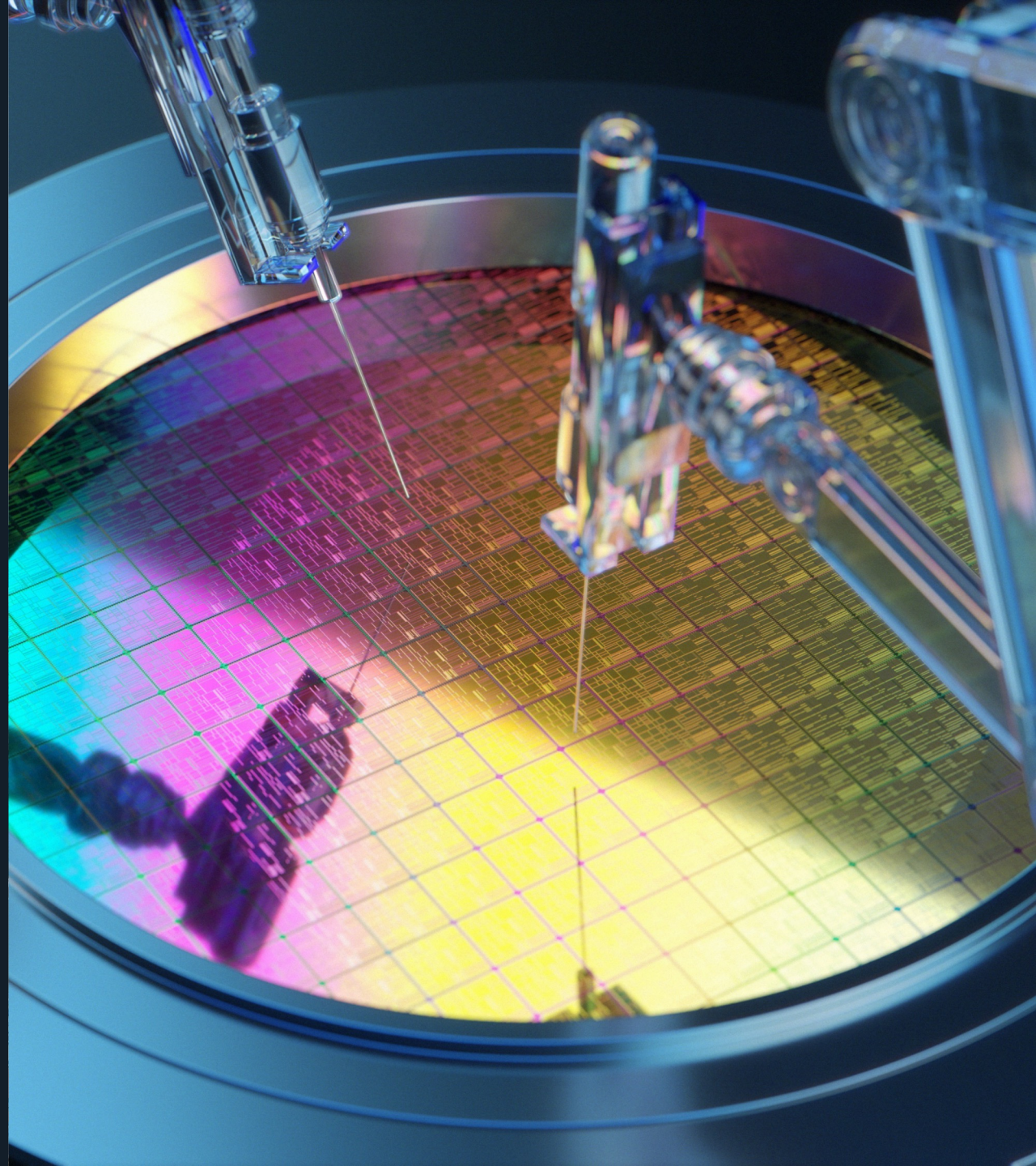
Oxford’s ecosystem: global perspectives, prospects and priorities

February 2026

JLL

The Business of Cities



Foreword

This report offers a timely and rigorous perspective on Oxford's innovation ecosystem, combining global benchmarking with a clear articulation of the constraints now facing future growth. The Crown Estate, Pioneer Group, and Oxford Science Enterprises strongly support the priorities identified. We are committed, through our partnership, to playing an active role in addressing issues of capacity, connectivity, and delivery, working with public, institutional, and private partners to help Oxford realise its full potential.

THE CROWN ESTATE

Pioneer

OXFORD SCIENCE ENTERPRISES

This review

Prepared in 2025, this review assesses Oxford's performance and prospects through benchmarking against peer global markets, and case study insights and implications from international comparators and precedents. The analysis is informed by data-driven benchmarking, interviews across key public, private and institutional stakeholders in Oxford, and dialogues with selected representatives in peer international city-regions.

The analysis is structured in four parts.

1

Benchmarking Oxford against peer global markets

Based on economic, sectoral and built environment factors

Bay Area	Basel
Beijing	Cambridge (UK)
Boston	Durham (US)
London	Eindhoven
Los Angeles	Leuven
New York	Lund
Paris	New Haven
Philadelphia	Uppsala
San Diego	Waterloo (CA)
Seoul	Zurich

2

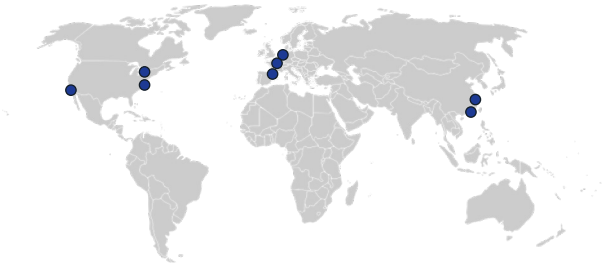
Identifying Oxford's strengths and gaps

Enterprise
Established sectors
Frontier technologies
Productivity
Domestic and global competition
Diversification
Land use, planning and infrastructure

3

International lessons and learnings

Comparator ecosystems
City region policies
Investment attraction and coordination



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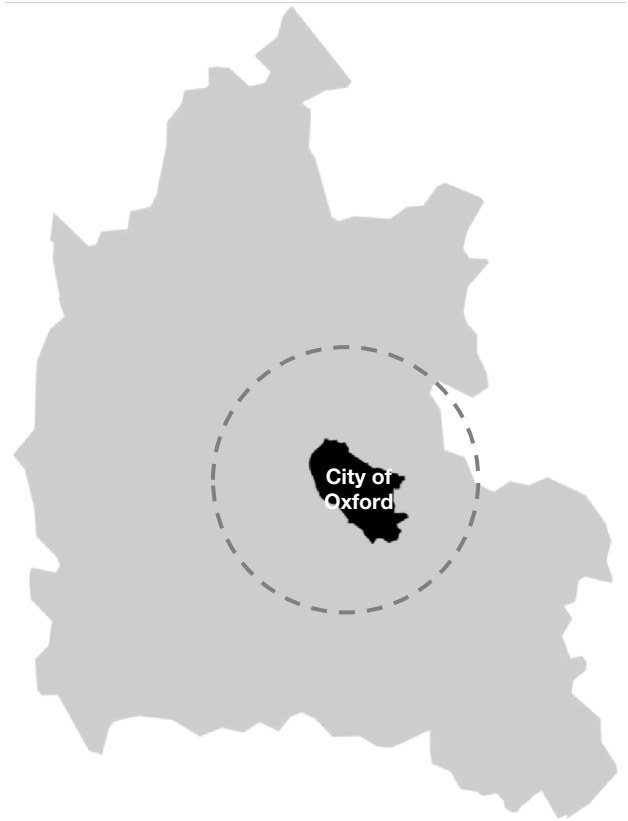
Implications and priorities for Oxford

Source: The Business of Cities, JLL Research – *Oxford is defined throughout this analysis as the County of Oxfordshire and is compared with functional urban areas as best appropriate*

Oxford in global context

Oxford in the world of cities



Oxford in a world of 12,000 cities	
Population rank globally	3,520th
Pace of population growth	3,682nd
Productivity rank among OECD cities	349th
Conferences and conventions, global rank	117th
Global city calibre, global rank	114th

Sources: The Business of Cities, UN World Urbanisation Prospects, OECD, ICCA, Oxford Economics

Inherited strengths

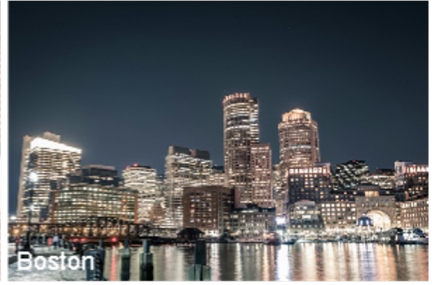
World-class assets
- World no.1 University for eight consecutive years.
- Rated home to Western Europe's no.1 concentration of science research facilities
- UK no. 1 green city

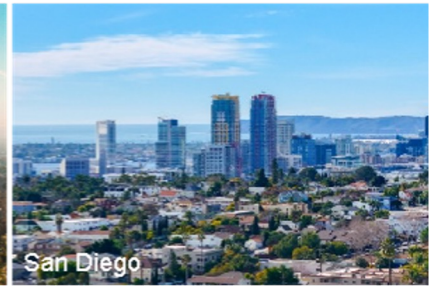
Enduring multi-dimensional appeal to talent and visitors
- 6th in Europe for urban fabric and liveability
- Top 10 small city in Europe for human capital
- 3rd UK city for share of international visitors

Sources: THES, OxLEP, ENDS, Resonance, fDi Markets, Centre for Cities

Oxford combines the physical characteristics of compact knowledge-intensive university cities…

…with the ecosystem and value creation attributes of major global cities





Oxford is a specialist player in a crowded innovation landscape, now recording Global Top 10 scores in many domains

All round Global Top 10		Startup Genome Compass Global Report	Pitchbook Global VC Ecosystem	Nature Research Global Innovation Hubs Index	Cornell Univ. Top 100 S&T Clusters	Dealroom Tech Ecosystems Global Champions	Dealroom Density Leaders
1	Bay Area	1	1	1	3	1	1
2	Boston	5	4	4	9	3	2
3	New York	2	2	2	7	2	8
4	London	3	6	5	8	6	9
5	Tokyo	11	7	9	2	23	162
6	Los Angeles	7	3	13	10	8	30
7	San Diego	19	23	18	14	9	12
8	Beijing	5	9	3	4	15	56
9	Paris	12	13	8	12	4	24
10	Seoul	8	11	11	5	7	87

	Knowledge Creation	Perceived quality of technology and innovation work	Median Size of Funding, Series A&B	Science & Tech Talent concentration	Top S&T Intensity	Breakout Stage VC per resident	Top unis for supporting digital entrepreneur-ship	Overall Density Leaders enterprise performance	External perception of technology innovation	Rate of successful alumni founders	Late-stage VC per resident
Source/Index	Nature Research	Long Finance	MedCity	Nature Research	Cornell Univ	Dealroom	Times Higher Education	Dealroom	Long Finance	Dealroom	Dealroom
Date	2025	2025	2024	2025	2025	2025	2025	2025	2025	2025	2025
Number of cities	12	76	20	12	100	290	150	223	76	202	223
Oxford	**1st**	**2nd**	**3rd**	**3rd**	**5th**	**5th**	**6th**	**7th**	**7th**	**13th**	**15th**

Source: The Business of Cities, JLL Research

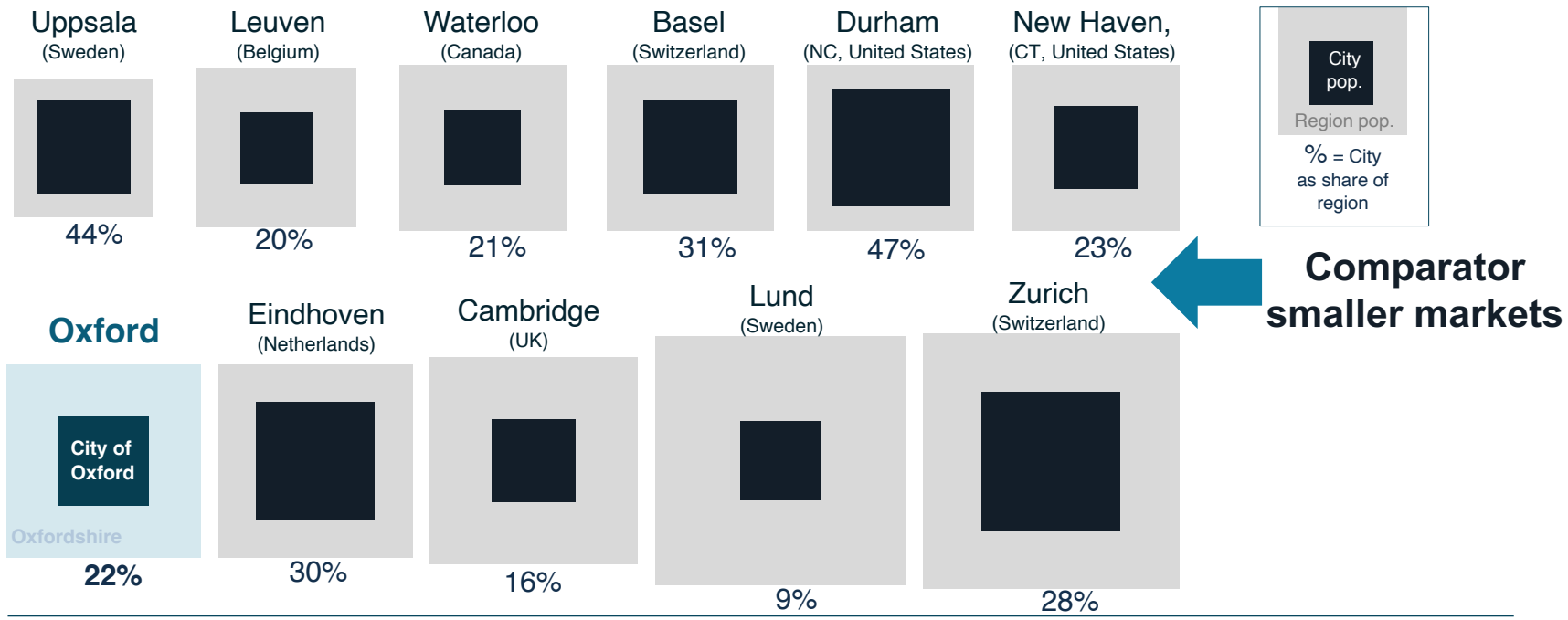
Why does this matter for Oxford?

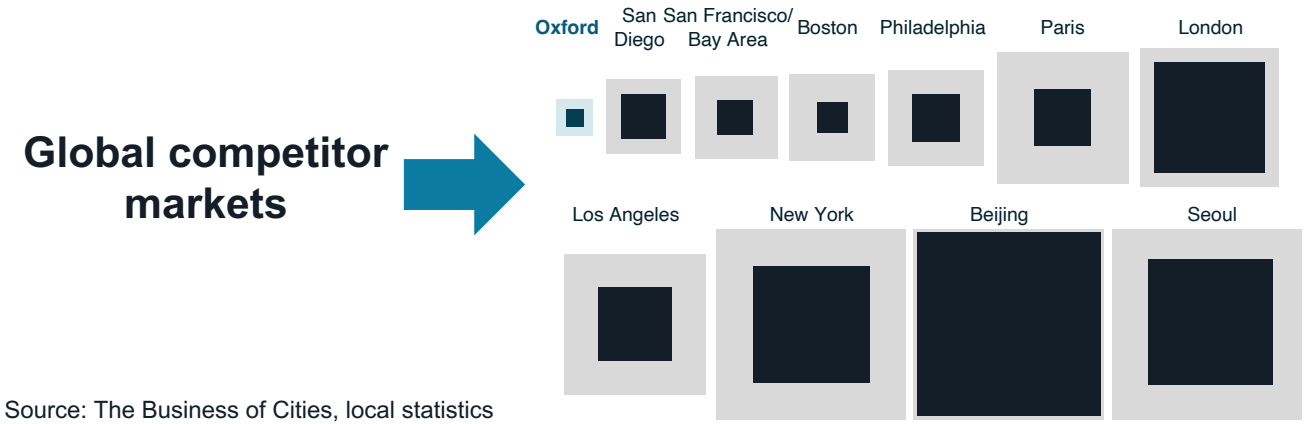
The top-rated international ecosystems benefit from the market and investment scale of being large centres of population, business and talent. On scale measures Oxford's aggregate capacity is not in a position to compete directly with these global leaders, although it is clearly in the global Top 50

Instead, Oxford's ecosystem is better understood as one of the 10 strongest when it comes to quality and intensity.

Oxford excels in measures of concentration of scientific excellence and founder success. Here it is now regularly picking up global Top 10 positions not only on the research side but also the business development, aided and accelerated by OSE's success over the past 10 years.

Oxford is a small city economy within a wider regional ecosystem





Source: The Business of Cities, local statistics

Why does this matter for Oxford?

Oxford is in a special cohort of places that shares the attributes of being a small core city (less than 500,000 people) with at least one world top 50 university in one or more strategic STEM disciplines.

Like its small counterparts, Oxford is a city surrounded by a wider region. The City's borders are tightly bounded. In fact, the City comprises just 22% of the region (Oxfordshire) population. This is a smaller share than most comparable regions.

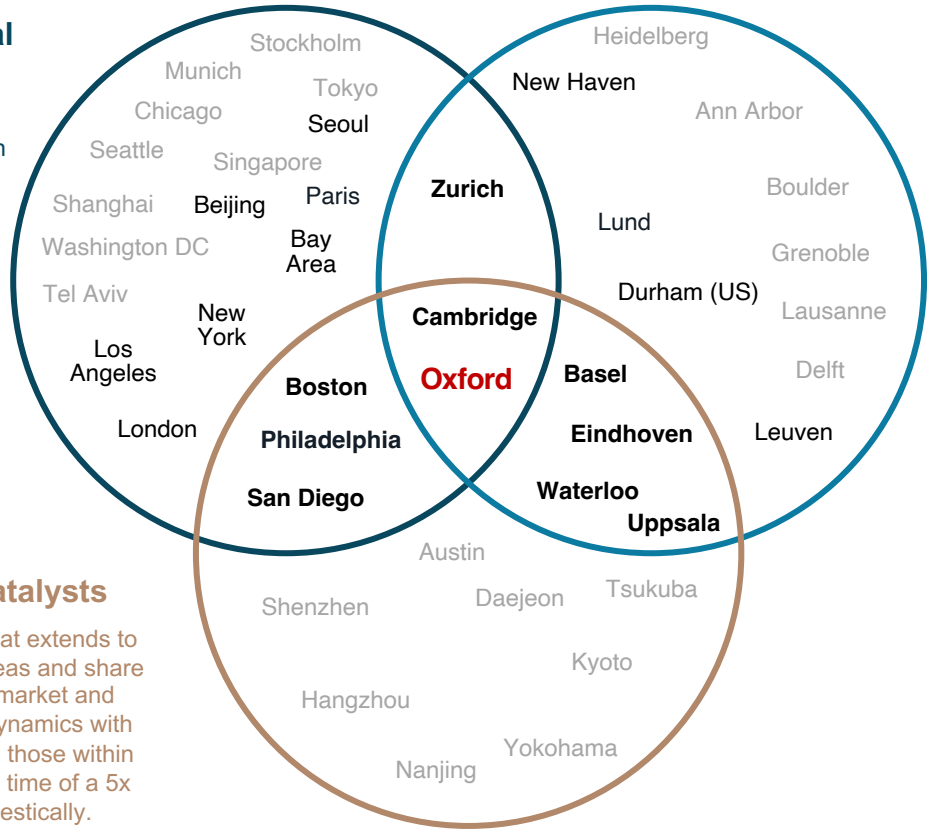
This means that Oxford's ecosystem is more distributed beyond its "borders", placing more onus on coordination and connectivity. As more industries rely on proximity and urban amenity, Oxford's ecosystem relies on governance and leadership that explicitly supports and enables the urban economy to grow.

Meanwhile, Oxford's city and region scale is dwarfed 10-20x by the world's top innovation ecosystems. As a population base Oxfordshire is scarcely one tenth the size of Boston and the Bay Area and is only 3-4% of the size of the largest regions in East Asia and North America. This presents imperatives for the city-region to specialise, compete effectively, and borrow scale.

As Oxford is both a global calibre ecosystem and a small specialist city-region, it has peer groups of competitors and comparators

Competitive global innovation hubs

Competitors in terms of global impact, recognition and investment flows. Defined as top 20 ecosystems globally.



Regional catalysts

Cities with reach that extends to proximate urban areas and share spillover, labour market and business growth dynamics with Oxford. Defined as those within 200km commuting time of a 5x larger city domestically.

Pocket-sized specialists

Comparable in terms of size, setting and university as a driver of growth. Defined as core cities of under 600,000 people with world-leading STEM universities.

In this review, we explore Oxford's prospects against two core peer groups

Bay Area	New York
Beijing	Paris
Boston	Philadelphia
London	San Diego
Los Angeles	Seoul

↑ **Competitive global innovation hubs**

Pocket-sized specialists ↓

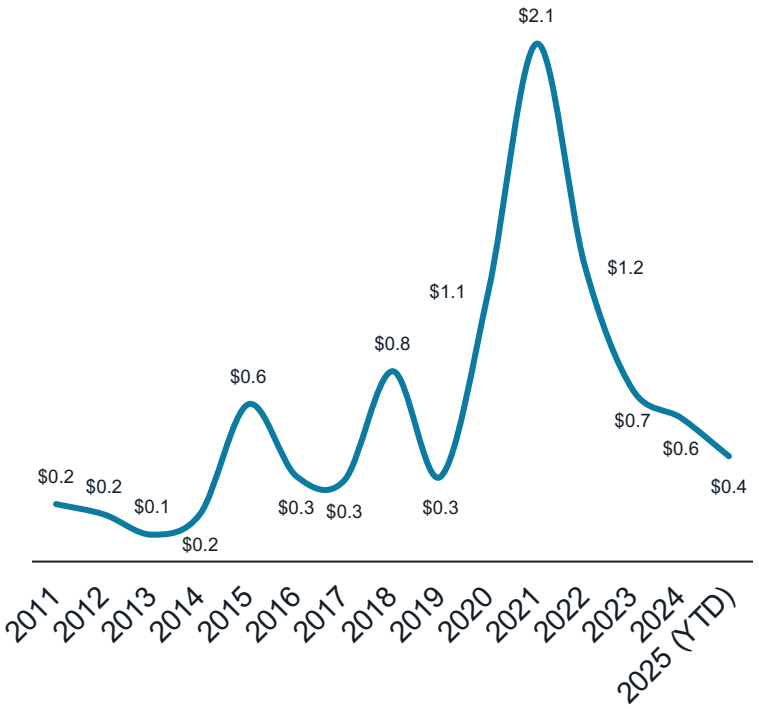
Basel	Lund
Cambridge	New Haven
Durham (US)	Uppsala
Eindhoven	Waterloo
Leuven	Zurich

Source: The Business of Cities

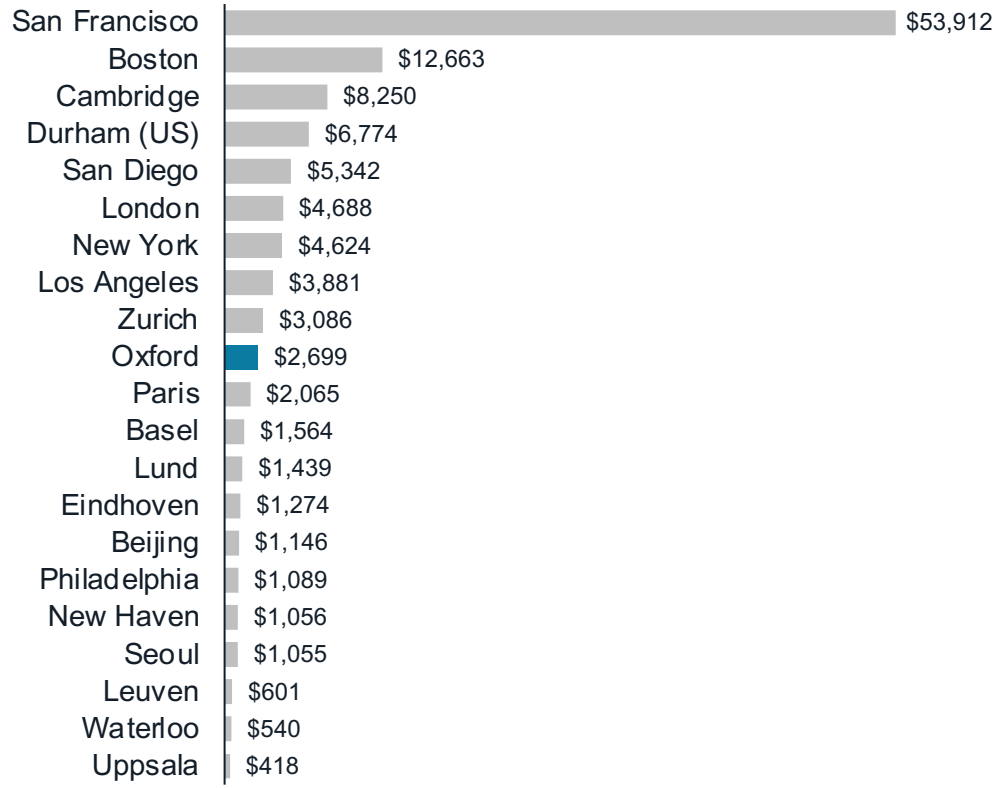
Oxford’s decade of progress

Oxford has surged into the global top 10 for venture capital concentration

Annual Oxford VC funding ($ billions)



2022-present VC funding per person ($)



Why does this matter for Oxford?

The typical business headquartered in Oxford now has access to capital at a rate more consistent with much larger innovation hubs.

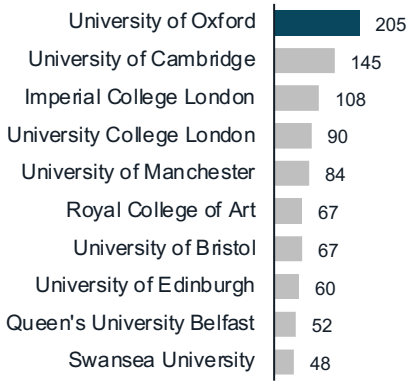
Oxford surpasses all peers outside of the United States. At more than $2,600 per person, the last four years of VC funding is more than next-placed Paris, while also exceeding that of cities such as Beijing, Philadelphia and Seoul.

In turn, Oxford is able to generate much higher rates of spin-outs and equity deals than would be expected of even a highly notable market of its size.

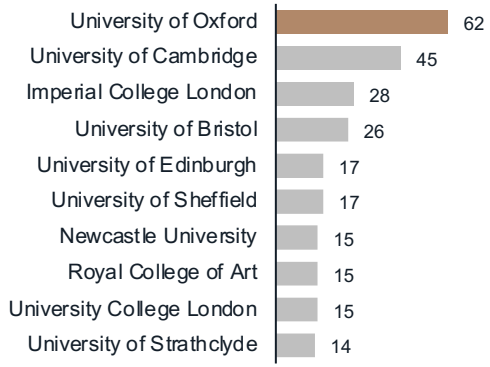
Source: JLL Research, Dealroom

The University of Oxford leads UK on spinouts and deals, and is alone in achieving Global Top 3 across all core subject areas

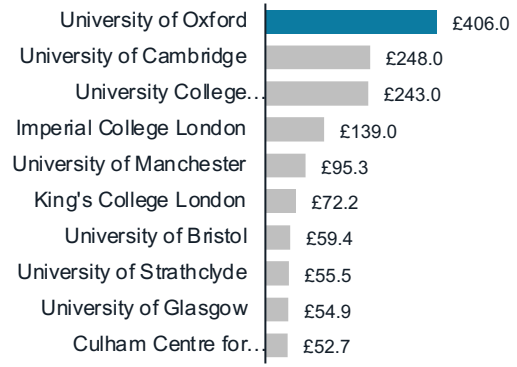
2011-2023 spin-outs



2023 equity deals by spin-outs



2023 institutions by equity volume (£m)



Arts and humanities	Engineering	Life sciences	Natural sciences	Social sciences
Harvard	MIT	Harvard	Harvard	Harvard
Cambridge	Stanford	**Oxford**	MIT	**Oxford**
Oxford	**Oxford**	Johns Hopkins	**Oxford**	Stanford
Stanford	Cambridge	Stanford	Cambridge	MIT
UC Berkeley	UCLA	MIT	Stanford	Cambridge
Yale	ETH Zurich	Cambridge	Caltech	LSE
MIT	Imperial	Imperial	UC Berkeley	UC Berkeley
NYU	Harvard	UCSF	ETH Zurich	Yale
UCLA	Caltech	UCL	Imperial	U Chicago
UCL	EPFL	Karolinska	Princeton	NYU

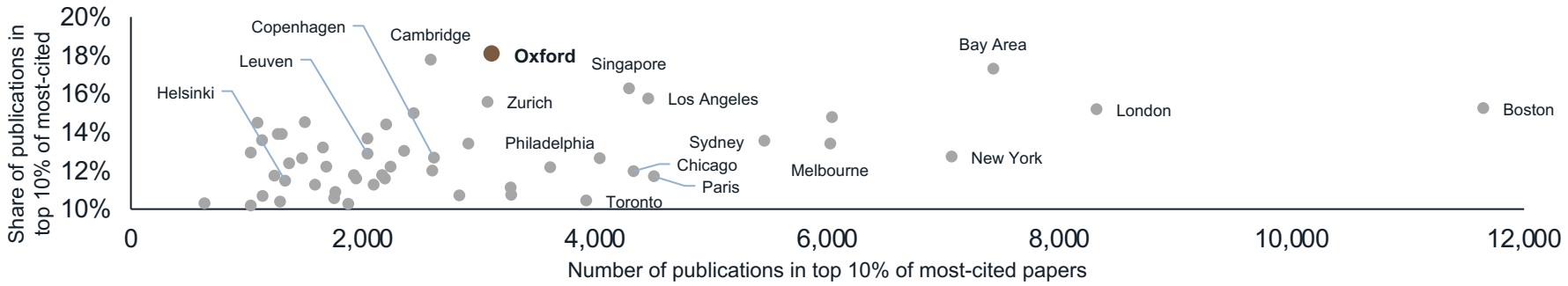
Source: JLL Research, Beauhurst, QS

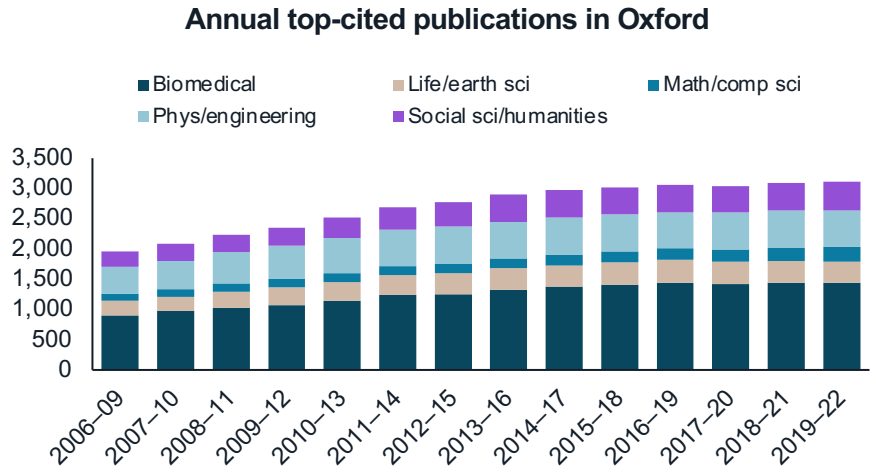
Why does this matter for Oxford?

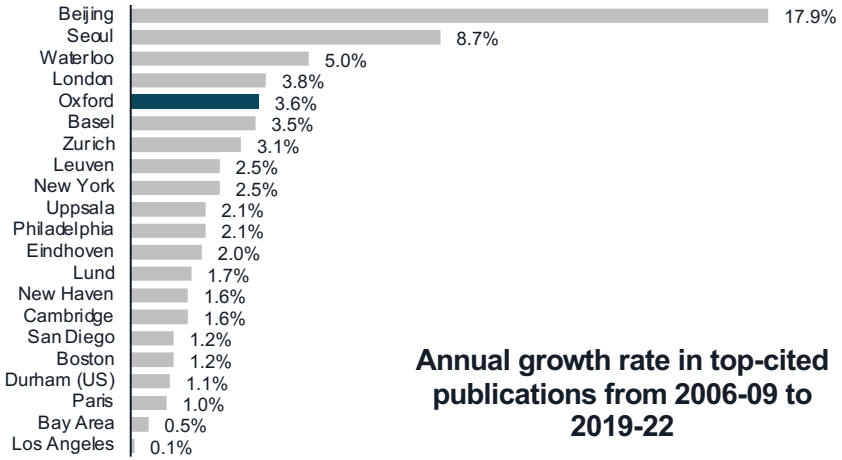
The transformation of the innovation capacity of the university – accelerated by the coordination success of the pandemic – creates a great deal of momentum and confidence for Oxford's next stage of development.

The University has been finding its mojo as a partner and 'anchor' institution. It is also committed to shaping place outcomes (e.g. with OUD designing and driving locations like Begboke and Osney Mead, with housing, jobs and amenity), and addressing Oxford's profound educational and social inequalities.

Oxford's scale and consistency of high-impact publications is world-class; only Cambridge and the Bay Area are comparable







Annual growth rate in top-cited publications from 2006-09 to 2019-22

Why does this matter for Oxford?

Oxford is one of only three clusters globally along with the Bay Area and Cambridge (UK) to generate critical mass of 2,000+ top-quality papers along with high rates of highly cited works.

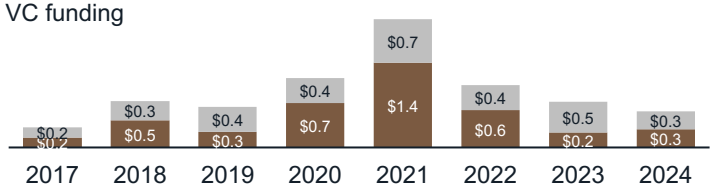
This engine room of insight is growing impressively. Oxford's output of high-impact publications has grown by 50% in 15 years. Its annual growth rate is among the highest outside of Asia within its peer set, with greatest improvement in math and computer science.

This research calibre provides great fuel for patent production.

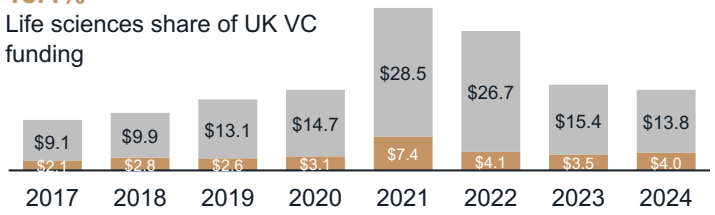
Source: JLL Research, Leiden University

Life sciences shaped Oxford's recent innovation investment cycle

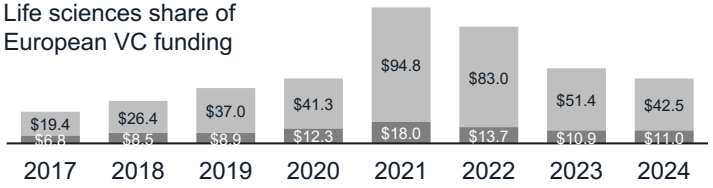
56.1%
Life sciences share of Oxford VC funding



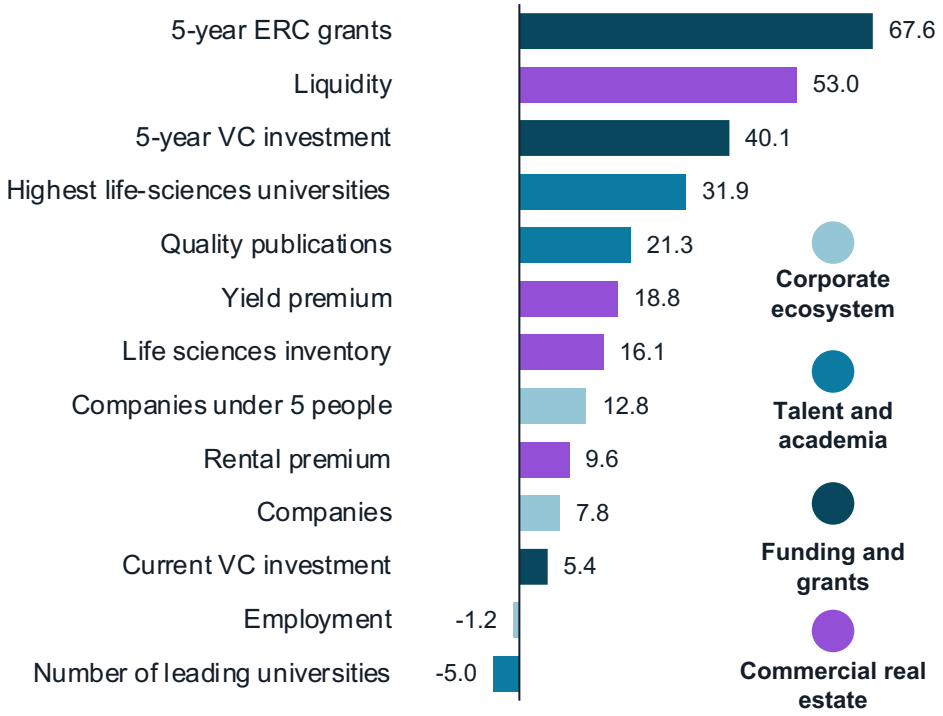
18.4%
Life sciences share of UK VC funding



18.6%
Life sciences share of European VC funding



Relative life sciences cluster score performance compared to other European markets



Why does this matter for Oxford?

The life sciences share of venture capital into the knowledge economy is far higher in Oxford than for the UK and Europe as a whole. The life sciences cluster stands out for its success in public grants and its large role in Oxford's commercial real estate market.

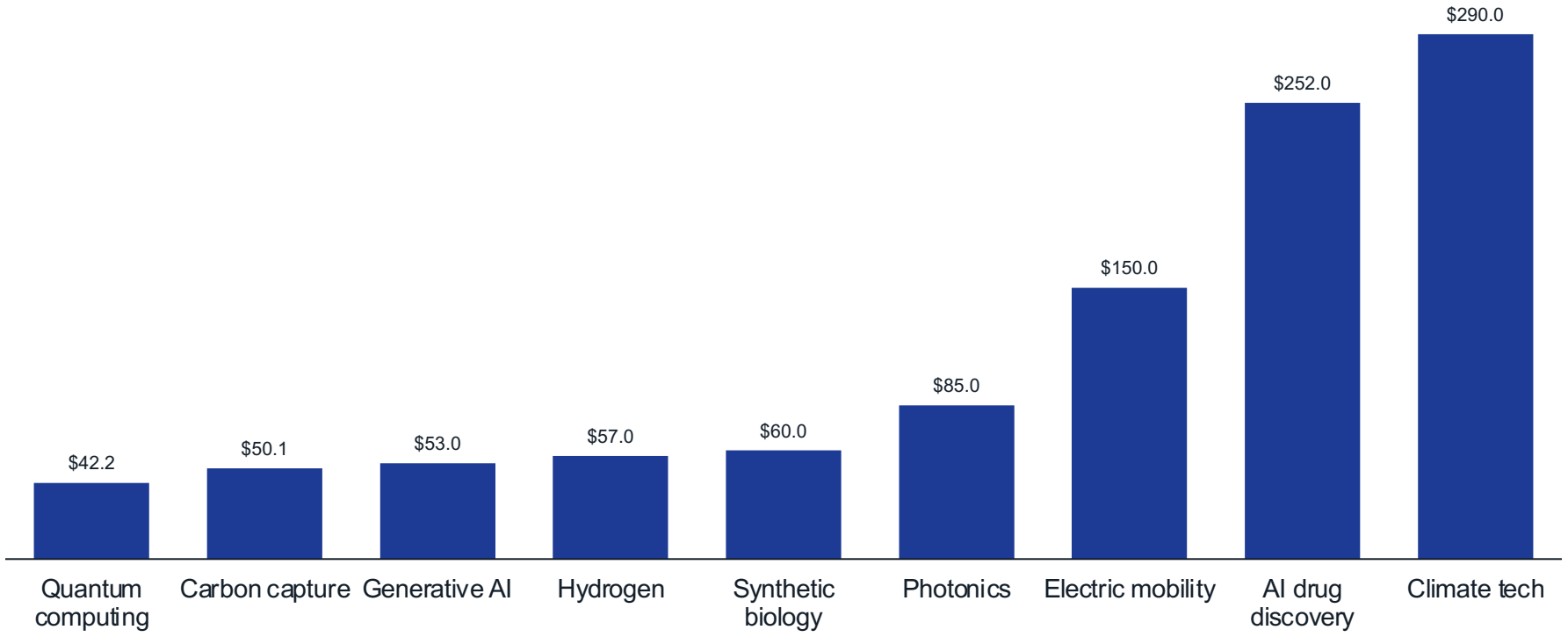
This specialisation is part of what has recently put Oxford on the global innovation map, and drives investor confidence.

However it also means that current industry diversity is lower, and exposes Oxford to fluctuations in life sciences occupier and funding trends. It also places higher reliance on Oxford University. More mature ecosystems benefit from a broader suite of sectors, institutions and investors.

Source: JLL Research – *clusters based on JLL's Life Sciences Cluster Outlook*

Among “frontier technologies”, Oxford has diverse strengths and excels in climate tech, advanced biology and electric mobility

2022-2025 Oxford VC funding in frontier technologies ($m)



Why does this matter for Oxford?

As the innovation landscape shifts into an ever-widening array of areas, Oxford needs to be vigilant about its success in new high growth industry segments.

So far, Oxford shows promise at attracting capital into electric and driverless vehicles as well as multiple aspects of climate engineering and advanced computing. AI drug development has also shown signs of substantial promise in recent years.

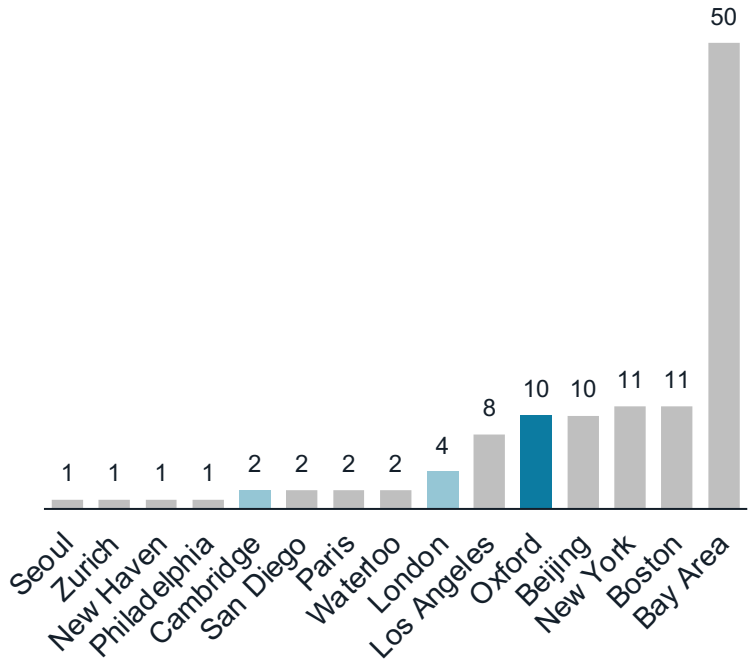
Oxford outperforms its size on emerging tech, but so far it is only in quantum and hydrogen where its scale of investment is competitive with global leaders not just smaller centres.

Proximity to the West Midlands, which is becoming a leader in European battery development and electric vehicle manufacturing, underscores Oxford’s ability to act as a regional “connector” between research, financing and development.

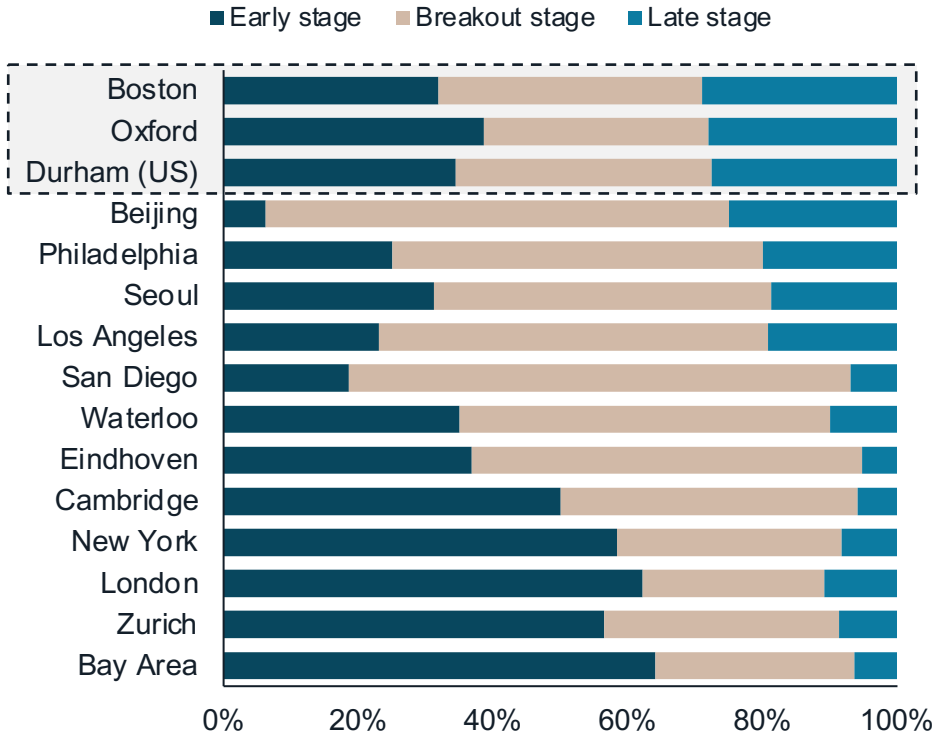
Source: JLL Research, Dealroom

Oxford is at the forefront of deep tech and is one of the few science hubs with an even distribution of early, breakout and late-stage VC

Dealroom deep tech intensity score



Distribution of science-based venture capital funding by stage



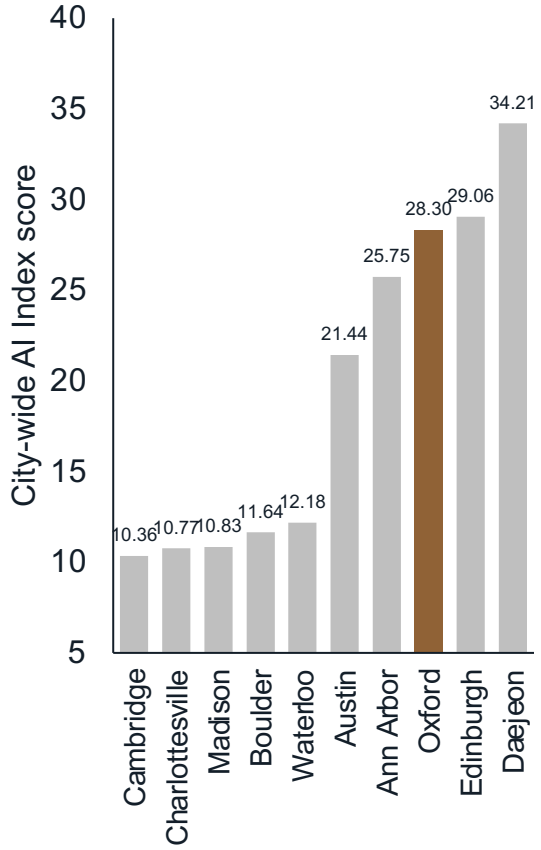
Why does this matter for Oxford?

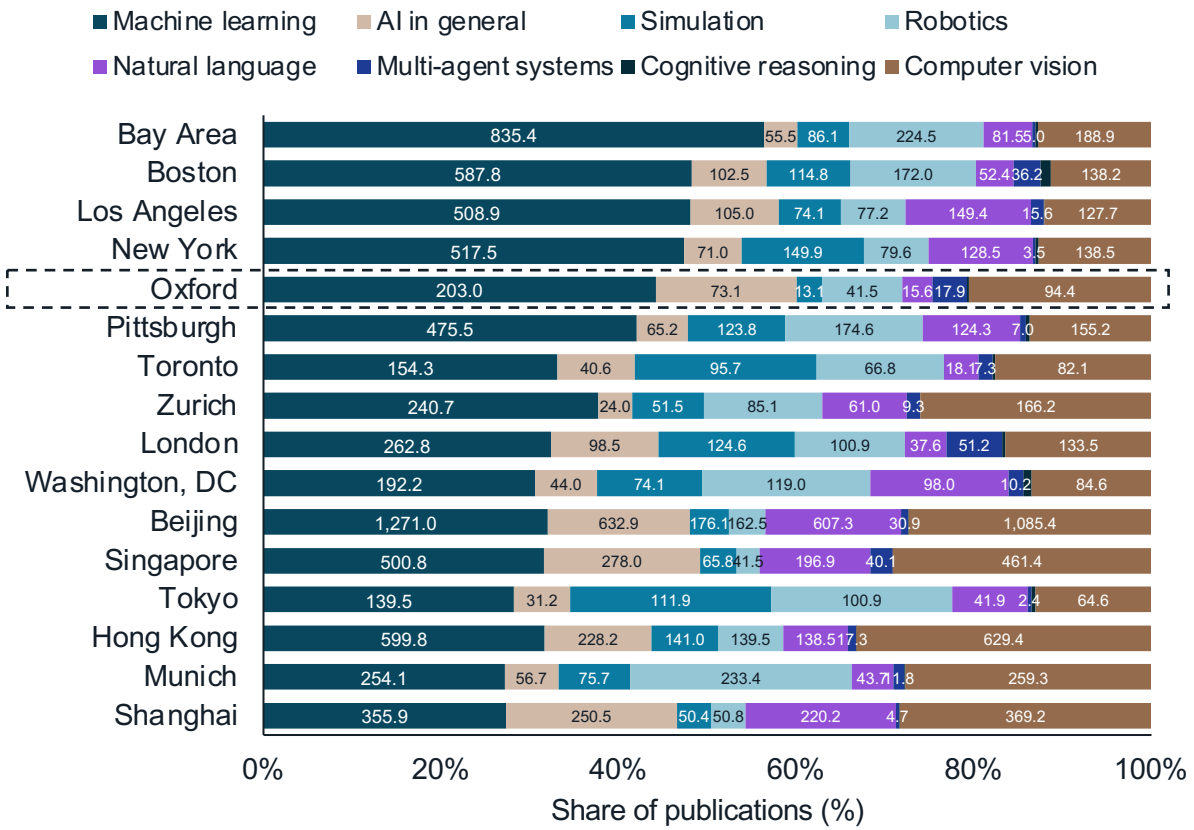
Deep tech has now joined life sciences as one of Oxford's strongest innovation areas. It scores 5th among all peers on deep tech intensity, surpassing much larger cities such as London, Los Angeles and Paris, and well ahead of Cambridge.

This depth of institutional presence and research understanding also means that Oxford has one of the most evenly distributed ecosystems for venture capital deployment by stage (early, breakout or late) compared to both larger and smaller peer sets. 28% of venture capital funding in Oxford comes during the late stage, on a par with Boston and Durham (US). This alignment indicates that Oxford has substantially more potential than is being realised.

Source: JLL Research, Dealroom – *science VC funding only*

Oxford is at the forefront of AI research impact and leads in the nascent multi-agent systems segment

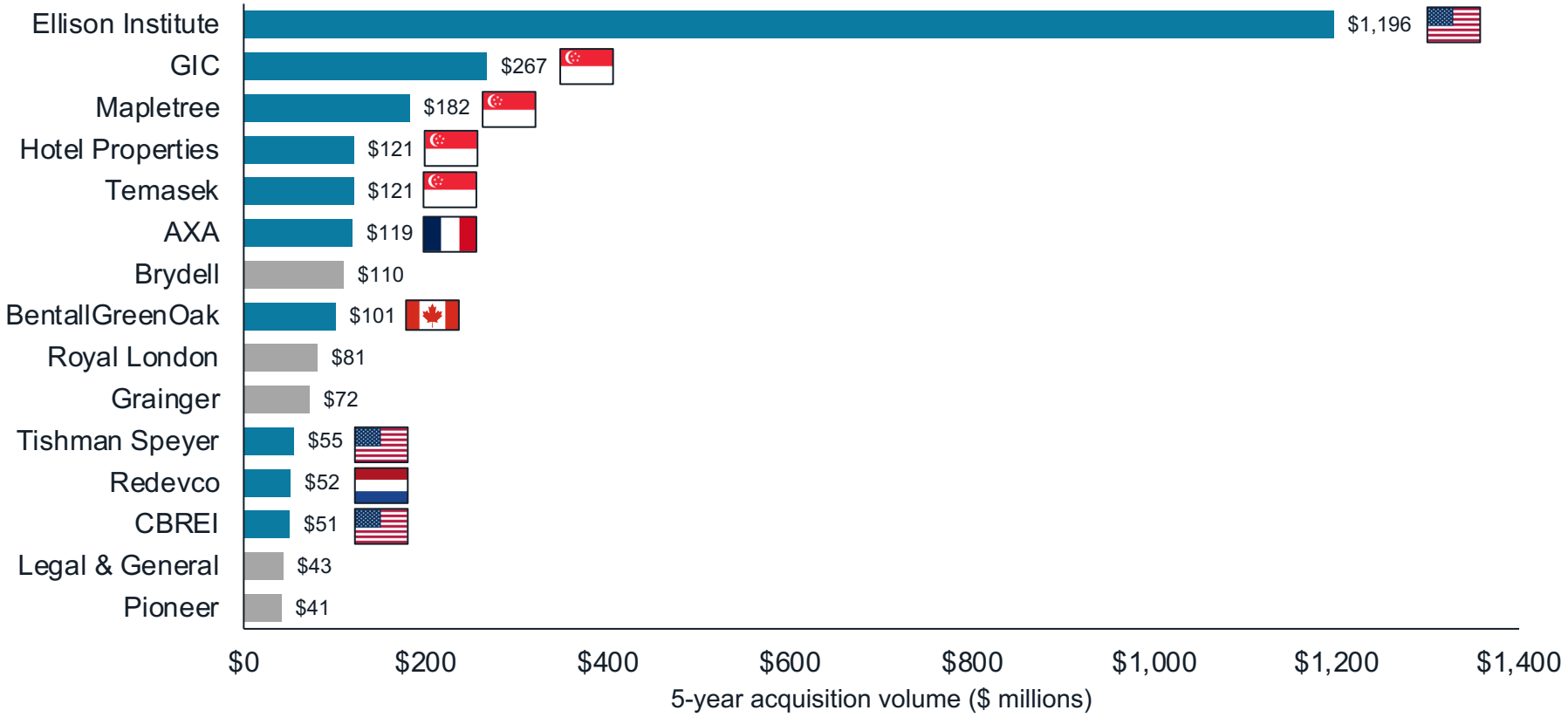




Machine learning	AI in general
Beijing Bay Area Hong Kong Boston	Beijing Singapore Shanghai Hangzhou
Simulation	**Robotics**
Beijing New York Hong Kong London	Munich Bay Area Pittsburgh Boston
Natural language	**Multi-agent systems**
Beijing Shanghai Singapore Los Angeles	London Singapore Boston Oxford
Cognitive reasoning	**Computer vision**
Boston Edinburgh Washington, DC Pittsburgh	Beijing Hong Kong Singapore Shanghai

Source: JLL Research, AI Rankings – *2022-2025 publications, largest AI clusters by publication volume*

Oxford’s innovation success has made it much more attractive to cross-border real estate investors seeking scale and quality



Why does this matter for Oxford?

Appeal to foreign real estate investment has been a key source of capital in the relative absence of large-scale UK-based funding sources.

The level of inbound cross-border capital is unusual for a market of Oxford’s scale and volatility. This exemplifies how Oxford is viewed as location capable of outsized impact and quality.

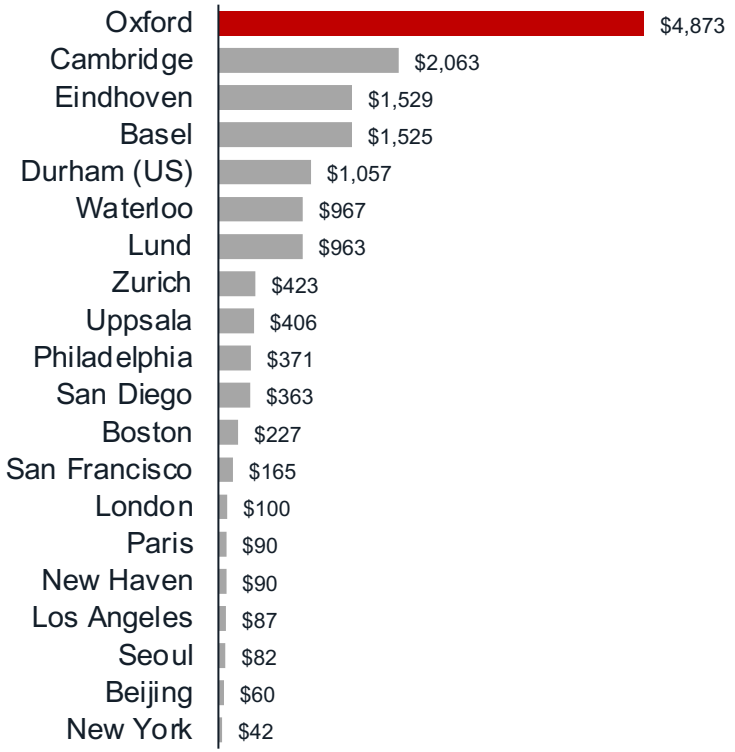
Cross-border capital is likely to be key for Oxford to diversify its offering for top-tier research, labs for all stages and contexts, corporate office, build to rent and student accommodation that define more mature clusters.

Source: JLL Research, Real Capital Analytics

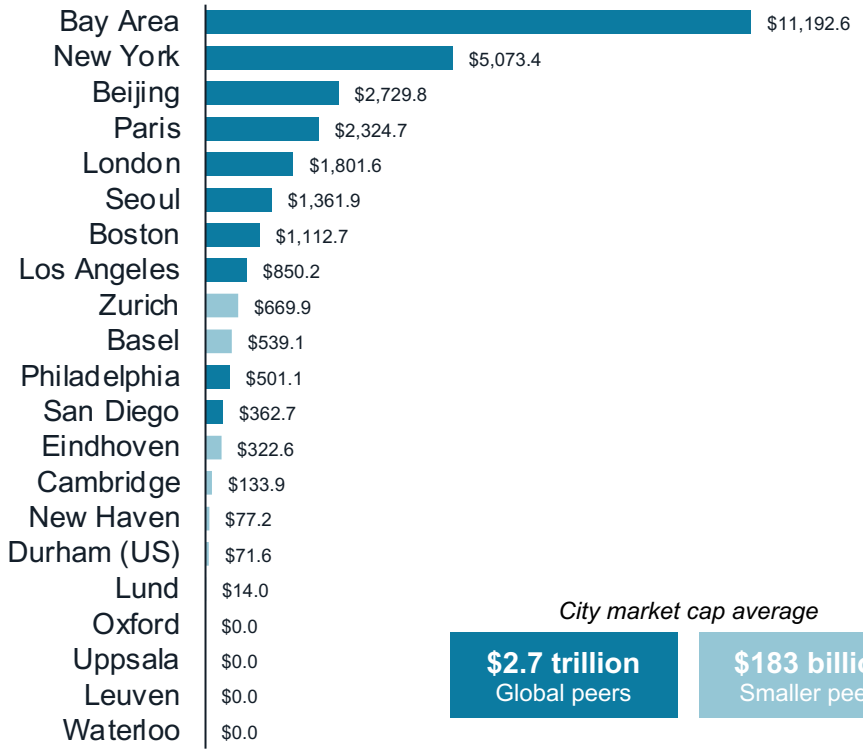
Oxford’s prospects: gaps and constraints

With few corporate anchors, Oxford finds it hard to scale start-ups into global players

Venture funding per capita relative to unicorns produced since 2019



Market capitalisation of Forbes Global 2000-headquartered companies by city ($ millions)



City market cap average

$2.7 trillion Global peers

$183 billion Smaller peers

Source: JLL Research, Dealroom, Forbes

Why does this matter for Oxford?

Despite Oxford's very high concentration of research output and venture capital, it lacks corporate anchors. For instance no Forbes Global 2000 companies have their headquarters in Oxford, and the region lacks a strong presence of international corporates

This hampers the ability of start-ups to grow in place rather than looking elsewhere for capital and talent.

For each VC dollar, Oxford has been less than half as successful as Cambridge at turning funding into local unicorn companies. Other smaller cities internationally – from Uppsala to New Haven - are also more efficient at delivering homegrown scale.

These figures indicate clear opportunities to build, retain and attract more exceptional companies in the ecosystem in future, if conditions are right.

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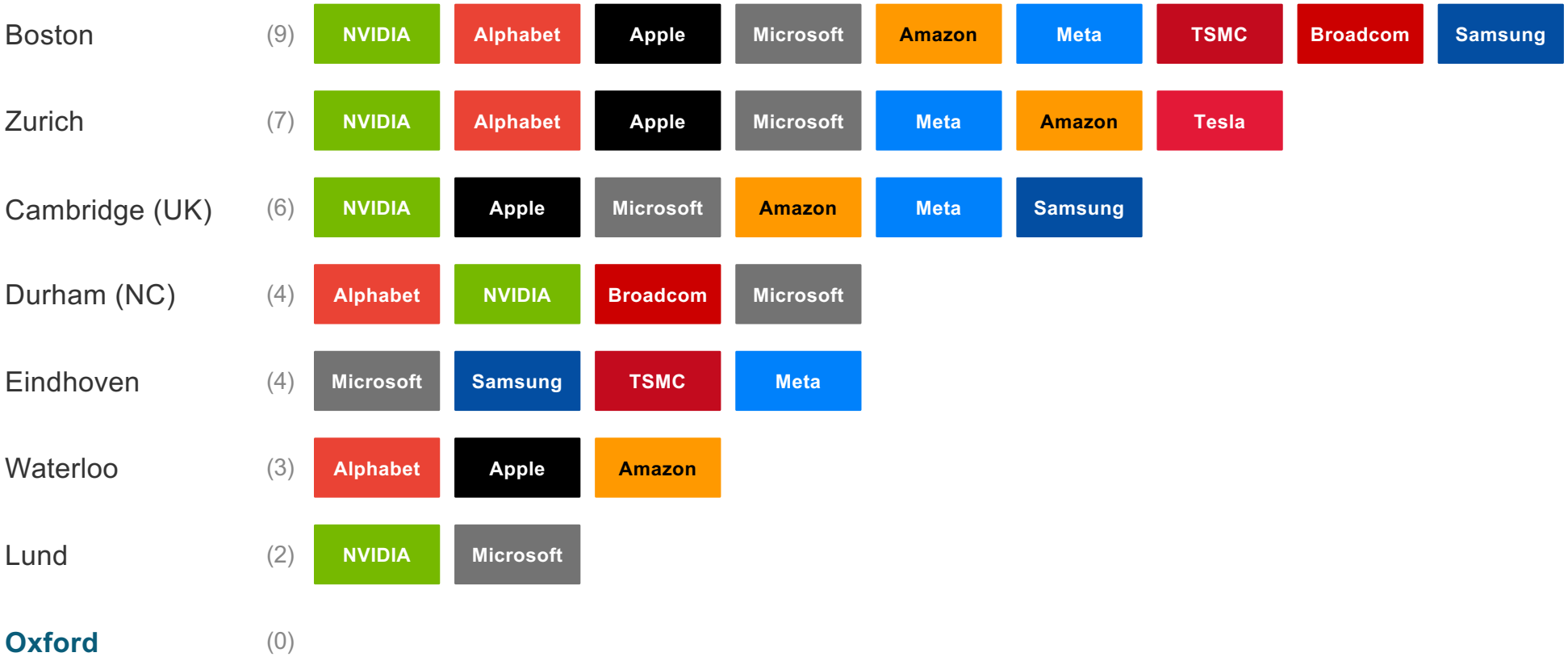
Oxford remains absent from the global footprint of Top 10 tech companies

Recorded presence of the top ten technology companies by market capitalisation, 2026

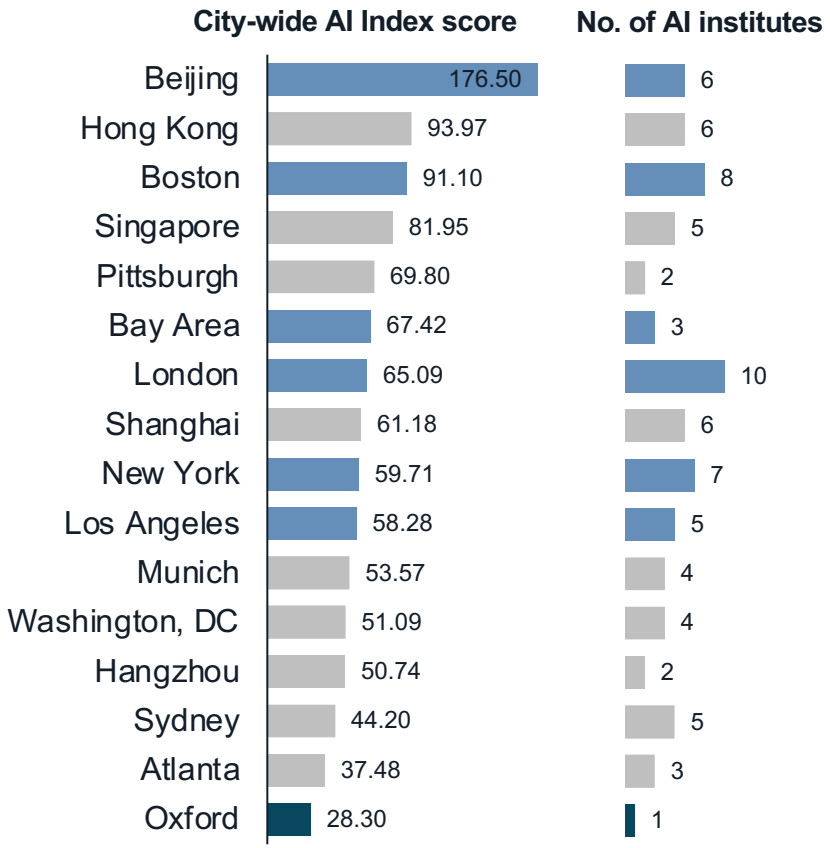


Presence defined as offices, engineering/R&D labs, acquired subsidiaries with continued local operations, staffed partnerships. Evidence triangulated from company locations, registries, campus directories, media. Excludes retail/sales/logistics. Top 10 companies by market capitalisation, January 2026.

The Business of Cities JLL

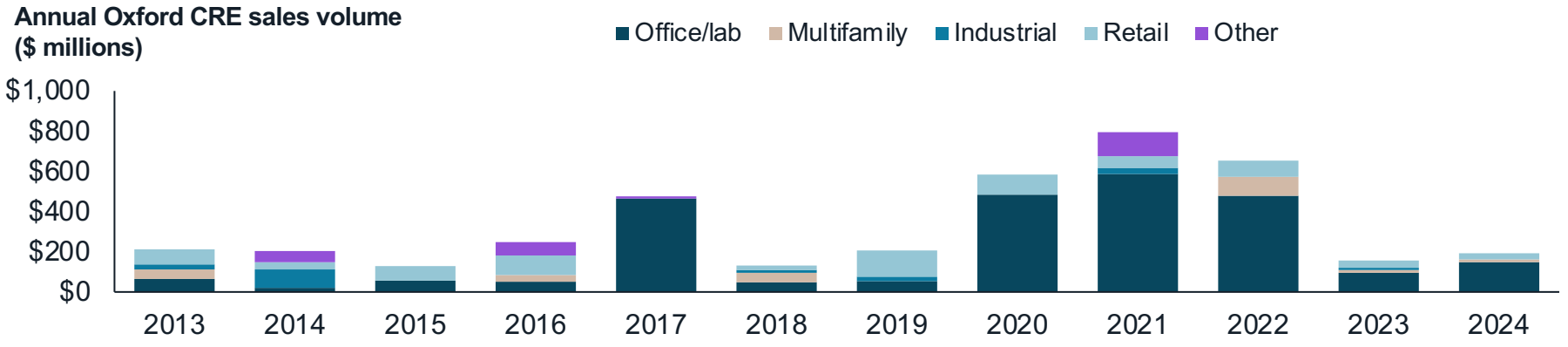
Despite outstanding research strengths, Oxford has not yet reached commercial critical mass across the spectrum of new technologies

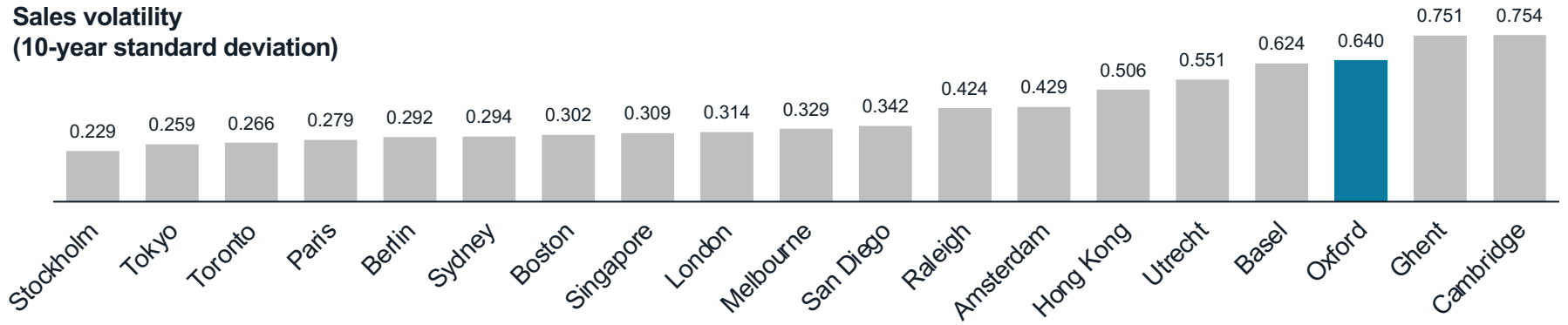
	Climate tech	Generative AI	Driverless cars	Electric mobility	Hydrogen	Photonics	Quantum comp.	Total
Boston	Yes	Yes	No	Yes	Yes	Yes	No	**5**
Bay Area	Yes	Yes	Yes	Yes	No	Yes	Yes	**5**
London	Yes	Yes	Yes	Yes	No	No	No	**4**
Beijing	Yes	Yes	Yes	No	Yes	No	No	**4**
Paris	Yes	Yes	No	Yes	No	No	No	**3**
Los Angeles	Yes	No	No	Yes	No	No	No	**2**
New York	Yes	Yes	No	No	No	No	No	**2**
Cambridge	Yes	No	No	No	No	No	No	**1**
Oxford	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**1**
Seoul	Yes	No	No	No	No	No	No	**1**
San Diego	Yes	No	No	No	No	No	No	**1**
Durham (US)	Yes	No	No	No	No	No	No	**1**
Waterloo	No	Yes	No	No	No	No	No	**1**
Zurich	No	No	No	No	No	No	No	**0**
Philadelphia	No	No	No	No	No	No	No	**0**



Source: JLL Research, Dealroom, AI Rankings

Reliance on specific sectors and asset classes means Oxford's CRE market has lower product mix, is less liquid and more volatile





Why does this matter for Oxford?

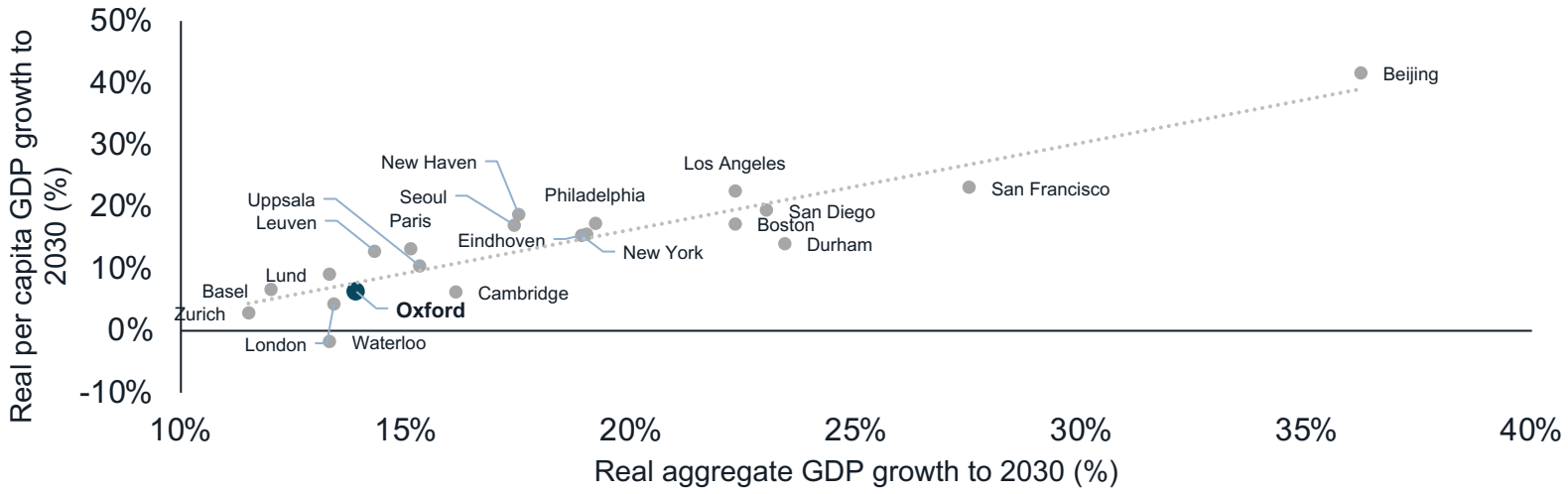
Taken as a whole, Oxford has enjoyed a 5 year surge of real estate capital inflow ($2.3 billion) that is substantially higher than its small international peers.

More than most, this inflow has been concentrated in labs, with more limited investment into other asset classes. Overall the investment market is still relatively illiquid.

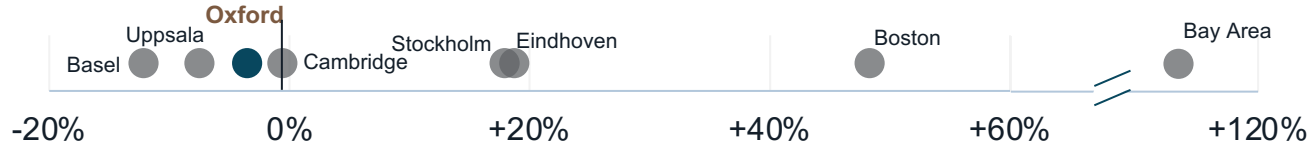
Lower liquidity also creates a more volatile investment market. Amongst benchmarked geographies, Oxford has the fourth-highest volatility in decadal sales volume after Cambridge and Ghent. In comparison, London and Boston are 51% and 53% less volatile, respectively.

Source: JLL Research

Oxford has not yet been able to translate the growth cycle into high productivity and prosperity outcomes



City labour productivity compared to national average
(GDP per worker, USD PPP)



Why does this matter for Oxford?

Service and knowledge-based economies rely on density and agglomeration effects to raise output and living standards.

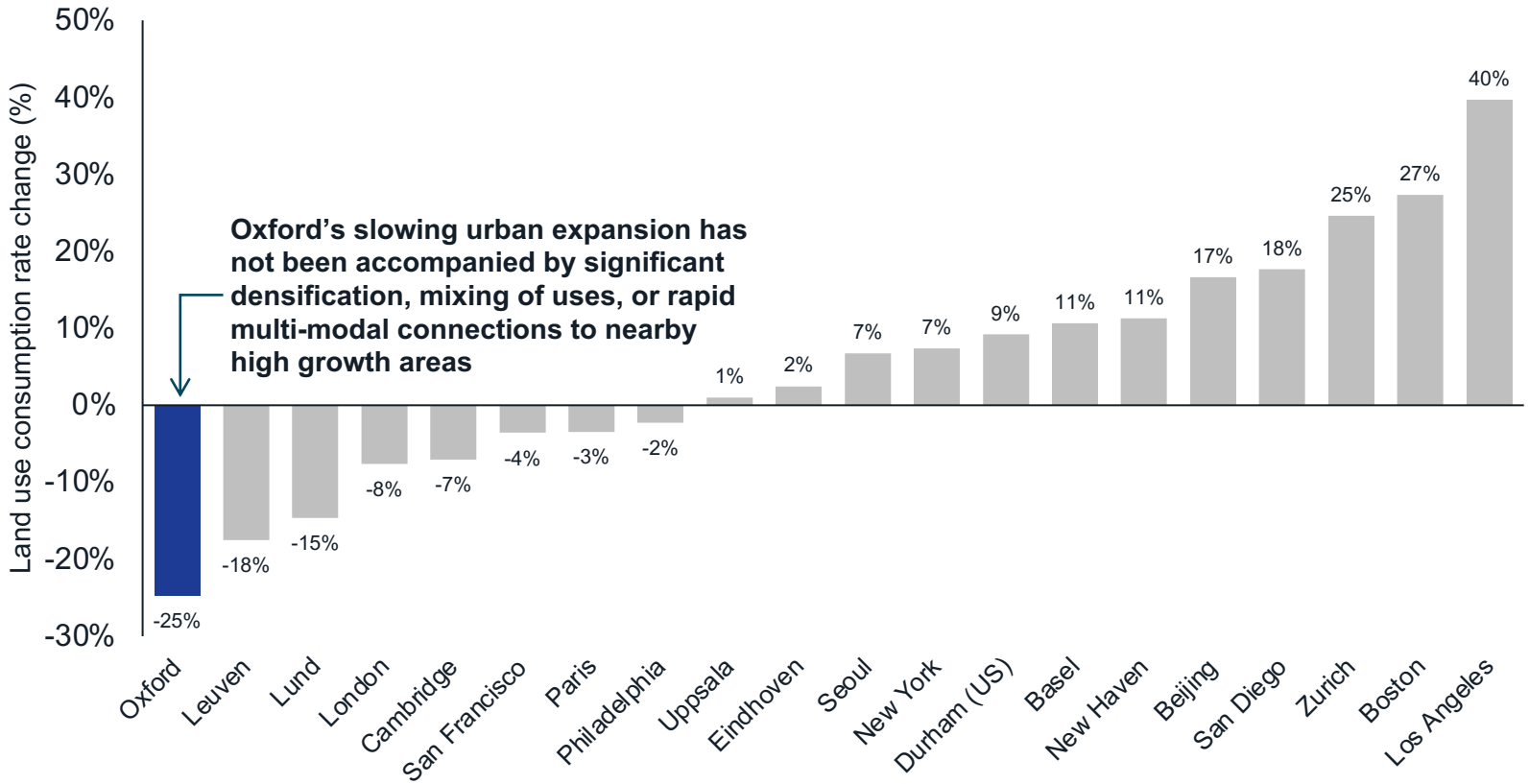
Unlike many global innovation hubs, Oxford's worker productivity is below national average despite its prodigious research output, due to low private sector job share.

Larger cities have been able to rely on their scale and deeper capital pools to generate more higher value jobs. Yet smaller Continental European markets also tend to have more physical infrastructure to more readily accommodate growth.

Modest productivity not only constrains the ability of Oxford to become a more rounded and diverse economy; it also erodes the social licence for growth and innovation locally.

Source: The Business of Cities, JLL Research, Oxford Economics, OECD, ILOSTAT

Oxford has expanded more slowly than nearly all similar sized markets, which has side effects on capacity and costs



Why does this matter for Oxford?

Oxford's population has grown by less than 1,000 people per year since 1980. Its growth constraints – heritage, geography, floodplain – are well known. Choices of how and where to grow are never straightforward.

Yet Oxford's land use constraints over several cycles have reduced or discentivised space for development, exacerbated unaffordability, and pushed potential residents, businesses and opportunities out of the ecosystem – including beyond the UK.

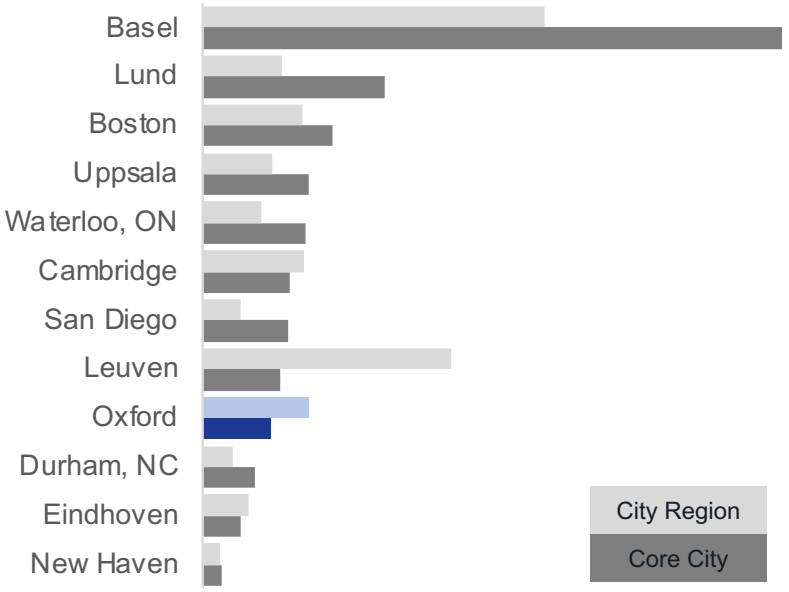
Oxford's inherited constraints are compounded by a lack of consensus over whether, where and how to densify, combined with limited or delayed infrastructure delivery.

Signs of more predictable and delivery focused planning processes will help Oxford to be more often viewed as a location that can reliably partner on important projects.

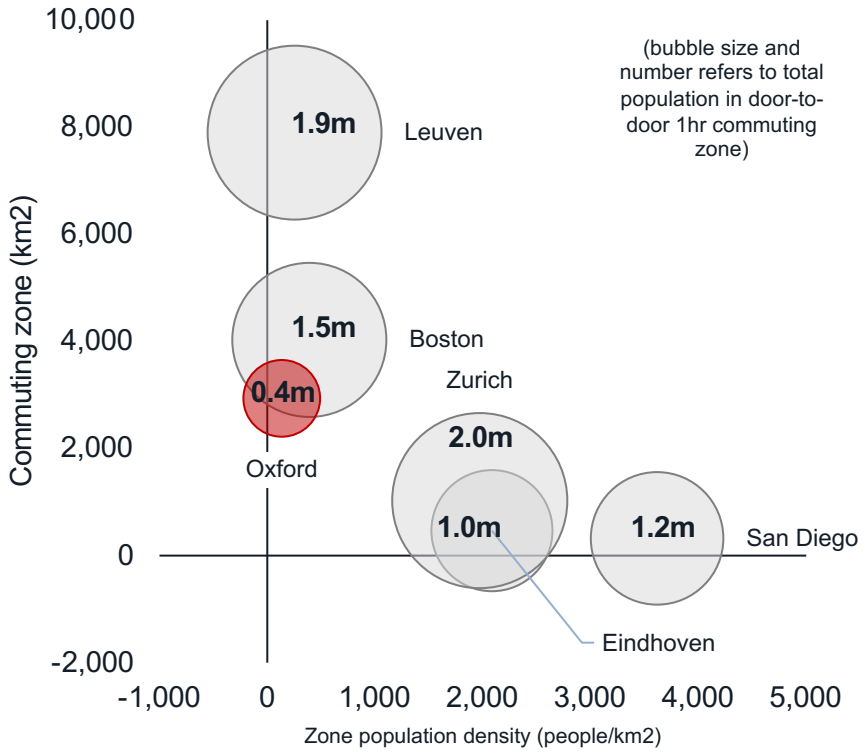
Source: JLL Research, Copernicus – *indicator measures average rate of change in land use consumption between 1975-1980, 1980-90, 1990-2000, 2000-2010 and 2010-2020*

Oxford’s agglomeration efficiency - and in turn its appeal - is constrained

Oxford’s public transport capacity



Oxford’s travel-to-work area by public transport



Why does this matter for Oxford?

Oxford has more limited capacity and choice of public transport than most innovation-rich city-regions. Most comparable places have more rail or tram capacity, more public transport stops, and better coverage close to population, especially within their version of the ‘Greater Oxford’ area.

A much smaller population base is able to commute efficiently into Oxford, and the commutable zone is also less densely developed than both smaller and larger peer regions.

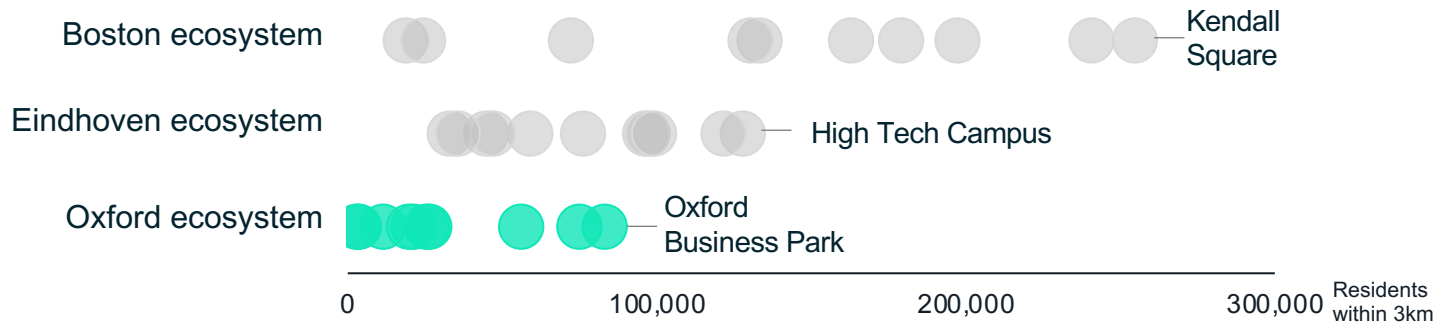
In effect Oxford is not optimising access to its innovative epicentre. To catch up internationally it would need more medium density development near rail stations, more regular and reliable existing services, and more infrastructure development to serve residents.

Source: The Business of Cities, GHSL, Traveltime

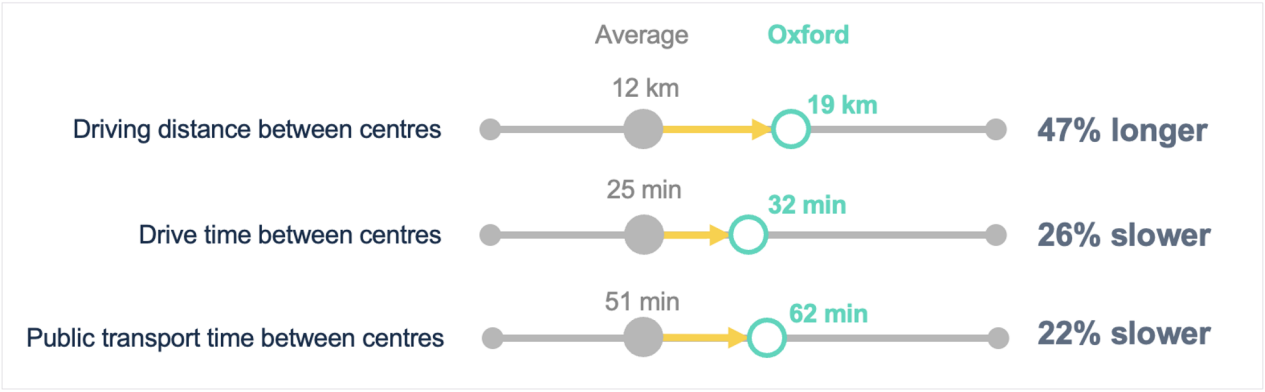
Public transport capacity based on overall rail, bus and tram capacity, adjusted for population and typical stop/station capacity, at 10km and 30km radius from city centre for Core City and City Region respectively.

Oxford’s innovation locations lack scale and network effects

Oxford’s main innovation locations currently lack critical mass



Oxford’s key hubs of innovation are less efficiently connected



Why does this matter for Oxford?

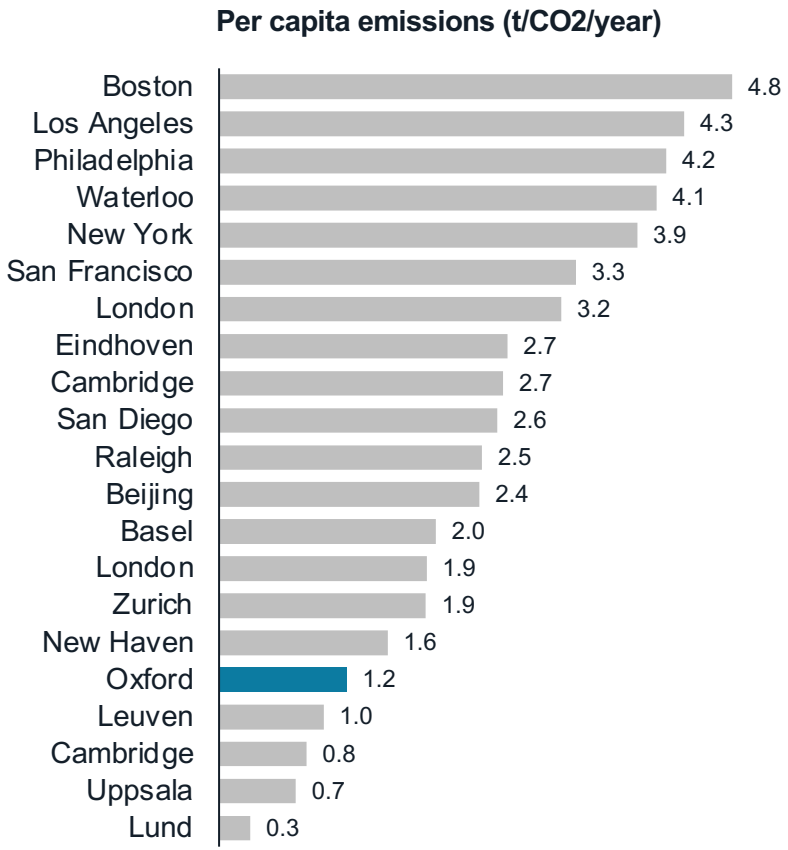
Oxford possesses many distinctive areas of excellence but does not yet possess locations that stand-out internationally for scale or mix of uses/activities.

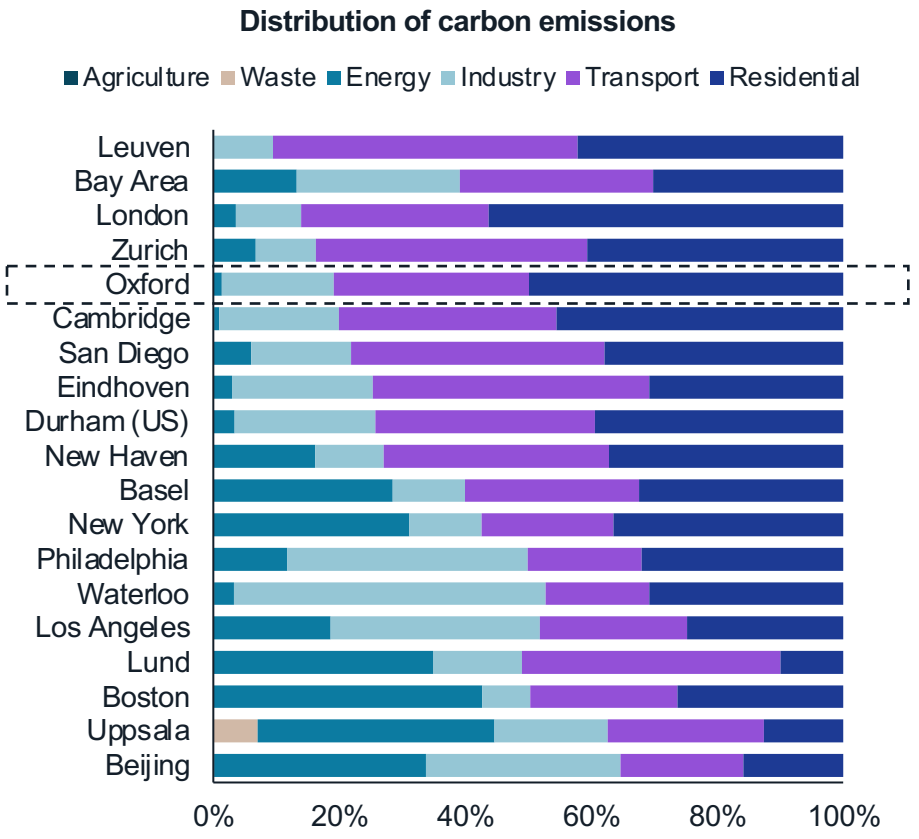
Spillover effects are also diluted by long and unreliable journey times between most main innovation areas. The extra time to travel in peak hours between key hubs by public transport compared to by car is worse than in Boston, a much larger and more car dependent city-region.

Most of Oxford’s science parks and emerging hubs need more adjacent residential capacity, commercial scale, or rapid connectivity, if they are to become centres of gravity on an international scale. The Cowley Branch Line and associated development is a welcome step to this effect.

Source: The Business of Cities, GHSL, Google Maps – *Oxford’s locations: Milton Park, Oxford Science Park, Oxford Business Park, Oxford North, Harwell, Culham Science Centre, Begbroke, Oxford Technology Park, Catalyst Bicester, Oxford Station; Population within a 3km radius. Figures should be viewed as illustrative.*
Comparison of morning weekday peak-time journeys by car & public transport.

Oxford is less carbon intensive than most but has a higher share of residential and transport emissions





Why does this matter for Oxford?

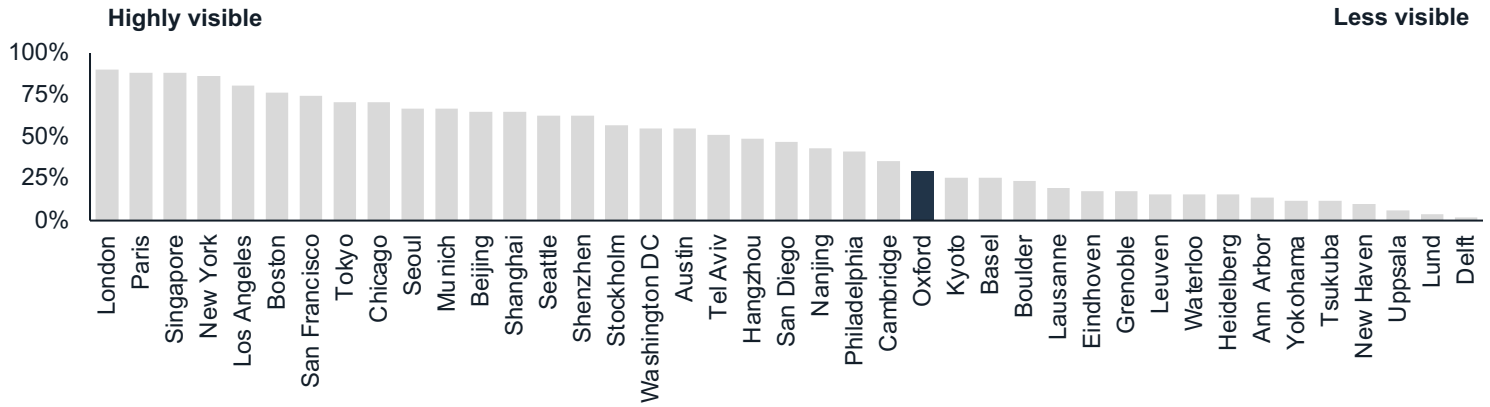
The 80%+ of Oxford's carbon dioxide emissions that come from residential buildings and transport is the 4th highest amongst peer markets.

Decarbonisation of the existing built environment relies on sustainable growth choices and underpinning infrastructure systems. Investment in infrastructure will also be critical to deal with congestion, pollution and finding new sites to unlock for densification.

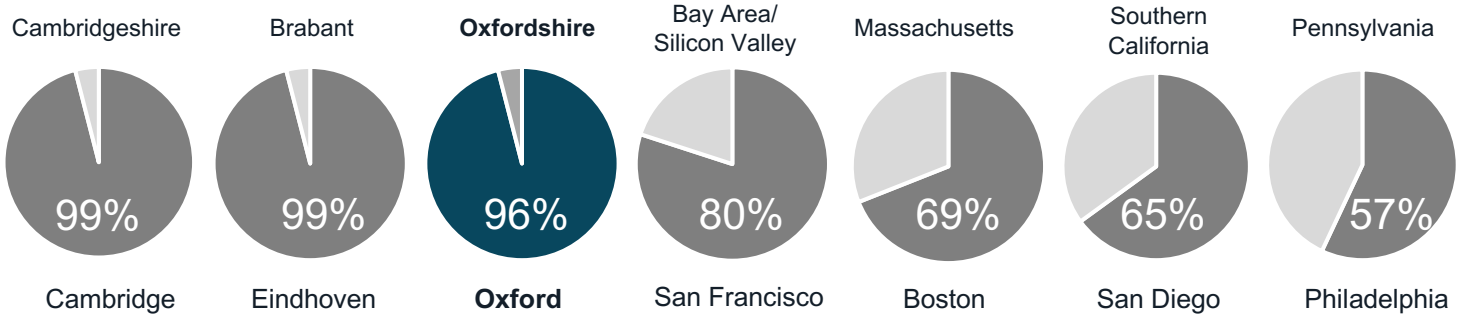
Source: JLL Research, Copernicus

Oxford’s innovation brand is modest relative to its assets

Frequency of appearance in international benchmarks of highly innovative cities and ecosystems (2020-present)



Aggregate global interest and visibility of the core city as a share of the wider region (past 20 years)



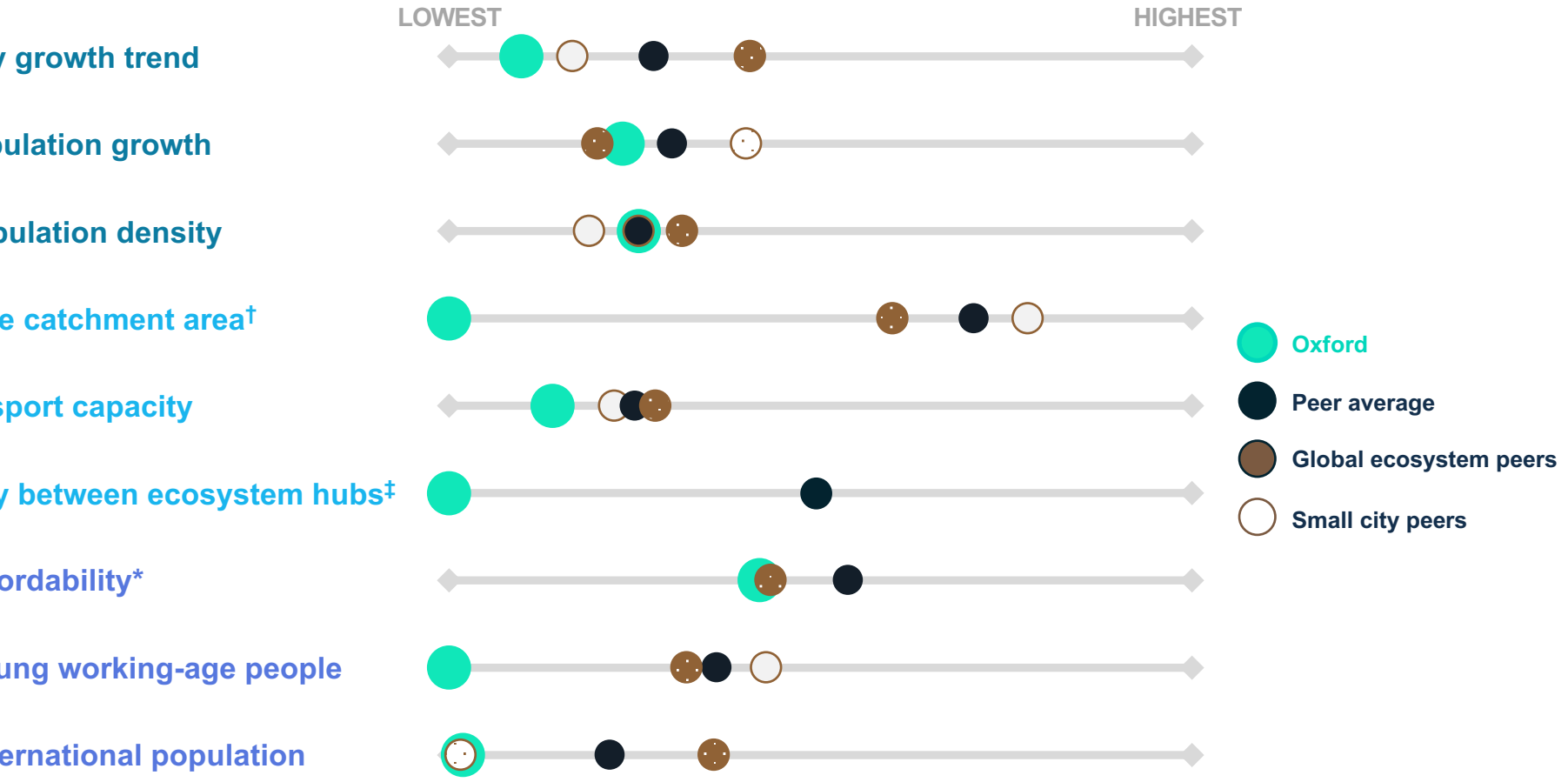
Why does this matter for Oxford?

Among 40 successful high performing cities, including both peer groups, Oxford is only 28th most frequently featured among all prominent city benchmarks, and 25th among innovation-specific benchmarks. This suggests it lacks visibility and recognition in line with its significance.

Oxford’s innovation ecosystem spans a wider region (Oxfordshire) that has a much smaller international profile for innovation than the city itself. In most cases internationally with a similar dynamic, the region adopts the city as the ‘attack brand’, and works to build up a compelling and complementary regional story over time.

Source: The Business of Cities, Google Trends, Global Media

Oxford in global context: summary metrics



Sources: The Business of Cities. Data via *Oxford Economics, UN World Urbanisation Prospects, GHSL, TravelTime, Google Maps, Demographia; Census statistics. Please note, data only reflects Oxford's position among peers referred to in each segment of analysis.*

*† Commutable catchment area based on max. 60 min journeys by car or public transport. ‡Based on journey duration. * Based on median multiple housing affordability vs. international peers, with Oxford indexed to its position viz London*

NB: Young working-age = 25-40 age group.

NB: Young people and depth of international population, scores are based on Oxfordshire-wide data

Oxford learning from the world

Oxford learning from the world: competitors and comparators are now focused on three related sets of agendas

	Core themes
1 Sustaining innovation economy growth	Scale and capacity building Diversification of investor base Anchor institution mindsets Collaborative culture and incentives
2 Place and physical improvements	City centre innovation capacity Enhancing quality of place Infrastructure investment Growth and development frameworks
3 Leadership, coordination and profile	Public-private agencies and coalitions Policy support and prioritisation Social value and license Innovation brand, soft power and storytelling

Source: The Business of Cities

Oxford learning from the world: competitors and comparators are now focused on three related sets of agendas

	Core themes	Policy examples
1 Sustaining innovation economy growth	**Scale and capacity building** **Diversification of investor base** **Anchor institution mindsets** **Collaborative culture and incentives**	• Focusing on tech-science-creative convergence and nearby manufacturing capability. • Reaching, recruiting and retaining scarce talent. • Building presence and connections in other international innovation markets. • Expanding the community of quality investors into innovation and the built environment. • University stepping up roles in commercialisation, land use and global outreach. • Quality programming for high value networks of founders, CEOs, CXOs and talent.
2 Place and physical improvements	**City centre innovation capacity** **Enhancing quality of place** **Infrastructure investment** **Growth and development frameworks**	• City centre station area benefits from mixed use transformation with commercial scale. • Responding to demand for higher calibre placemaking in more locations. • Improving the openness and invitation of the built environment, architecture, people flows. • Housing delivery acceleration at affordable and middle-income ranges. • Accelerated infrastructure transition through institution-building and patient capital. • Reserving and prioritising land for next generation growth firms.
3 Leadership, coordination and profile	**Public-private agencies and coalitions** **Policy support and prioritisation** **Social value and license** **Innovation brand, soft power and storytelling**	• Broader based and collaborative leadership with business at the fore. • Voice, purpose, networks, and credibility to shape the city- region and the ecosystem. • Advocacy and consensus around role in national economy, matched by policy and funding. • Coordination w/ multiple industries to identify, match and train locally for future jobs & skills • Amplifying the innovation value to other parts of the region and the nation • Higher resolution of specific strengths across the ecosystem.

Source: The Business of Cities

Interviews: common observed trends

Demand trends

After a tail-off from large peak in tech and venture capital growth, urgency to maintain position in early stage R&D in strategic sectors.

More competition to attract founders coming from lower cost, high quality of life alternative ecosystems.

Corporates seeking to tap into a second talent pool drawn to vibrant start-up ecosystems.

Companies and investors attracted to breadth.

From early stage science to wider roles in systems and value chains.

Close clustering and live-work-play models remains key for corporate tenants - in life sciences and beyond.

Source: The Business of Cities

"Our role as an ecosystem is moving from science projects into more deployment of energy and infrastructure. We have to architect a transition and work regionally and nationally."

"The University is receiving more targeted individual donations, which are much more effective at concentrating capital and effort".

'"Without transport and housing you don't get people into the ecosystem. Our business community has had to get more active to get Government to act."

"The idea for our region's main innovation hub was at a poker table – the genesis of 6-8 firms."

"The business voice will be more effective if its unified…the times call for a more powerful and integrated entity as a partner of Government – forward-looking and engaging positively." –

Adaptation trends

Cities and real estate drawing on the existing local asset base, not "build it and they will come".

Focus on the core backbone of a great place – mixed use, affordable, connected.

Larger firms becoming more vocal about infrastructure gaps and selling the ecosystem.

Team approach to the way the city-region ecosystem is organised and promoted, integrating new corporates and investments.

Beyond prescriptive public cluster bodies. Being decisive about which strengths to lead with.

Devoting resources to target markets and partner ecosystems.

"When you want to compete as a small city, you have to play in the top league. Nearly all our positioning hinges on life sciences."

"Having connections in the place you do business is imperative. It's density of relationships that brings innovation….The challenge is to bring people together and break down the silos. A peer group of 12 CEOs round a table is a success."

'"Cluster entertainment is over."

"The key is working with and through - truly - the assets in the region convening them and creating the powerful table that everyone wants to sit at."

" When a need or an opportunity for the ecosystem is identified, we triage for how will we make this work."

Oxford learning from the world: Boston

- Scale and capacity building
- Diversification of investor base
- Anchor institution mindset
- Collaborative culture and incentives
- City centre transformation
- Enhancing quality of life
- Infrastructure investment
- Growth and development frameworks
- Public-private agencies and coalitions
- Policy support and prioritisation
- Social value and license
- Innovation brand and soft power

Boston benefits from a critical mass of capital and very strong localised networks:

- 380 funds and 500 venture capital or private equity firms. Its networks of CEOs, founders, and CXOs to support early-stage companies are much more deeply established than Oxford's.

Boston has agile and skilful industry organisations

- MassBio is home to 1700 members based out of Kendall Square, offers best-in-class resources, cost-saving initiatives, business partnerships, mentorship, networking opportunities, and industry advocacy.
- It is the originator of the accelerator MassBioDrive, the shared SME facility Hub Conference Center, and workforce training centre Bioversity for diverse and disadvantaged residents.
- It engages and supports companies from elsewhere in the US, not just in the region.

Boston has innovation districts with scale:

- In Greater Boston, Kendall Square has 8 times more scale than any square kilometre in the Oxford ecosystem. Area Four top-class food and coffee hub became a recognised CEO hang-out for life science executives, investors and lab scientists.

Boston is an enduring National Government priority:

- Boston now the US capital of ARPA-H, awarded the Investor Catalyst Hub.

Source: The Business of Cities

Oxford learning from the world: Eindhoven

- Scale and capacity building
- Diversification of investor base
- Anchor institution mindset
- Collaborative culture and incentives
- **City centre transformation**
- Enhancing quality of life
- Infrastructure investment
- **Growth and development frameworks**
- **Public-private agencies and coalitions**
- Policy support and prioritisation
- Social value and license
- Innovation brand and soft power

In Eindhoven business takes real leadership:

- The region's 'Brainport' model enables business leadership. Leaders in industry, science and local government used the combined power of their network, inspiring individuals, and windows of opportunity to raise the region's profile and focus on outcomes over plans. A 'DNA of cooperation'. Multiple employers are even joined into a region Housing Fund, which facilitates 10,000 to 12,500 social and mid-priced homes.

Eindhoven has dispersed science parks but now recognises its Central Station area has to be a centre of gravity:

- Multimodal Hub around Eindhoven central station: housing capacity, bike and bus space, etc – to improve connections between campuses in the region.

Eindhoven benefits from a national endeavour and partnership to address ecosystem skills and housing gaps:

- 'Project Beethoven' sees Central government and regional authorities package for education, knowledge and spatial infrastructure, worth €2.5bn. Commitment to annual spend on vocational training in engineering – much tighter industry and university collaboration. 20,000 additional homes = 65,000 total.

Source: The Business of Cities

Oxford learning from the world: Hangzhou

- Scale and capacity building
- Diversification of investor base
- **Anchor institution mindset**
- Collaborative culture and incentives
- City centre transformation
- Enhancing quality of life
- Infrastructure investment
- Growth and development frameworks
- Public-private agencies and coalitions
- Policy support and prioritisation
- Social value and license
- Innovation brand and soft power

In Hangzhou, the City Government and the major University collaborate at scale:

- 50 minutes from Shanghai and home to Alibaba, Hangzhou is a major city specialising in AI, robotics and e-commerce. ZJU-Hangzhou is a global platform co-founded by the City Government and World No.47 Zhejiang University to achieve long-term strategic cooperation in research infrastructure, science and innovation talent teams, and international calibre clustering.

Hangzhou benefits from collective City & University ambition:

- The joint aim is to be as attractive in the top technology industries as Boston and Silicon Valley, including joint City and University visits and delegations.

In Hangzhou, public agencies invest in the recruitment of top talent:

- Support for 500 people across 4 talent categories - in physical science, information science and life science - with promise of £500,000-1m funding, team salaries, 150m^2 of office/lab space, and talent-supporting housing.

Source: The Business of Cities

Oxford learning from the world: Waterloo

- Scale and capacity building
- **Diversification of investor base**
- Anchor institution mindset
- **Collaborative culture and incentives**
- City centre transformation
- Enhancing quality of life
- Infrastructure investment
- Growth and development frameworks
- **Public-private agencies and coalitions**
- Policy support and prioritisation
- Social value and license
- Innovation brand and soft power

Waterloo has successfully leveraged large personal investments comparable to the Ellison Institute.

- The Institute for Quantum Computing and Quantum-Nano Centre, founded by Blackberry founder Mike Lazaridis, helped the region become a global top 5 rated global centre in quantum. The 27,000m^2 building hosted nanotech multi-cluster laboratories, and the largest undergraduate nanotech engineering program in Canada. The success factors of this investment are widely seen as:
  - Intentionally built an open and investable ecosystem. Conceived as an Ideas Lab, including a VC company.
  - Crowding in other private and public donors. The quantum push was backed by significant higher tier government investment – over £60m p.a. in the 2010s.
  - Clustering. All major quantum assets and firms reside within 5km radius, many within 1km.
  - Skills as well as hardware. Strong focus on co-op and internship programs.
  - Collaboration and patience to bear fruit. Benefiting from a founding board of entrepreneurs & academics.

Waterloo has a best-in-class founder-created 'clubhouse' community at the heart of its ecosystem:

- Its innovation centre benefits from resource into a backbone team of expert professionals to do all the leg work and who ensure a cohesive and inclusive experience for its 1,000 members. Public and private funded, it is a delivery partner for wider city and ecosystem services.

Source: The Business of Cities

Oxford learning from the world: San Francisco/Bay Area

- Scale and capacity building
- Diversification of investor base
- Anchor institution mindset
- Collaborative culture and incentives
- City centre transformation
- Enhancing quality of life
- Infrastructure investment
- Growth and development frameworks
- **Public-private agencies and coalitions**
- Policy support and prioritisation
- Social value and license
- Innovation brand and soft power

The Bay Area's recent resurgence has been driven by its access to AI talent, capital information, and processing capacity.

- Its economic and governance challenges through COVID-19 and beyond are well known, and competition from other US and international hubs has intensified. Yet the AI boom is seeing renewed clustering, with many firms opting for already built-out spaces in high amenity areas with robust infrastructure. The strong presence of corporate venture capital in these AI startups is making more startups creditworthy tenants for real estate, as many global parent companies in the region 'co-sign' leases.

The Bay Area's non-government leaders are now coordinating to provide a more organised business voice:

- The Bay Area Council and the Silicon Valley Leadership Group now work in tandem leading joint coalitions on infrastructure, housing and AI regulation. They each run dedicated platforms on AI policy and AI skills, to better align firms, universities and policymakers around AI, talent and competitiveness. They also advocate together for long-term investment.

SILICON VALLEY LEADERSHIP GROUP

BAYAREA COUNCIL

Source: The Business of Cities

The Business of Cities JLL

Oxford learning from the world: Cambridge (UK)

- Scale and capacity building
- Diversification of investor base
- **Anchor institution mindset**
- **Collaborative culture and incentives**
- City centre transformation
- Enhancing quality of life
- Infrastructure investment
- Growth and development frameworks
- **Public-private agencies and coalitions**
- Policy support and prioritisation
- **Social value and license**
- Innovation brand and soft power

Source: The Business of Cities

Cambridge is much more joined up than Oxford

- The city has benefited from more than 25 years of purposeful network-building via the 1,000+ member Cambridge Network. It is now in the habit of pooling resources across business, academia and local government to pursue a shared vision of growth that side-steps external projections of the city as elitist or exclusive.

Cambridge addressed its lack of business voice.

- Over 10 years ago a vision process in Cambridge identified that the business community had not found a consistent way to articulate its ambitions, needs and views for the future. In response Cambridge Ahead was established and has developed more members and breadth than Advanced Oxford has currently (50+ members, just 15-20% tech and life sciences oriented).

Cambridge now has a dedicated innovation convenor.

- Innovate Cambridge has helped to define the future of the region sciences and tech ecosystem. It was Founded by Univ of Cambridge, lead venture investor Cambridge Innovation Capital and Cambridge Enterprise. Its accomplishments include:
  - 200+ organisations have signed up to an Innovation Charter for Cambridge
  - It has produced a 10-year programme and an ambitious vision for Cambridge
  - It now oversees the city's innovation impact, formalising partnerships with innovation hubs around jobs & training
  - It organises large 400+ people Summits which encourage big moves, such as the Cambridge Pledge for founders, companies & anchors to commit to invest current or future social impact investment back into the-region.

Cambridge is building strategic partnerships across the UK.

- Innovate Cambridge and Cambridge Ahead established a partnership between Cambridge and Manchester, linking universities, business and political leadership. This has been possible because Cambridge has a Combined Authority to engage larger cities on equal terms

Cambridge is now bringing forward a large-scale innovation hub community in the city centre to function as a host, convenor and signal to the marketplace.

Mature ecosystems commonly have three tools Oxford currently lacks

1

Reach and resources for effective ecosystem network convening, activation and orchestration

2

Centrally located and connected districts offering a genuine centre of gravity for corporate innovation, cross-overs and community.

3

A vehicle to promote and attract investment into the city-region that has clout, calibre and pulling power.

Source: The Business of Cities

1 Network convening and activation: global exemplars have strong mechanisms to connect and orchestrate their ecosystem

Oxford's ecosystem network activity has been relatively fragmented, ad-hoc and under-resourced compared to others.

Mass Technology Leadership Council (Boston)

- A well programmed event network for region's tech executives, entrepreneurs, investors and policy leaders.
- Over 500 company members.
- Carefully designed peer groups, cluster groups, working groups and cohorts, as well as all-purpose events.
- Addresses gaps in the ecosystem – women in tech and science.
- Reducing the distance between entrepreneurs and policy leaders.

Communitech (Waterloo)

- Major hub building in region's largest Downtown.
- 1,000 members and hosts c.1 event per week in person
- Hosts corporate innovation labs.
- Funded by multiple levels of Government grant as well as corporate sponsorships (e.g., Google, Shopify), startup member fees, workspace facilities, and income from accelerator programs and consultancy, and hosting events or workshops.

Brainport (Eindhoven)

- All-purpose network builder, partnership builder and brand builder.
- Convening roles for early-stage tech entrepreneurs - eg The Gate, working closely with local colleges and Univs.
- Technology specific events - 5G, AI, additive manufacturing, and energy, providing platforms for professional development.
- Partner Fund – assembles £150m+ from region's tech business community, for projects relating to housing, talent and social programmes.

Source: The Business of Cities

2 Innovation districts: global exemplars are prioritising their connectivity and convening power

Oxford currently lacks well-connected locations that provide genuine centres of gravity, variety of real estate product for different contexts and sectors, and enabling of intensive networking and cross-overs.

Kendall Square (Greater Boston)

- 120+ biotech and life science firms, 60,000 jobs total.
- 50+ research programmes, incubators and accelerators and venture mentoring services.
- Large buildings (150,000m^2+) hosting shared workspaces, makerspaces, and affordable lab facilities. CIC offers large central venue for entrepreneurs to co-locate and customize workspace - 800+ clients and global links.
- Proximity to top-tier venture capital firms and angel investors.
- Two rail lines - Red Line extension and Blue Line – give access to airport in 25 mins and Boston city centre in 15 mins.

Central Station (Eindhoven)

- Transformation of 55-hectare railway station quarter into mixed-use, energy-neutral district.
- City centre hub for the convergence of tech, design and knowledge sectors.
- Focus on quality of outcomes and permeability across the district, integrated with the rest of the city.
- Less space devoted to cars, network of high-quality public spaces, green spaces and cycle routes.
- Landmark timber office and residential projects.
- 6,000 apartments in an area 4 times the size of Osney Mead.

Hetao (Shenzhen)

- Cooperation Centre - new policies enabling easier integration between Hong Kong and Shenzhen.
- Talent Special Zone - for foreign and domestic experts to work freely across border.
- Alignment of standards for 5G and IoT to smooth transitions from lab work to market-ready products.
- Convergence between sectors such as semiconductors, biotech and advanced manufacturing.
- Investment in state-of-the-art infrastructure, including advanced 5G networks, smart city technology and fully equipped lab space.

Source: The Business of Cities

3 City-region investment agencies: global exemplars have arrangements with clout and calibre

Oxford does not benefit from the economic development and inward investment capability others benefit from to convene genuine market intelligence, concierge and strategy.

San Diego Regional EDC

- Vision setting about inclusive growth for providing higher-quality jobs for more skilled workers
- Services provided
  - Regional prosperity: site selection, permitting and regulatory support, marketing/visibility, market strategy
  - Global competitiveness: trade mission to South Korea with 30 delegates
  - Talent attraction and retention: talent pipeline analysis to better match workforce with employer needs
  - Economic research
  - Interactive data mapping tools to inform development and investment choices
- Convenes industry task forces for major policies

Greater Basel Area

- Independent - funded by three regional governments, national government and private investors
- 10 representatives in six countries, 320 events in five years
- Focus on life sciences, robotics, AI, digital health and advanced manufacturing
- Services provided:
  - Investment attraction:1,000+ consultations with company founders per year
  - Innovation support: three accelerator programmes, 400 companies launched
  - Space provision: collaborative spaces and shared research facilities across three sites

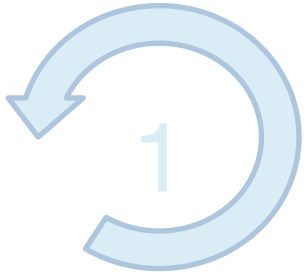
Waterloo EDC

- £2m+ per year, 55% funded by local government.
- One-stop-shop for businesses to expand – from location search, connections with professional services, data collection, networking, immigration fast-track.
- 12+ expansion investments per year, worth $2.1bn - including Toyota, Bosch, SAP, Siemens.
- 15+ outbound missions per year + 4 connections a year to key target markets.

Source: The Business of Cities

Cycles of change: many peers are further along their journey than Oxford

1st cycle



Core science and engineering strengths.

Ivory tower and heritage brands.

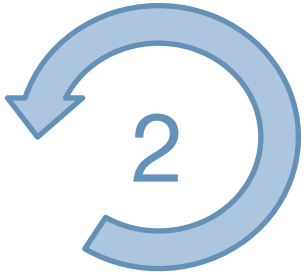
Reliance on university and visitor economies.

Token initiatives.

Early success at innovation showcases.

Small scale and sectoral networks

2nd cycle



Successful opening up of University and confidence in partnership.

Maturing networks, rise of serial entrepreneurs and big success stories leading to rising global interest.

Diverse set of new and retrofitted commercial locations, benefiting from planning innovation.

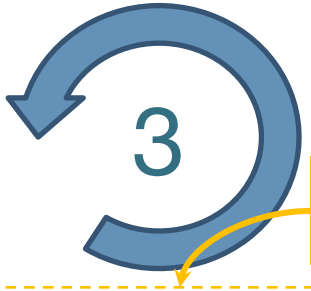
City centre and public realm enhancement.

Improved joint working among public authorities.

Intense (unmet) demand for housing, energy, water; rising unaffordability and congestion.

Piecemeal investment and promotion tools.

3rd cycle



More 3rd-cycle actions and approaches needed

Galvanising vision with maturing clusters.

Broad base of global investors, catalytic institutions, challenge funds.

An enhanced and expanded city centre acting as a centre of gravity.

Proactive business voice and commitment.

Innovation geography is more sharply defined, integrated and communicated

Technology, creativity and inclusivity converge in shared spaces and narrative.

Concerted promotion of city's needs to Gov and benefits nationally.

4th cycle?

Mature specialisms that define and signify what the city is uniquely good at due to confident in-market "DNA" and story.

Stronger 'whole city' growth platform.

Continuous presence and relationships with top global ecosystems.

More locations beyond the central city provide centres of gravity and magnetic experience with consistent quality urbanism.

Local and global reputations become more joined up.

Shared problem-solving among cities with similar endowments.

Source: The Business of Cities, JLL Research

Addressing the gaps

What does the Oxford ecosystem need next to keep up momentum?

Strategic goals	Enabling	Tactics and delivery
Oxford has a positive vision and a framework to match.	A high performing city centre with diverse commercial capacity.	A compelling “innovation map” oriented around Oxford
Deeper university and non-university alignment.	More diverse tenure formats, product mix and densities, supporting differentiated character to the region’s assets, matched by “designed-in” openness and invitation.	Simple videos, visuals and messages that capture the essential advantage of Oxford.
Innovation places with capacity and community.	More structures and people devoted to network orchestration and knowledge transfer.	Top-quality “bench-to-Nanopore” storytelling.
Public and Gov recognition of Oxford’s role and potential.	Several capable incubators, accelerators and challenge-led investment funds.	Creative community engagement to reach full set of voices.
Oxford story is broad-based and effectively joined up.	Pooled initiatives and levers for skills.	Coordinated inventories for Oxford to open up its range of assets, spaces and opportunities to far more people.
		Harnessing more (and more credible) champions.

Risks to avoid

- Complacency about competition.
- Oxford’s influence diluted by local government reconfiguration.
- The “San Francisco problem” of unchecked, entrenched and damaging inequality.
- Underselling the city centre’s long-term roles in raising productivity and profile.
- New suburban growth areas lack mix, quality of place, magnetism or use flexibility.
- Opposition to change prevails by default.
- Landlord competition and gatekeeping.

Source: The Business of Cities, JLL Research

Opportunities to use key catalysts

The **stronger working relationship between Oxford and Central Government.**

e.g.s
- build and sustain capacity to coordinate larger growth areas.
- potential for planning and governance tools that maximise potential for agglomeration and urban proximity
- embed government policymakers and development capacity in Oxford's innovation scene

Oxfordshire County Council · Oxford City Council · Vale of White Horse District Council · South Oxfordshire District Council · Cherwell District Council · West Oxfordshire District Council · Oxford Brookes University · Oxfordshire Local Enterprise Partnership · University of Oxford

HM Government

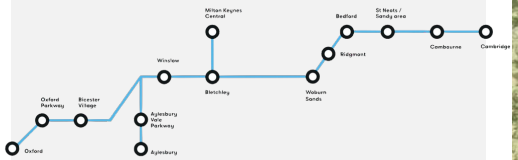
Botley Road bridge reopening as fresh impetus for City Centre and West End

e.g.s
- positioning the City Centre as the platform and gateway to the ecosystem
- public realm integration; 'Kings Cross calibre' wayfinding, street furniture, etc
- Business Improvement District and other collaborative models
- strategy to attract corporate flagships, innovation and R&D

East West Rail expands catchment, capacity and collaboration

e.g.s
- corridor development, priority growth areas, complementary specialisms
- scale up and retention opportunities for high growth firms,
- encourage messaging and positioning at a wider scale for investors and government

east west RAIL



Cowley Branch Line as enabler of tight clustering and critical mass

e.g.s
- Cowley Branch Line Opportunity Area for increased and optimised densities
- Economic framework for the City Centre to Cowley Arc as the expanded epicentre of the region
- Mixed use and place character to enable startups, SMEs and talent-friendly housing/amenity

Ellison Institute as global draw for frontier science

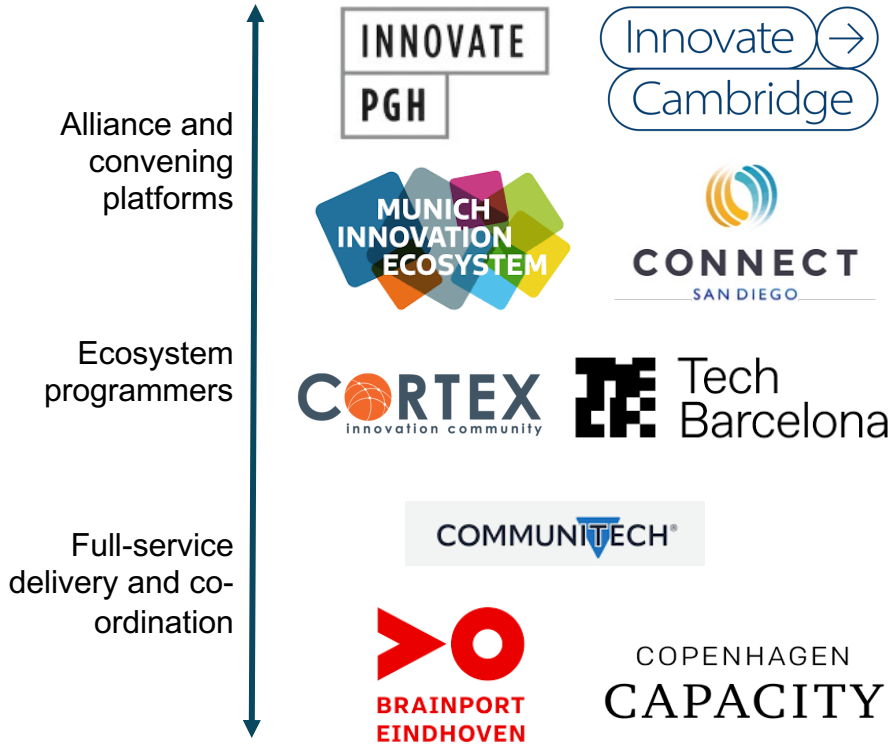
e.g.s
- Enhance Oxford's globally distinctive proposition for top class science and talent
- Interdisciplinary links with hubs e.g. the Life and Mind Building, Schwarzman Centre for Humanities, Institute for Pandemic Sciences.
- Increased researcher mobility across the ecosystem including for commercial endeavours
- Proactively avoiding a two tier local economy through inclusive skills, procurement, community.

Making the most of Equinox

Equinox is a welcome initiative inspired by the University of Oxford to try and address some of Oxford's coordination gaps.

The international experience of other collaborative initiatives to drive a city-region innovation system points to some common success factors:

1. Decisive purpose and clear mandate that is complementary to existing activities.
2. Recognised as neutral, with independent business, innovator and investor presence.
3. Core budget enables a full suite of roles and programmes in the ecosystem.
4. Small number of priority objectives, 'task and finish' working groups, outcome metrics.
5. Openness and porosity to a wide advisory tent.
6. In-sourced or collaborative capacity to do programmes, partnerships, and data/insight.
7. Mechanisms for mixed funding e.g. via projects, sponsors and members.
8. Clear standards for pace and openness – speed of decision-making and simplicity of access.
9. Convening power that leads to large unifying summits.
10. Voice to influence place narrative and development agendas.



Range of short-, medium- and long-term risks and requirements posed for Oxford

NOW

Short-term
priorities

Oxford(shire) needs to put its best foot forward to make the most of new Central Govt commitments and unlock delivery catalysts at pace.

Oxford needs any modified local governance arrangements to enhance and not relegate the interests and growth potential of an urbanising ecosystem.

Oxford's innovation scene will not project a sense of invitation, destination or opportunity without transforming the whole experience around Oxford station.

Businesses, employers and innovators are not yet recruited into a confident or concerted 'Team Oxford' approach. The risk is there is no clear voice.

Oxford needs to be able to attract a visible presence of flagship companies and amenities, to signal its technology and lifestyle proposition.

Medium-term
constraints

If Oxford does not convert its best-connected locations into genuine centres of commercial gravity and networking pulling power, its ability to host and signal to the global market will be weaker. Within the City Centre the Debenhams site is a prime opportunity to provide such an anchor.

Without a stronger economic development and investment capability that other cities benefit from, Oxford will not be able to tap into local intelligence and global opportunities in a strategic way.

Oxford does not attract or retain enough aspirational talent aged 25-40. If it is not widely viewed as exciting, inviting, creative or affordable enough, it will struggle to keep scalable businesses.

Oxford's innovation identity is diluted if it is disconnected from its rich human and cultural endowment - creativity, music, children's literature, fashion, river, car production, and much more.

Oxford's account of its positive impacts on the rest of the UK needs developing, if it is to gain more consistent endorsement and political licence.

Long-term
horizon

NIMBYs and nay-sayers. Oxford needs more coordinated responses to the city's many intelligent and resourceful opponents of growth, commerce and change. The voice of younger people and professionals is largely missing.

Spatial & social divides are tackled piecemeal and require public, private & philanthropic resources to be distributed in co-ordinated and long-term ways.

Collaborative place leadership will see Oxford more consistently tap into its colleges' leaders, champions, know-how, influence & capital.

Oxford needs more innovative and imaginative transport solutions – pioneering new routes, technologies, business models and demand management.

'Greater Oxford' needs to bring forward new standard-setting neighbourhoods demonstrating a compelling calibre of housing, resilience, community or inter-generational living.

Source: The Business of Cities, JLL Research

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Authors and Acknowledgements

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Founded in 2008, The Business of Cities is an urban intelligence firm that advises leaders in more than 100 cities, companies and institutions worldwide. It provides benchmarking, diagnostics and strategic analysis for cities, regions and innovation ecosystems, including Glasgow, Madrid, Philadelphia, Oslo, Sydney and Toronto. It also supports investors and asset owners on flagship urban projects, co-governance and placemaking priorities. It has been a content partner with organisations such as the Urban Land Institute, the OECD, the World Bank, UN Habitat, the Brookings Institution, the World Economic Forum, Connected Places Catapult and the European Investment Bank. For further information, visit thebusinessofcities.com.

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