Savills Tech Cities Index 2019

1. New York
2. San Francisco
3. London
4. Amsterdam
5. Boston
6. Singapore
7. Los Angeles
8. Austin
9. Stockholm
10. Copenhagen
11. Toronto
12. Seattle
13. Tokyo
14. Paris
15. Shanghai
16. Berlin
17. Beijing
18. Tel Aviv
19. Dublin
20. Hong Kong
21. Barcelona
22. Melbourne
23. Seoul
24. Shenzhen
25. Hangzhou
26. Chengdu
27. Santiago
28. Buenos Aires
29. Bengaluru
30. Cape Town

The Savills Tech Cities Index assesses more than 100 metrics to rank the 30 leading cities worldwide, from the volume of inward venture capital investment to the cost of a flat-white coffee

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Savills World Research

Tech Cities

Tech cities are leading the world. Testbeds for innovation and magnets for talent and venture capital (VC), they are not just vibrant places in which to live and work – they are also driving economies. The Savills top 30 Tech Cities are forecast to see gross domestic product (GDP) rise by 36% in the next decade, compared with 19% across other developed cities.

The third Savills Tech Cities Index measures more than 100 metrics to provide a ranking of the hottest tech locations worldwide (see panel right for details).

Access to a deep talent pool and its reputation as a global centre of commerce have propelled New York to the top spot, overtaking San Francisco in the process.

London took third place overall. It performs especially well on our 'buzz and wellness' metric, and the UK capital remains the dominant tech hub in Europe, with three times more VC investment in 2018 than its nearest rival, Paris. Amsterdam is hot on London's heels, rivalling its position as the global gateway to Europe. The Dutch capital is a vibrant global hub that benefits from a skilled, English-speaking workforce.

Strong competition is also coming from five Chinese cities that have been included in the rankings for the first time. Chinese tech cities are emerging fast, and now account for a higher share of VC than their US counterparts. Beijing recorded an average $34 billion of VC per year in the past three years – greater than New York and San Francisco. However, Shanghai is the highest-ranked Chinese city due to its international business environment and better quality of life.

Currently home to 291 million people, the 30 Tech Cities will add another 18 million residents in the next decade.

Top spot
*New York leads the
Tech Cities rankings*

As pressure builds on infrastructure, mobility becomes a critical success factor, prompting these cities to be at the forefront for shared mobility services such as self-driving vehicles.

To reflect this, our latest Index now includes metrics to cover this category. London ranks first for mobility overall, due to a combination of factors such as its integrated transport system. However, pollution remains a major issue, as does the ongoing challenge of upgrading the world's oldest metro system.

For shared mobility, Chinese cities take the lead – dockless bike-share schemes such as Ofo and Mobike originated in China. Asian cities are also ahead when it comes to their modern metro systems, which are among the cheapest in the world and have onboard wi-fi and air conditioning.

For the final mobility pillar – the quality of the urban environment – it is European

cities that perform well. Amsterdam, Copenhagen, Stockholm and Barcelona are among the world's most cycle-friendly, while their compact size allows for shorter commutes, easier access to amenities and a better work/life balance.

The trend for co-working space goes hand in hand with the growth of the global tech sector. In 2018, co-working providers accounted for 11% and 14% of office market take-up in Dublin and London respectively. The average monthly cost for a desk in a private office is $590, and is highest in San Francisco at $1,050. While it is an area of the market that is emerging fast, there is still room for growth. Even in US markets, such as Manhattan, total co-working space is estimated at just 2% of all offices. ∎

Turn to page 16 to read about the factors that define a tech city in the US and China.

"Access to a deep talent pool and the city's reputation as a global centre of commerce have propelled New York to the top spot"

WHAT IS A SAVILLS TECH CITY?

It's an important centre of tech within its region, a major recipient of VC investment, a vibrant city in which to live and work and a generator of, and magnet for, talent. It would also be on the shopping list for expanding global tech companies. The Index measures what makes a successful tech city. Our assessment for each city comprises more than 100 metrics, grouped into six categories: *business environment; tech environment; city buzz and wellness; talent pool; real estate costs; and mobility. Each category is weighted to reflect its importance to the tech sector.*

Business environment
● Investment
● Size of finance and business services sector
● Ease of starting a business

Tech environment
● Venture capital
● Size/value of tech sector
● Tech infrastructure
● Tech engagement

City buzz and wellness
● City wellness
● City buzz
● Cost of living

● R&D/innovation
● Physical linkages
● Cost of doing business (regulations, taxes, pay)

Talent pool
● Higher education
● Immigration and talent attractiveness
● City youthfulness

Real estate costs
● Cost of renting commercial and residential property
● Cost of co-working space

Mobility
● Shared mobility services
● Metro system
● Quality of infrastructure

When tech comes to town

Do US and Chinese tech cities share a pattern of growth? How does it shape local real estate?

US cities may occupy the higher reaches of the Savills Tech Cities Index (see page 14), but Chinese cities are rising fast, claiming a higher share of global venture capital investment in the process. Kevin Kelly, Senior Managing Director, Savills in the US, and James Macdonald, Senior Director, Savills Research, China, discuss the key attributes, technologies and influential companies that shape a tech city in their respective markets, plus the implications for real estate.

Is there a key attribute that defines a tech city – setting it apart in terms of innovation and investment?

Kevin Kelly Each tech city has its own story, but a common thread is the presence of great universities in the area. In California, Stanford and Berkeley have driven innovation and the growth of companies in San Francisco and San Jose.

However, when you combine these factors with quality of life, there are different drivers for different cities. For example, fewer people in their early 20s are moving to San Jose – they prefer San Francisco. This demonstrates that a city's ability to attract talent varies – quality of life and urban layout are big factors.

James Macdonald Beijing has the best universities in China, and these are a source of talent for tech firms as well as being incubators for new ventures. Hangzhou is the home of Alibaba and this has driven the tech economy in this city. It is also one of China's most liveable cities. Shenzhen constantly reinvents itself, from a centre of manufacturing to hardware and now to software and finance. It also has a dynamic and ambitious population of immigrants from all over China.

Simon Smith, who's based in Hong Kong and Head of Research for Savills Asia-Pacific, believes Hong Kong is becoming a fintech incubator because it is a global financial centre and the first staging post for Chinese financial services companies who want to expand internationally.

KK Even though it is one of the most expensive cities in the world, young people want to be in New York for its overall liveability as well as its tech reputation. Young, educated people, especially in tech, worry less about affordability for housing and other costs when moving to a tech city. For those starting a family, it's more complex. Even in lower-cost places, such as Austin, Texas, it's difficult to find suitable residential property downtown.

Which cities have developed tech specialisms and what are the implications for real estate?

KK In the US, the hotbeds for hardware are in Austin and Boston, biotech in Boston and San Diego, and music- and film-related tech in Los Angeles. This is often the result of a feedback loop with local universities. Clusters of businesses emerge from the computer science output of a particular college. That local specialism then feeds back into the curriculum. St Louis, Missouri, which is outside the top six in the US, 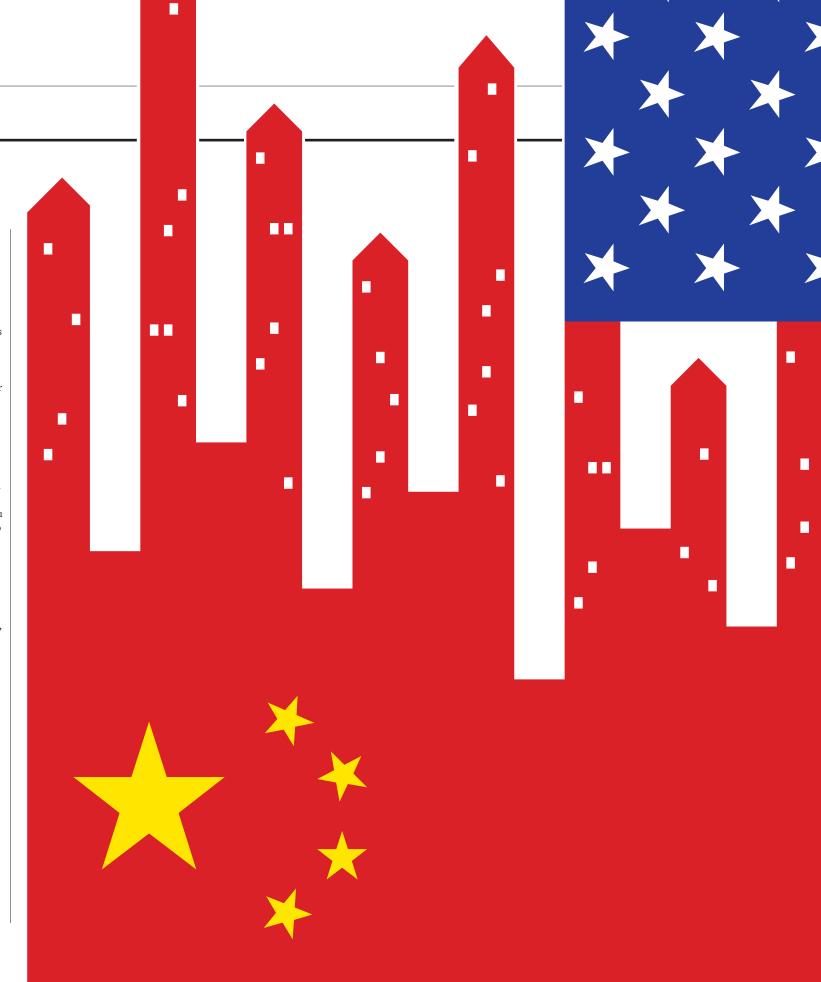has become a centre of expertise for security-related tech, while fintech is thriving in Atlanta thanks to Georgia Tech.

As companies cluster in micro-areas, the main real estate issue is rising rents. In New York, rents have exploded in Midtown South, an established tech location, and are now on par with traditional Midtown space. In San Francisco, space downtown is leasing at such a rate that if you are looking for a large block, you have to get in early and bid for it. Companies have to take into account what is most appealing not only for their existing employees, but where talent will want to live and work over the course of the lease. Take Austin, for example. Companies here would rather face the traffic to work downtown, where rents are $50-60 per sq ft, rather than locations that are $20 per sq ft but 15 minutes' drive away.

JM The Alibaba effect has made Hangzhou a hub for consumer-focused tech, thanks to the presence of the online shopping giant and companies who hope that being close to one of China's unicorns will boost them. Chengdu, in western China, offers cheaper labour than the eastern cities, so has become a low-cost, high-tech centre and a centre for business processing outsourcing, a big driver of the office market. Media and content are heavily regulated in China, so tech firms in this sector need to be close to the administration in Beijing. Shenzhen is home to a myriad of app developers and these smaller companies are often looking for flexible workspace.

These cities are top of the list for global tech companies. What factors drive their location decisions?

JM International tech companies choose China because of its market size and because the Chinese are willing to try new technology. That's why China leads the world in online and mobile shopping. A key factor for rapidly growing tech companies is the attraction and retention of talent. This means university cities, such as Chengdu, Beijing and Hangzhou, ›

"Raleigh, in North Carolina, is a rising star. It has great universities and a cluster of biotech companies"

are favoured locations. Shanghai is the financial capital and the most international mainland city, so it is a prime location for a company to locate its headquarters.

Simon Smith adds: "Hong Kong is Asia's most dynamic and well-rounded city, with a diverse international talent pool. It is a place people want to live and work in."

KK Despite the immense power of the big tech brands, such as Amazon and Apple, recruitment for talent is still highly competitive. Amazon initially picked New York and Washington DC as its new secondary headquarters, before later pulling out of the New York deal. It could have differentiated itself with a new and unique location, but instead chose two of the largest, most expensive cities on its list. Ultimately, scale was the most important factor. I think those New York jobs will now be incorporated into an expansion at a planned site in Nashville, Tennessee.

What is interesting about the Amazon decision is that, for other large tech firms, location choice is also driven by the need for employees to find housing. Traditional tech cities are all expensive, making places such as San Francisco difficult to raise a family and have a reasonable commute. For most metro areas, housing gets cheaper as you move out from the urban centre. But in the Bay area, costs remain extremely high even as you head out of the city.

How have the real estate markets of these cities responded as tech companies have become major occupiers?

JM China does not wait for business to make decisions about location; the government sets out areas where it wants to see certain kinds of businesses and development. Shanghai has been declared an AI [artificial intelligence] hub, so there will be zoning and incentives to ensure AI companies make it their home. Along the road between Shanghai and Hangzhou, a series of towns have been allocated specialisms to form a tech corridor.

KK Clustering is the most obvious way cities are being shaped, as tech companies grow to be major occupiers. This is happening much more within cities such as New York and San Francisco. It used to be that the fastest-growth tech was in the boroughs and outside classic urban residential areas. Now, in Boston, New York and Austin, this clustering is happening in proper downtown environments.

A second major trend is the expansion of co-working space, which has gone hand in hand with the growth of these tech cities. Co-working companies, such as WeWork, are themselves dominant occupiers, providing repurposed office space for young start-ups and incubators.

Tech cities are leaders in shared mobility services and pioneers in clean transportation. How have they responded to the challenges and opportunities posed?

JM China is the birthplace of bike sharing, with companies such as Mobike and Ofo leading the market. Ofo has more than 20 million users, mainly in larger cities such as Shanghai and Beijing. China's ride-sharing app market is also incredibly competitive, with a number of new apps competing with market leader Didi Chuxing, which bought Uber's China operation.

China is also leading the world in public transport development, with plans to invest

$300 billion in metro systems between 2010 and 2020. At 676km, Shanghai has the longest metro system in the world, and there is 120km of track under construction. The growth of public transport has been crucial for real estate development, which is often centred on transport nodes.

KK Shared mobility aligns with the innovation in tech cities, so they have become natural testbeds. However, they are finding it difficult to make it resonate with the existing transport infrastructure. This is partly down to human psychology: unless there is a cost or time saving for shared cars or bikes, it is difficult to take more time to do the right thing. We also see city planners struggling with oversupply, so this is going to continue to be a city-level debate with different answers in campus versus metropolitan cities.

Where are the tech cities of the future?

JM Guangzhou is the only first-tier Chinese city not in the Tech Cities Index and it has plans to become a centre for cross-border e-commerce. A new central business district and e-commerce hub is planned for the Pazhou district. The government also wants to develop regional centres. Xi'an in northern China is expected to benefit from this. The university cities of Wuhan and Nanjing are also contenders.

KK Raleigh, in North Carolina, is a rising star. It has great universities with computer science programmes – University of Carolina, Duke University – as well as a cluster of biotech companies. It is experiencing an explosion in hardware and software talent. IBM bought Raleigh-based software provider Red Hat for $34 billion – the world's second-largest tech deal.

A more unusual pick is Nashville. We looked at the ingredients that made Austin successful in the early days, such as scale of output, residential costs and nightlife, and then ran those metrics for cities today. Nashville came out on top. ∎

Keeping mobile

Nicky Wightman, Director of Global Occupier Trends at Savills, talks to Eugenie Teasley, Head of Cities at Uber, about how cities address future transport issues

Nicky Wightman: Transport is a key factor in a city's success. That's why the 2019 Tech Cities Index includes a category on mobility. Do you see a relationship between tech cities and interest for new types of mobility?
Eugenie Teasley: A city's mobility and its tech credentials don't always go hand in hand. Amsterdam was reimagining its streets to make cycling the mode of choice well ahead of the tech upswing globally. But in San Francisco, tech gets into everything, including mobility – you found JUMP bikes [shared electric bikes] there before anywhere else. The evolution of mobility isn't just about infrastructure, though, it's also about a government's approach to experimenting and allowing innovation in often highly regulated markets.

Cities struggle with moving millions of people around. Where do shared-mobility services such as Uber fit within a city's wider integrated transport system?
Our platform vision is to enable people to have seamless multimodal journeys, and to work with other

forms of transport – trams, metros, buses, subways. For example, we've just launched Uber Transit in Denver, Colorado, which provides real-time public transport information so people can decide what sort of journey would suit them best. We would love to see people move away from owning cars towards relying on shared transport.

Can car-sharing make poorly connected locations more economically viable from a real estate perspective?
A few years ago, if you lived in the outer boroughs of New York you had two options: public transport or your own car. Car-sharing has deepened the transport offer. Now, more than 50% of Uber trips in New York originate in the outer boroughs. In addition, we're also finding people in these areas use the service to get to and from transport hubs, complementing the existing public transit offer.

Elsewhere, we're seeing apartment complexes that have few or no parking spaces. This frees up space for other facilities, such as gyms and cinemas, while tenants who forgo a parking space receive credits to spend on Uber rides.

What does urban planning need to improve on to quicken the arrival of self-driving cars?

There are different challenges for different cities around the world. In the US, the grid system of most city streets makes it a lot easier for self-driving vehicles to navigate. In Europe and other parts of the world, however, the web of narrow streets makes it harder. So, in the first instance, determining a small number of key routes where self-driving cars could provide pooled rides, and ensuring there is suitable provision for clear pedestrian and cycling routes, will be key.

Abolishing parking minimums would free up both curb space and urban space, which would give smoother routes and allow for more sustainable urban design. San Francisco recently abolished parking minimums for future developments. In London, the Mayor wants to see "an appropriate balance being struck between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use". He also wants to see one in five spaces designated for electric-vehicle charging.

Do you see drones and vertical take-off and landing (VTOL) aircraft playing a role in future mobility solutions?
Yes, and we're actively working with aviation leaders to make this happen. As part of our Elevate programme we're convening aircraft companies such as Bell and Embraer, regulators and government agencies and real estate partners to make sure we are all working together. We've identified Dallas and Los Angeles as the first two cities to test 100% electric VTOLs with aims to launch a public service by 2023.