Technology Innovation Hubs

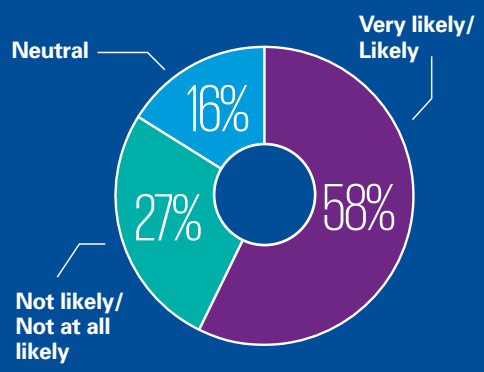
What technology company executives and venture capitalists should understand about selecting and investing in emerging global technology incubators

Competitors gain on Silicon Valley

For the first time in KPMG's global Technology Industry Innovation Survey, more than half of the respondents believe Silicon Valley will no longer be the technology innovation center of the world in four years. Despite all the positive business factors present in Silicon Valley, an escalating cost of living, questions about diversity and corporate cultures, high business taxes, an overmatched infrastructure, and even increasing scrutiny into data privacy and other business practices are contributing to the perception that Silicon Valley may not continue to dominate tech innovation in the coming years.

Locations outside the Bay Area are now common choices for new offices and innovation centers. Headline-grabbing announcements by several of the tech giants helped push U.S. cities New York, Boston, Austin, and Washington, D.C., up in the rankings in this year's survey. New York was voted as the global city most seen as becoming the leading technology innovation hub outside of Silicon Valley over the next four years. Other notable risers included Taipei and Paris.

Almost six in ten think the technology innovation center of the world will move from Silicon Valley in the next four years.



Percentages do not sum to 100% due to rounding.
Source: KPMG Technology Industry Innovation Survey 2019

Cities outside Silicon Valley seen as leading technology innovation hubs over the next four years

11 • Berlin, Germany | **12** • Hong Kong, SAR | **13** • Washington, D.C., U.S. | **14** • Paris, France | **15** • Tel Aviv, Israel | **16** • Amsterdam, Netherlands

17 • San Francisco, U.S. | **18** • Bangalore, India | **19** •Barcelona, Spain | **20** • Los Angeles, U.S. | **20** • Chicago, U.S.

Partial list of cities shown. Source: KPMG Technology Industry Innovation Survey 2019

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Several cities were again named in the top group, although some changed positions, such as Beijing moving ahead of Shanghai. Sydney, Toronto, and Shenzhen dropped outside the top 20 this year.

KPMG's survey reveals the perceptions of over 740 global technology industry leaders. When these views on the top ranked cities are juxtaposed with data-driven rankings from other sources, we can gain additional insight into the prospects of the technology innovation hubs. The publicly available indices we explored were these, and observations on select ranked cities follows:

– A.T. Kearney's 2018 Global Cities Report analyzes the outlook for a city's potential based on 13 metrics across the four dimensions of economics, innovation, governance, and personal well-being

– The Smart Cities Index by the EasyPark Group uses 24 factors to rank the world's most technologically savvy cities

– The Cities in Motion Index from the IESE Business School at the University of Navarra ranks the world's cities on sustainability and quality of life based on 83 indicators across nine dimensions

– Mercer's Quality of Living Rankings evaluates 39 factors affecting a city's quality of living

North America

New York ranked highly with only one outlier result (defined as a score outside the top 20). The fact that several of the tech giants are investing billions of dollars into new work spaces and placing tens of thousands of new positions in New York support the top ranking in KPMG's survey.

Boston and **Washington, D.C.**, both had outlier scores, but not as drastic as some of the other cities ranked in KPMG's survey.

Europe

Berlin performed most consistently, ranking between 11th and 18th in the KPMG survey and the other four indices. With no outlying results that all the other cities on the KPMG list have, an argument can be made that Berlin's potential as a future tech innovation center is underrated.

Paris, unranked in KPMG's survey last year, rocketed into 14th place this year and also scored very high ratings in three other indices. Its one outlier score is not as low as other cities, putting Paris firmly on the radar as a rising technology innovation hub.

Asia/Pacific (ASPAC)

Singapore's rankings across all indices were the most consistent among ASPAC cities. Even the two outlier results were not that low relative to other ASPAC cities.

Tokyo, **Seoul**, and **Hong Kong** all followed similar patterns. Each ranked well in KPMG's survey and the Cities in Motion Index. However, their scores fell significantly in the other three studies.

The remaining ASPAC cities only ranked highly in the KPMG survey. This suggests there are fundamental metrics that need to be improved to achieve sustained success as global technology innovation centers.

City index rankings

City	KPMG Technology Industry Innovation Survey 2019	A.T. Kearney Global Cities Report 2018	EasyPark Group Smart Cities Index 2018	IESE Business School Cities in Motion Index 2018	Mercer Quality of Living Rankings 2018
New York	1	2	14	1	45
Beijing	2	47	90	78	119
London	3	3	45	2	41
Tokyo	3	14	69	4	50
Shanghai	5	64	93	57	103
Taipei	5	38	55	Not rated	84
Singapore	7	5	41	6	25
Seoul	8	45	73	7	79
Boston	9*	8	9	21	35
Berlin	11	18	13	11	13
Hong Kong, SAR	12	54	89	9	71
Washington, D.C.	13	24	6	20	48
Paris	14	4	20	3	39
Tel Aviv	15	43	99	72	104

* While tied with Boston, Austin was only ranked in the KPMG survey

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Tech hubs spur economic growth

The factors conducive to fostering innovation in or around a particular geography are well documented. These elements coalesce into an environment where ideas, creativity, and collaboration thrive and include:

- A pipeline of skilled talent
- Urban locale that attracts Millennials
- Positive demographic trends
- The anchor of a research-intensive university
- An established base of tech parks or accelerators
- A history of successful start-up exits
- Favorable regulatory environment
- Generous tax and other government incentives
- Available investment funding
- Modern infrastructure, including high-speed bandwidth

But why would a city, or even a country, endeavor to become a technology innovation hub? With the pressing issues that many urban centers face like transit, crime, homelessness, climate change, poverty, budgetary pressure, etc., why should a city devote precious resources towards being a technology leader? Wouldn't it be easier to let someone else develop new technology and then leverage it after it becomes scalable?

The reason, recognized with a 2018 Nobel Prize, is economic. Paul Romer of New York University received the award for his contributions to endogenous growth theory, which postulates that investments in technological innovation, the knowledge sector, and human capital function as drivers of long-term economic growth. An increase in the number of people working in the knowledge sector increases the number of new ideas. This plethora of new ideas makes everyone else producing regular goods and services more productive. And when incremental annual economic growth compounds over decades, the effect is transformational.

U.S. and China still disruptors

Largely reflective of the survey's city rankings, the U.S. and China held on to the top two spots in the survey rankings for countries expected to produce the most disruptive technologies (23 percent versus 17 percent). However, the U.S.'s lead shrunk a little bit from last year when the U.S. garnered an eight-percentage-point difference over China for the top spot.

The U.K. and Japan were almost tied in last year's KPMG survey, with the U.K. edging Japan for fourth place. This year, however, while Tokyo and London tied for third in the city rankings, the U.K. as a nation created some separation to be voted in sole position of third. India went from third place to sixth this year.

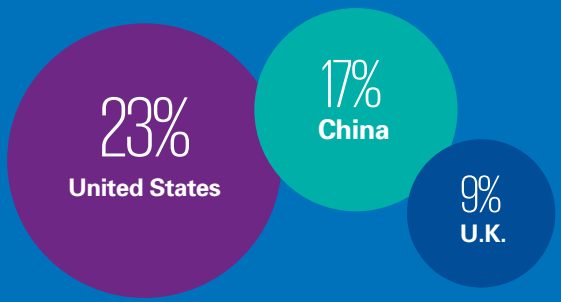
Similar to the exercise performed for the cities, third-party indices can be reviewed to gauge the perceptions in KPMG's survey against more data-driven analyses. One recent study is the 2019 Bloomberg Innovation Index, which analyzes dozens of criteria across seven metrics to rank the world's most innovative countries.

In their index, Bloomberg ranked the U.S. 8th, China 16th, the U.K. 18th, Japan 9th, Singapore 6th, India 54th, Germany 2nd, and South Korea 1st. All rankings except Singapore were different than the perceptions of KPMG's respondents, some substantially so.

In a longer-term outlook from First Round Capital, 57 percent of venture-backed startup founders believe the U.S. will (still) be the center of the tech world in 10 years, while 39 percent said China.[1]

[1] First Round Capital, State of Startups 2018

Countries that show the most promise for disruptive technology breakthroughs



6% Japan	4% Germany
5% Singapore	4% South Korea
5% India	4% Israel
	4% Netherlands

Partial list of countries shown. Percentages do not sum to 100%. Source: KPMG Technology Industry Innovation Survey 2019

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The global sports halo effect

As innovation decentralizes, there has never been a better time for global sports to showcase new technologies. Even if a city or country isn't widely regarded as a year-in-and-year-out tech innovation hub, it can attain this notoriety from the halo effect of hosting a global sporting event such as the Olympics or football World Cup.

Going back to 1964, the Tokyo Olympics were dubbed the "scientific Olympics" due to advanced electronic automatic timing, satellite and color broadcasting, and other innovations that were unveiled for the first time. This technology showcase in front of a worldwide audience helped launch Japan into a global leadership position in timing equipment, wristwatches, consumer appliances, and electronics.

In more recent examples, the first "social media World Cup" occurred in Brazil in 2014 after engagement records were shattered. The 2018 PyeongChang Olympics ushered in 5G networking, autonomous vehicles, and virtual reality. Buzz is already building around the 2020 Tokyo Olympics that are expected to feature facial recognition and drone security technology and 5G-enabeled high-definition streaming capabilities.

For more insight on how global sporting events as well as their ecosystems can help accelerate awareness and mass adoption of emerging technologies, read KPMG's Tech & Sports article series.

Next steps

Even in the digital age, location still matters. When looking to acquire a company; enter into a joint venture; or build a new HQ, satellite office, or R&D center, companies should assess the local environment, including:

– Is there a pipeline of skilled talent in the market?

– Is this talent pool supplemented by a research-intensive university or other innovation labs?

– Are the long-term demographic trends favorable?

– Is the locale attractive to millennials, who already comprise the largest segment of the U.S. workforce[2] and may constitute up to 75 percent of the global workforce by 2025, according to various reports?

– Is the prevalent culture of the new locale synergistic with the corporate headquarters?

– Is the infrastructure state-of-the-art, including available high-speed bandwidth?

– Is the mass transit system viable?

– Is the regulatory and tax environment favorable to technology companies?

– Is the cost structure of setting up shop and growing a business in the new locale consistent with the overall corporate plan?

– Are both public and private investment funding available?

[2] Richard Fry, "Millennials are the Largest Generation in the U.S. Labor Force," Pew Research Center Fact Tank (April 11, 2018)

About the research

The 2019 KPMG Technology Industry Innovation Survey, now in its seventh year, included responses from over 740 global leaders in the technology industry. Twelve countries were represented and 76 percent of the respondents were C-level executives. The online survey was conducted from December 2018 to January 2019.

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