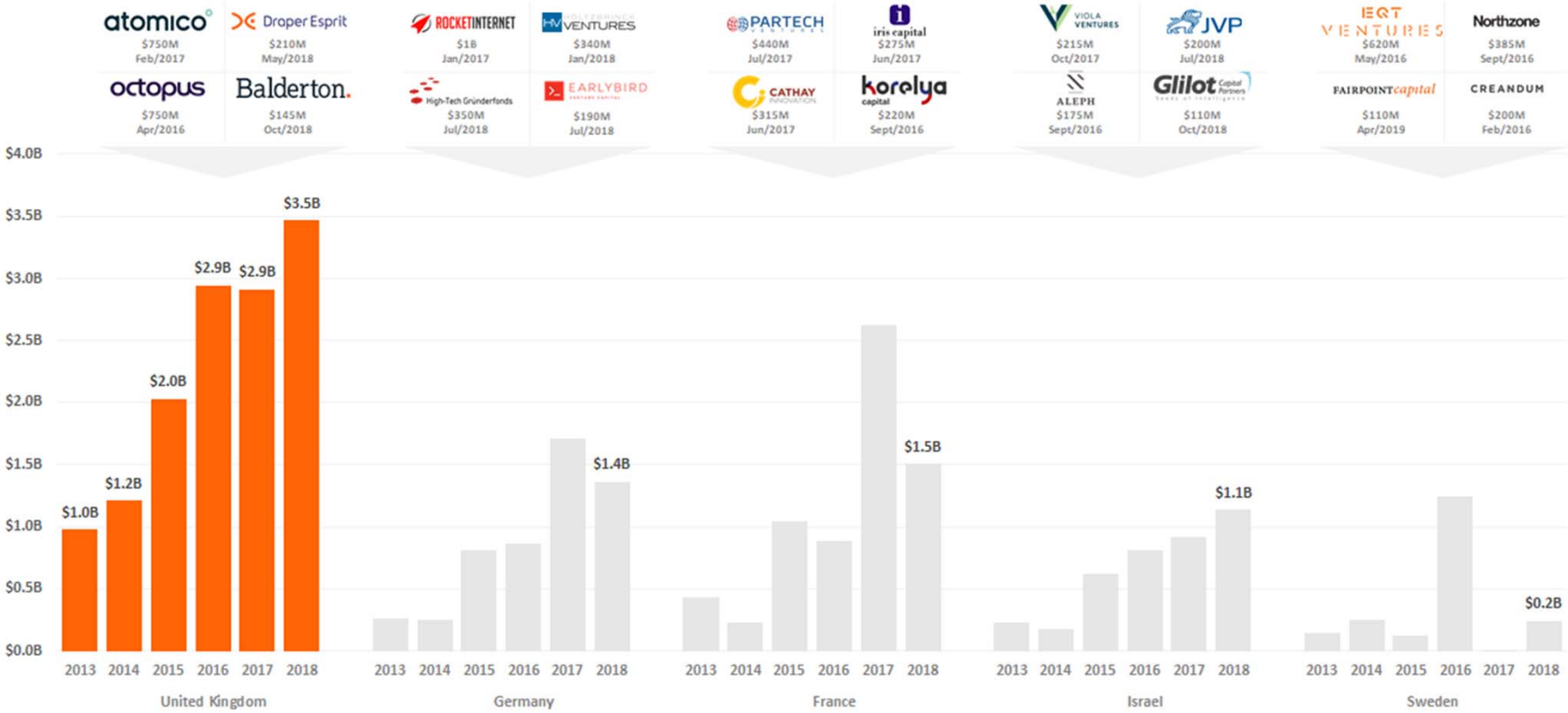
Investor	Location	\$1B+ exits		Current unicorns		European unicorns	Investment stage	Dilution factor*		Adjusted score
#1 Index Ventures	London	12	+	6	=	18	SERIES A	x30	=	540
#2 Accel Partners	London	6	+	8	=	14	SERIES A	x30	=	420
#3 LocalGlobe	London	1	+	2	=	3	SEED	x100	=	300
#3 Point Nine Capital	Berlin	2	+	1	=	3	SEED	x100	=	300
#3 Seedcamp	London	0	+	3	=	3	SEED	x100	=	300
#4 HV Holtzbrinck Ventures	Munich	5	+	4	=	9	SERIES A	x30	=	270
#5 Rocket Internet / GFC	Berlin	6	+	2	=	8	SERIES A	x30	=	240
#6 500 Startups	Mountain View	0	+	2	=	2	SEED	x100	=	200
#6 Cherry Ventures	Berlin	0	+	2	=	2	SEED	x100	=	200
#6 Episode 1 Ventures	London	2	+	0	=	2	SEED	x100	=	200
#6 Venrex Investment Management	London	1	+	1	=	2	SEED	x100	=	200
#6 Hoxton Ventures	London	0	+	2	=	2	SEED	x100	=	200
#7 Balderton Capital	London	3	+	3	=	6	SERIES A	x30	=	180
#8 Lakestar	Zurich	2	+	3	=	5	SERIES A	x30	=	150
#8 Tengelmann Ventures	Mülheim an der Ruhr	3	+	2	=	5	SERIES A	x30	=	150
#8 Atomico	London / Stockholm	2	+	3	=	5	SERIES A	x30	=	150
#8 Northzone	Stockholm	3	+	2	=	5	SERIES A	x30	=	150
#9 Battery Ventures	Boston	0	+	4	=	4	SERIES A	x30	=	120
#9 Access Industries	London	1	+	3	=	4	SERIES A	x30	=	120
#9 GP Bullhound	London	2	+	2	=	4	SERIES A	x30	=	120
#9 Woodford Investment Management	Oxford	1	+	3	=	4	SERIES A	x30	=	120
#9 General Atlantic	New York	6	+	6	=	12	LATE STAGE	x10	=	120
#9 SoftBank	Tokyo	3	+	9	=	12	LATE STAGE	x10	=	120
#9 83North	London	3	+	1	=	4	SERIES A	x30	=	120
#9 Andreessen Horowitz	Menlo Park	1	+	3	=	4	SERIES A	x30	=	120
#9 Scottish Equity Partners	London	4	+	0	=	4	SERIES A	x30	=	120
#10 KKR	New York	2	+	8	=	10	LATE STAGE	x10	=	100
#10 Insight Venture Partners	New York	3	+	7	=	10	LATE STAGE	x10	=	100
#11 Bpifrance	Paris	1	+	2	=	3	SERIES A	x30	=	90
#11 Creandum	Stockholm	2	+	1	=	3	SERIES A	x30	=	90

Source: Dealroom.co

* Dilution factor is adjusting for the stage at which each investor typically invests, and is based on the idea that a Seed round is typically valued at around \$10M, a series A round at \$30M, and a late stage round at \$100M.

Plenty of capital available and steadily increasing, as new VC funds raised were at an all-time high in 2018

VC funds raised by investor country



atomico \$750M Feb/2017	Droper Esprit \$210M May/2018	ROCKETINTERNET \$1B Jan/2017	HV VENTURES \$340M Jan/2018	PARTECH \$440M Jul/2017	irix capital \$275M Jun/2017	VIOLA VENTURES \$215M Oct/2017	JVP \$200M Jul/2018	IEQT VENTURES \$620M May/2016	Northzone \$385M Sept/2016
octopus \$750M Apr/2016	Balderton. \$145M Oct/2018	High-Tech Gründerfonds \$350M Jul/2018	EARLYBIRD \$190M Jul/2018	CATHAY \$315M Jun/2017	koralya capital \$220M Sept/2016	ALEPH \$175M Sept/2016	Gliot \$110M Oct/2018	FAIRPOINTcapital \$110M Apr/2019	CREANDUM \$200M Feb/2016

UK now has over 50,000 experienced unicorn talent

Realised unicorns: 54	Unrealised unicorns: 18	Future unicorns: 75

Experienced unicorn talent is spread across the UK and Europe

London: 45 unicorns



Cambridge: 5



Oxford: 5



Manchester: 5



Leeds: 2



Edinburgh: 3



Bristol: 2



Berlin: 10



Stockholm: 9



Paris: 9



Copenhagen: 5



Madrid: 3



Barcelona: 2



Hamburg: 2



Munich: 6



Amsterdam: 6



Dublin: 2



Aside from London, the UK counts five additional hubs with at least two unicorns, on par with major European tech cities



London



Oxbridge



Berlin



Paris



Amsterdam



Manchester



Edinburgh



Dublin



Leeds



Bristol

Unicorns created	45	10	10	9	6	5	3	2	2	2
Population	8.2M	290K	3.6M	2.2M	820K	510K	480K	550K	780K	530K
Investment per capita	\$570	\$1,160	\$660	\$1,160	\$490	\$123	\$170	\$860	\$176	\$620
Highest ranked university	8	1 & 2	62	72	59	54	27	117	139	76
Number of accelerators	146	22	42	51	18	10	6	14	10	2

UK has the ingredients of a global tech leader, but international, and pan Eurasian connections are essential for scaling

Track Record

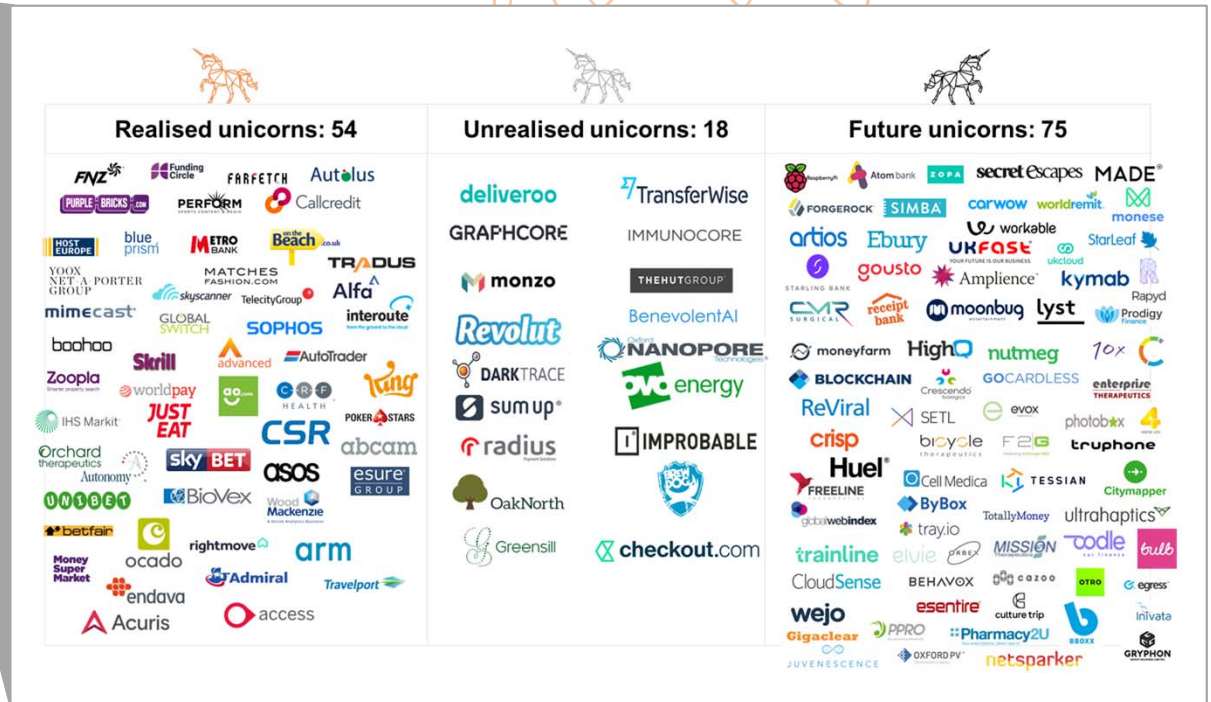
- Experienced Talent
- Multi-Stage Capital
- Service Providers

Massive Talent Pipeline

- Multi-Sector Experience
- Tech Talent
- World Class Universities
- Strong Regional Tech

Markets

- Consumers: English + 300 languages
- Enterprise
- Supportive Government policy
- International



Challenges exist, but are varied, and specific data on UK clusters is required

1	2	3	4	5	6	7	8	9	10	11	12
UK Cluster	Total Digital Economy Jobs (2017)	Unicorns	% Digital Economy jobs	Total Digital Economy Job openings (2018)	% City Jobs in Digital Tech	Median Salary - all Tech roles in Digital Economy (2018)	Digital Tech Salary vs City Average	Tech Jobs in all companies (2017)	Jobs in Digital Tech (2017)	Total Non-Tech Jobs in Digital Tech companies (2017)	Non-Tech Digital as % of Digital
London	574,562	45	27.36%	915,471	6%	£53,296	26.90%	256,082	318,480	62,398	10.86%
Manchester	100,520	5	4.79%	164,043	4%	£35,000	2.94%	38,414	9,704	39,154	38.95%
Reading	100,507		4.79%	48,742	33%	£40,000	8.11%	25,416	10,258	15,711	15.63%
Belfast	60,041		2.86%	16,853	20%	£40,000	17.65%	26,999	24,754	42,101	70.12%
Birmingham	59,131	1	2.82%	75,401	2%	£37,500	7.14%	41,550	17,581	23,969	40.54%
Cambridge	52,196	5	2.49%	85,679	50%	£39,000	2.63%	69,837	30,683	21,190	40.60%
Bristol	51,753	2	2.46%	86,247	5%	£35,520	4.47%	51,071	8,970	2,245	4.34%
Edinburgh	48,118	3	2.29%	44,879	4%	£42,500	14.86%	34,742	12,103	28,710	59.67%
Leeds	46,845	2	2.23%	88,042	6%	£35,000	9.38%	36,693	15,503	22,639	48.33%
Oxford	37,458	5	1.78%	72,844	25%	£36,000	5.88%	25,637	11,821	13,816	36.88%
Newcastle	35,674		1.70%	29,760	11%	£35,000	6.06%	42,398	58,109	15,158	42.49%
Sheffield	28,243		1.34%	26,059	2%	£32,500	8.33%	21,508	4,640	15,825	56.03%
Cardiff	26,148	1	1.25%	24,923	2%	£35,000	6.06%	22,034	6,209	16,868	64.51%

Notes: **2:** Total digital economy jobs include both tech and non tech roles in tech companies, and tech roles outside tech companies, like a software developer at Jaguar Land Rover. **3:** \$1bn valued tech companies in the given cluster. **4:** proportion of digital tech jobs that this city comprises of the UK total **5:** total number of advertised jobs through Adzuna's platform, upweighted to be representative of the volume of jobs recorded for tech by the Office for National Statistics **6:** % of jobs in city in Digital Tech **7:** the middle value for salaries for tech roles both in tech companies, and other companies. **8:** the difference between salaries for digital tech jobs and other roles in the cluster, where digital tech is on average 10% better paid. **9:** tech roles in all companies, such as a software developer at Monzo, or a data scientist at Jaguar Land Rover. **10:** all jobs in digital tech companies, including full stack developers as well as HR professionals, and legal for example. **11:** just the non tech roles, such as HR, finance or customer services. **12:** The proportion of non digital tech roles within tech companies by cluster



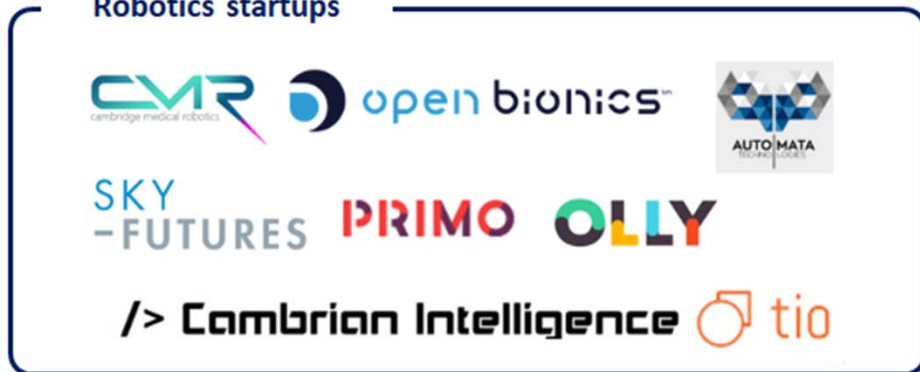
The UK's world leading research base and business environment has supported the emergence of new technology sectors such as AI, robotics, and quantum...

Quantum startups

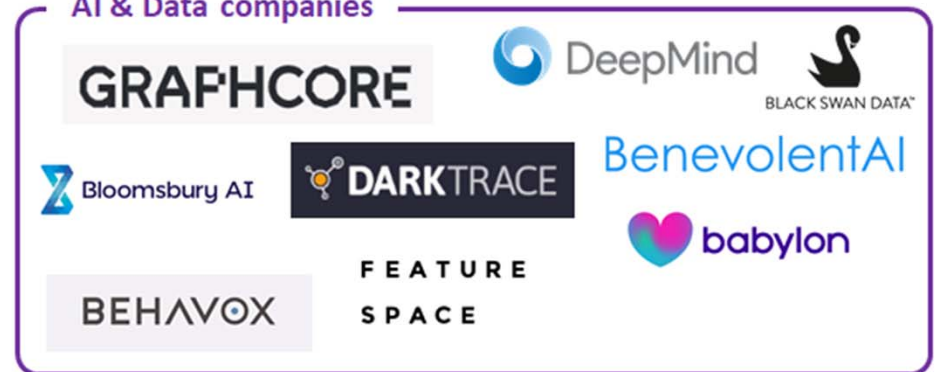


- These technologies have applications across multiple sectors, with the potential for transformative impacts on productivity.
- They are also technology areas where the UK has a strong base on which to build.

Robotics startups



AI & Data companies



Looking at AI, the sector is growing rapidly with centres of expertise developing across the country



Source: The Data City

How fast is the sector growing?

In total the UK is home to nearly 500 AI start-ups, representing a third of the European total and twice as many as the next most active country (MMC Ventures 2019).

VC investment into the sector leapt almost six fold between 2014-18 to \$1.3 billion. As a result, last year UK AI companies raised almost double the amount of those in France and Germany combined. (Tech Nation 2019).

Where are AI clusters in the UK?

The map shows the clustering of AI & data activity across the UK

The South East and London represent a third of activity

But emerging clusters can be seen across the UK, for example in Manchester & Burnley; Birmingham & Coventry; and Leicester, Nottingham & Derby

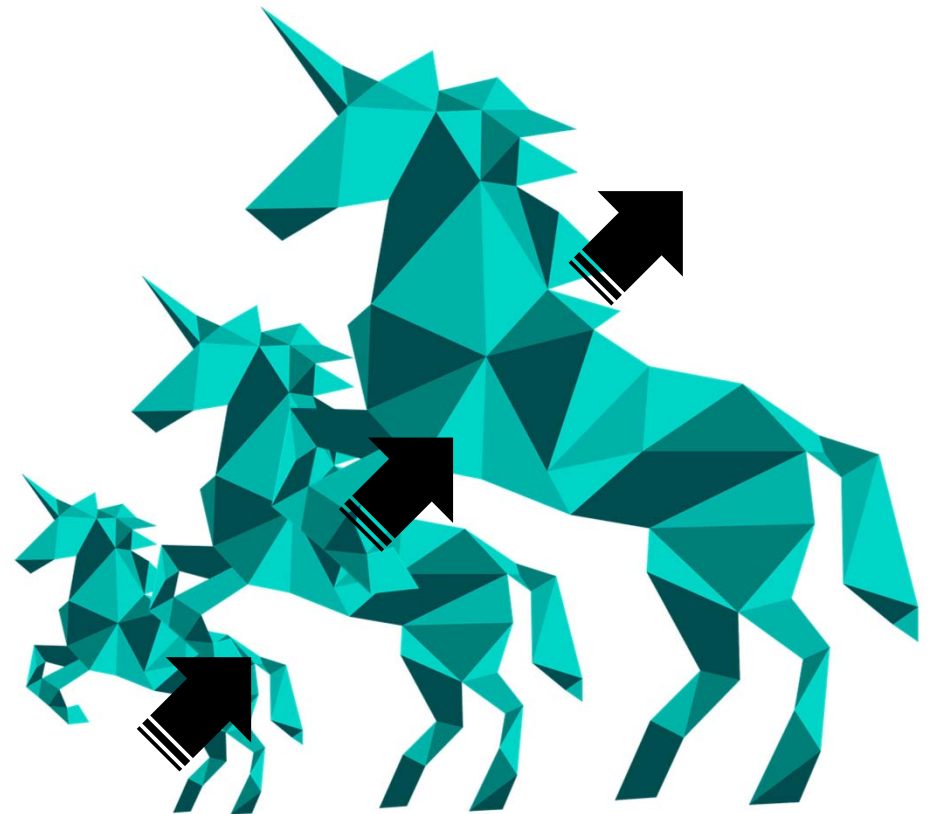
Growing a Tech Unicorn

1
Talent and
expertise

3
Infrastructure
and ecosystem

2
Smart Capital

4
Public policy
leadership



1. Creative talent and expertise - UK has a talent pool of 50,000+ working in unicorn companies driving mindset, attitude, behaviours, values as well as skills



Education

- 4 of the world's top 10 universities are based in the UK
- £110m to fund 200 new industry AI masters places at UK universities, 1,000 PhD places at 16 AI centres for doctoral training, 5 AI research fellowships in partnership with the Alan Turing Institute
- £13.5 million to fund 2,500 places for AI and data conversion courses

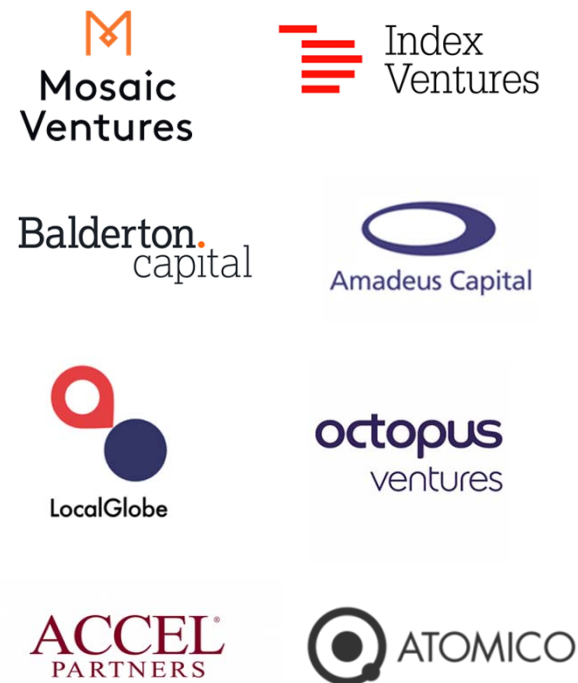
Large labour force

- The labour force is the second largest in the Europe
- The UK is the top destination in Europe for tech talent and is home to the largest European tech community
- 22% of all international movers to and within Europe come to the UK.

Visas

- Tech Nation Exceptional Talent Visa
- two new visa routes which benefit tech specialists: the Start-up route for those starting a business for the first time and the Innovator route for more experienced business people with funds to invest in their firm

2. Smart Capital - funds at every stage and built by entrepreneurs not bankers - reflecting the maturity of the ecosystem



3. Infrastructure and ecosystem - aside from London, the UK counts five additional hubs with at least two unicorns, on par with major European tech



	London	Oxbridge	Berlin	Paris	Manchester	Amsterdam	Edinburgh	Dublin	Leeds
Unicorns created	38	9	10	6	5	7	2	3	2
Population	8.2M	290K	3.5M	2.2M	510K	821K	489K	565K	780K
Investment per capita	\$561	\$20,300	\$630	\$1000	\$200	\$470	\$180	\$840	\$90
Highest ranked university	8	1 & 2	62	72	54	59	27	117	139
Number of accelerators	146	22	54	51	10	28	6	14	10

4. Public policy leadership

Policy environment

OECD ranks the UK one of the best places to start a business & World Bank ranks UK eighth for world's best corporate environments

Government's modern Industrial Strategy

London is an ideal listing venue for SE Asian companies - allows access to an international base of investors

'Sandbox' schemes emulated worldwide - adopted by 20 countries +

Regulation for the Fourth Industrial Revolution - plans to transform the UK's regulatory environment to enable tech-driven innovations

trainline

Funding Circle



London
Stock Exchange

Taxation

Lowest corporation tax rate in the G20

R&D tax credits

The Patent Box Scheme - lowers Corporation Tax to 10% on profits from the development of patents and other intellectual property

The Seed Enterprise Investment Scheme (SEIS) - 50% income tax relief for UK taxpayers investing in qualifying startups for the first £100,000 seed investment

The Enterprise Investment Scheme (EIS) - 30% income tax relief for private investors

Looking ahead, the UK and Europe have a steady supply of future billion dollar companies

Country	Count	Share	Valuation (\$B)	Selected:
United Kingdom	75	30%	26.5	
France	34	14%	10.5	
Israel	32	13%	10.8	
Germany	31	13%	10.0	
Sweden	11	4%	3.5	
Switzerland	11	4%	4.1	
Spain	9	4%	2.2	
Ireland	8	3%	2.0	
Netherlands	7	3%	2.4	
Denmark	7	3%	1.8	
Russia	5	2%	1.4	
Other	17	7%	6.2	

Access the underlying data on datacommons.technation.io

