**Why Innovation and Talent?**

Over the past few years ‘innovation’ has become a buzzword for city success, and the real estate industry is catching on. Major corporations have long targeted talent-rich innovation hubs, but the ‘war for talent’ is now intensifying their focus on talent hotspots. Meanwhile, several large investment managers have started to explicitly target cities which are perceived to have a strong innovation system. But why is this the case? Is it justified and what are the implications for the real estate industry?

Innovation ecosystems within cities are key to driving productivity and in turn lead to economic growth and, by implication, to demand for real estate, particularly when combined with a high concentration of human capital. This relationship has been endorsed by a wide array of organisations including the ECB and the World Bank. JLL now puts this theory to the test from a real estate perspective.

In this latest report from JLL’s Cities Research Programme – *Innovation Geographies* – we explore over 100 cities worldwide to quantify their Innovation and Talent attributes. Our research confirms that cities which combine strong innovation capabilities and talent concentrations have outperformed in economic terms over the last couple of decades, but more interestingly it also reveals a robust link between innovation and talent-rich cities and real estate performance. Put simply, the top performing cities in JLL’s Innovation and Talent Concentration indices have recorded the fastest, most vigorous office rental growth over the past decade and are attracting a higher proportion of real estate capital.

There are now clearly compelling reasons for real estate professionals to include Innovation and Talent metrics when assessing a city’s real estate potential, combining them with the traditional measures of city economy and real estate dynamism relating to GDP, employment and population.

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1 See methodology on page 12
In Europe, the established world cities of London and Paris are joined in the top rankings by several mid-sized cities which are increasingly building a world-class reputation for innovation and talent. These include Munich, Berlin, Amsterdam and Stockholm. Interestingly, Munich places higher than Berlin, which has garnered far more attention recently as an innovation hub. Munich has a much more corporate-dominated innovation scene with established companies such as Siemens, IBM and BMW all having a significant presence. The start-up scene remains relatively small however, especially in comparison to Berlin.

In the Americas, San Francisco has company near the top of the table in the form of U.S. powerhouses San Jose (Silicon Valley), New York and Los Angeles along with the mid-sized cities of Boston and Seattle. Toronto is the sole Canadian city to make the global top 20, underscoring its strength in attracting FDI and also in developing a thriving start-up ecosystem.
Talent Concentration

Talent Concentration is not as evenly balanced geographically across the three global regions as Innovation, with the more mature cities and educational systems of the U.S., Europe and Australia pushing their cities higher in the Talent ranking. **London** is propelled to the top by its world-class universities and a highly educated workforce.

After London in prime position, the U.S. cities dominate the uppermost rankings: **Washington DC**, at third, stands out with one of the largest proportions of people working within the innovation economy – in part supported by demand for high-tech products and services by the federal government. The highest-ranking universities globally are based around the **Boston** and **San Francisco** Bay metro areas, helping to push these cities into the top echelons.

**Paris** comes in second in Europe, followed by several smaller cities that benefit from top-flight universities along with a highly qualified workforce; these include **Oslo**, **Zurich**, **Helsinki** and **Edinburgh**. Overall, European demographics are weaker than those of many U.S. and Asia Pacific cities; in recent years, countries such as Germany have combatted this with elevated levels of immigration. However, this is an ongoing structural issue which will potentially constrain growth in European cities over the longer term.

Global Top 20 Talent Hotspots

The Australian cities of **Sydney** and **Melbourne**, with their world-leading concentrations of talent, are the only Asia Pacific cities which make the global top 10. The attractive lifestyle offered by these cities helps to boost demographics which, combined with a robust university infrastructure and a highly qualified workforce, make them strong contenders on the world stage for talent. **Tokyo** is the other Asia Pacific city to feature in the global top 20, but a higher ranking has been held back by weaker demographics.
Introducing the city clusters

Based on JLL’s analysis of Innovation and Talent Concentrations, cities with similar characteristics have been grouped into six categories:

**Global Leaders**
The world leaders on both innovation and talent – a select group of nine cities. Includes: London, San Francisco and Tokyo

**Innovation Centric**
Strong performing on both metrics but with a tilt towards innovation. Includes: Beijing, Madrid and Toronto

**Talent Rich**
Strong performing on both metrics but with a tilt towards talent. Includes: Melbourne, Austin and Helsinki

**Balanced**
Average performers on both metrics. Includes: Charlotte, Auckland and Manchester

**Emerging Innovators**
Relatively strong performance on innovation but lagging on talent. Includes: Sao Paulo, Osaka and Dubai

**Transformers**
Underperforming but often with a change of economic base. Includes: Detroit, Manila and Bucharest

*See methodology on page 12
Source: JLL, 2019
Tokyo – A global innovation hub

Tokyo is a clear world leader when it comes to Innovation, generating the largest number of patents of any city globally – outstripping second-placed Shenzhen by over 80%. Tokyo is also the market leader in several diverse technologies from electrical machinery to nanotechnology, and globally is home to the greatest number of multinational corporations, which include Sony, SoftBank and Toyota. This is encouraging substantial levels of FDI and expenditure on R&D.

While Tokyo is at the top of the corporate league, it still needs to up its game in fostering an active start-up culture. There has only been one unicorn in the city – Preferred Networks – and it lags behind its peers in terms of the total number of start-ups.

Tokyo’s vibrant innovation-based economy has not gone unnoticed, with renewed interest from international real estate investors. Robust occupier conditions, including office vacancy at 1% and steady growth in office rents, have added to its appeal.


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<th>Global Top 10</th>
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Source: OECD Regpat Database
Austin – A liveable and affordable talent hub

Austin is a relatively small city of two million people (in its metro area) but is punching well above its weight on the global stage, with a young, well-educated and rapidly growing population. Known for its creative economy and quality of life, Austin has a thriving start-up culture and is increasingly attracting large global tech companies. Apple announced in 2018 that it would invest US$1 billion to build a new campus in Austin, adding 5,000 jobs and the potential for 10,000 more. Over 12% of the workforce is currently employed in ‘high tech’ industries and this number is expanding quickly. However, Austin does tend to lag on the ‘harder’ elements of innovation such as R&D expenditure and patent applications.

Austin’s status as a highly innovative city is matched by its reputation as an affordable and liveable destination. As such, its real estate market is drawing growing interest from investors and corporates alike. Office rental values have jumped by 17% driven by high levels of demand from corporates.

Case study: Talent Rich
Munich – A world-leading research centre

Munich has built up an established innovation ecosystem comprised of large global tech companies along with a burgeoning start-up scene. Established companies such as Siemens and BMW support the growing innovation economy, along with the Technical University of Munich. Venture capital funding over the past three years at US$5.8 billion is only marginally behind the US$5.9 billion raised in Berlin. In addition, Celonis – a data analytics company – became Munich’s first tech unicorn in 2018. On the more corporate side of innovation, Munich attracts a significant amount of high-tech FDI, particularly in the software and IT services industry. It is also the second largest generator of patents in Europe, standing only behind Paris, and is home to the European Patent Office.

The Munich office market has been extremely buoyant over the past few years as corporate demand has driven vacancy to its lowest level since 2002, which has been combined with robust rental growth (prime rents have grown by 25% in the last five years). International investors have taken note of Munich’s impressive performance, pushing the city into the global top 10 as a cross-border investment destination over the past couple of years.

Europe Top 10

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Source: OECD Regpat database
Real estate implications

Innovation attracts real estate investment
The top three city clusters – Global Leaders, Innovation Centric and Talent Rich – account for the vast majority of commercial real estate investment globally – approximately three quarters.3

This focus of capital on innovation-based cities was previously implicit in investment strategies, but it is now becoming an explicit part of strategy, and several major investors have announced that they are actively targeting innovation-oriented cities.

Innovation boosts real estate performance
Back ing up this interest from investors, there appears to be a strong link between a city’s Innovation and Talent attributes and its rental growth potential. Looking historically, the same three top groups have significantly outperformed in terms of office rental growth. Total returns also tend to be higher in these cities.

Prime Office Rental Change by City Cluster

Source: JLL, 2019

3 of the 109 cities covered in this analysis
Key takeaways for real estate

Investors
This research proves that innovation and talent should be explicitly included as key metrics in investment strategy alongside more traditional measures. As we move towards the end of a very lengthy real estate cycle, this is even more important as structural factors play an increasingly prevalent role in helping to identify those cities with long-term growth potential.

In this regard, it is essential for investors to recognise the different routes to the innovation economy, and tailor their strategies accordingly. The city clusters can be used as a tool to help assess the best strategies for each city. For example, Global Leaders are about wealth preservation and identifying new submarkets, whereas Emerging Innovators may provide an entry point for markets which have the potential for a structural uplift.

Investors and developers can play an active role in shaping a city’s innovation economy with bold urban transformation projects. These can facilitate collaboration, creativity and entrepreneurship while acting as the link between academia and business. However, it is crucial to gauge a city’s appetite for change – the role of city governance should not be underestimated.

Corporates
Corporates have long been targeting innovation and talent hubs; however, in today’s competitive environment this is becoming harder. Tight, more expensive labour markets along with a widening choice of cities globally on the innovation stage mean that the corporate decision-making process has never been more difficult to navigate. This analysis should support this process on a truly global level by:

- Identifying talent hotspots – Cities that are growing fast, but also provide access to young, well-educated workforces e.g. Bengaluru, Denver and Munich.
- Innovation potential – Cities with strong talent characteristics which have not yet realised their true innovation potential e.g. Bristol, Baltimore and Brisbane.
- Affordability – Cities that are relatively cheap in comparison to the strength of their innovation and talent base e.g. Austin, Melbourne and Helsinki.
Final thoughts

JLL’s latest research on Innovation Geographies highlights that the innovation economy has become truly global and impacts on cities regardless of size, maturity or location. The well-established Global Leaders such as San Francisco, London and Tokyo continue to dominate the global innovation ecosystem, but competition is increasing, particularly from several smaller, more agile cities, from Austin to Amsterdam to Melbourne; cities that are building impressive globally-competitive innovation ecosystems supported by exceptional talent pools.

But the biggest changes in the geography of innovation may still be to come. Our research reveals that China’s Tier 1 cities – Beijing, Shanghai and Shenzhen – now feature prominently among the top rankings for Innovation. These, and other Chinese cities, are becoming hotbeds for innovation, and we expect to see more Chinese cities in the global top 20 as they build sophisticated innovation ecosystems. Likewise, several Indian cities, like Bengaluru and Hyderabad, are moving up the value-chain and could well be future contenders for top positions provided they can meet their social and environmental challenges.

What’s next from JLL’s Cities Research Programme?

JLL has now developed a world-leading database on a diverse range of innovation and talent metrics tracking over 100 cities globally. This unique global dataset will enable JLL to continue to provide fresh insights for our clients into the rapidly evolving geography of innovation and talent, and the implications for real estate.

The geography of innovation is changing fast, not only globally but locally too, with the spatial footprints of the innovation economy within our cities also undergoing radical shifts. Traditionally associated with low-density business parks and large campuses on the edge of cities, the innovation economy is becoming distinctly urban.

In JLL’s next report on Innovation Geographies, we will assess the mix of innovation districts within our cities, drawing on case studies in 30 cities across the globe. Looking beyond the hype, we will assess what makes for a successful innovation district, and how real estate can contribute to the success of these new styles of urban environment.
Innovation Geographies

Methodology

JLL’s Innovation Geographies analysis includes two key elements:

**Innovation:** A broad definition of the ‘innovation economy’ has been adopted that takes an all-encompassing view of the wider innovation ecosystem beyond pure technology software companies. As such, life sciences, high value-add manufacturing and scientific R&D have been covered. Factors included in the Innovation Index are FDI in innovative industries, venture capital attraction, R&D expenditure and number of international patent applications.

**Talent:** ‘Talent’ has been defined as talent concentration – so this reflects the quality of the talent as opposed to just the sheer size of the labour pool. In this respect, smaller cities can offer access to high-quality workforces regardless of their size. Factors included in the Talent Concentration Index are the quality of the local higher education institutions, the demographic profile and employment in the innovation economy (as defined above).

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