High-technology Office Outlook

United States | 2014

What are the pros and cons when considering an urban market over a suburban one and how do the various characteristics help high-tech firms grow?

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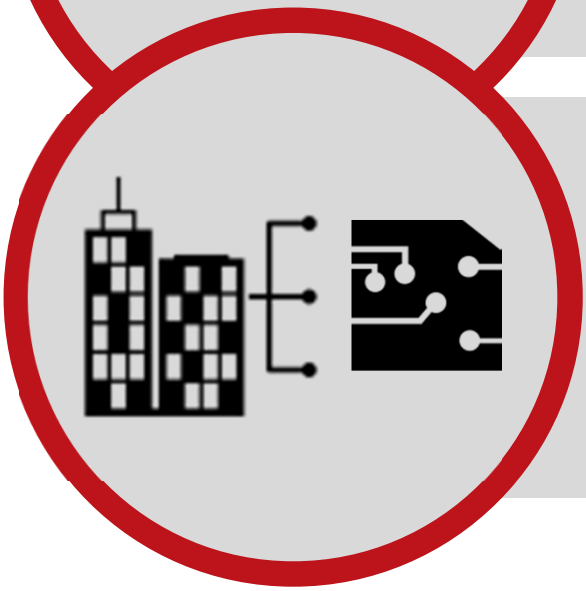
Key findings

Clusters are important: understanding the dynamics of the local labor market, the competitive wage environment, and the clustering of innovation are key for occupiers when considering expansion into new markets.

We're not in bubble territory, despite the headlines. Venture capital, while on the rise, is flowing to fewer companies at larger sums. Additionally, the stock market remains balanced with both high-volume / high-priced companies, and smaller-cap / growth companies, and no spike in IPOs.



The industry has had a profound impact on the office real estate market in this recovery cycle. Never before has an industry single-handedly shaped the way we work together and how we configure space more than the high-tech industry. This has had broad implications on location choice, investment strategies, and market performance.

In this report

Powered by versatile, next-generation mobile devices, today's high-tech generation has far greater connectivity to the internet than its predecessors. In 2013, Cisco reported that mobile data traffic was 18 times greater than global internet traffic in 2000, and most of it originated from smartphones. Media, entertainment, communication, and even social interaction have all been integrated into mobile devices and the internet can be accessed from anywhere in the world, anytime. The rise in consumer demand for digital content has been driving high-tech companies in a heated race to engage a broader audience for greater market share. As of May 2014, the time spent viewing digital media in U.S. households increased by 20 percent year-over-year, dominated by mobile devices. The platform has risen as a top channel for content delivery, outpacing the traditional channels of television and print. As the digital media ecosystem continues to evolve, traditional high-tech companies will need to quickly adapt to the changes in consumer demand in order to remain competitive against nimbler, more disruptive high-tech start-ups.

The idea of a connected lifestyle supported by the rapid emergence of smartphone and wearable technologies has led to another evolutionary change within the high-tech industry: the internet of things. Wristbands and watches that monitor biometric data or home security systems that allow you to lock and unlock your door remotely -- a decade ago this type of high-tech was not available on the consumer level. While analysts predict 2014 to be the year of smart hardware, it underscores the fact that high-tech giants such Google, Amazon, and Apple have also grown into sophisticated e-commerce platforms that complement their own hardware devices. In 2013 the IDC predicted that end-user mobile app revenue is expected to increase 144 percent by the end of 2017, while connectivity appears limitless.

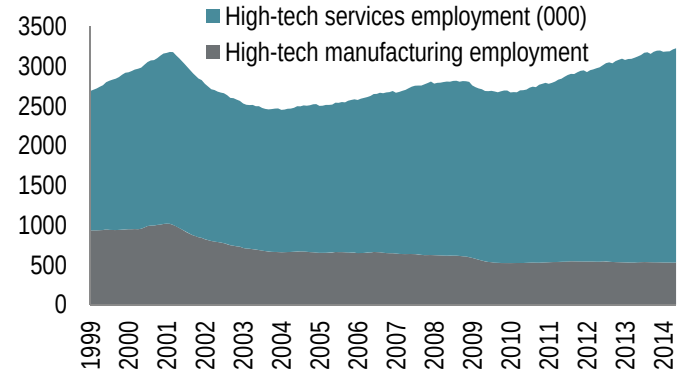
All of these trends point toward a more advanced technological landscape in the coming years. As companies grow and new companies emerge on the scene, their ability to remain nimble and flexible with the changing consumer landscape will be important; but perhaps just as important will be their ability to develop nimble and flexible real estate strategies to grow and prosper. Location strategy, workforce strategy, workplace design, and strategic real estate planning will all be essential, from start-up to public high-tech company.

This report will explore these trends in greater detail, considering the implications of locating within an urban or a suburban landscape. What makes a successful high-tech cluster? And what is the best location strategy for the myriad high-tech firms innovating and growing throughout the United States?

High-tech employment reaches new peak

Employment in the services and manufacturing components of the high-tech sector is now at its highest level ever, having surpassed the dot-com employment high in October 2013. Since then, the sector has added an additional 69,000 jobs, reaching 3.3 million positions as of July 2014. The focus on application and software development, web-based programs, and shared services defines the current high-tech industry boom, resulting in a stronger concentration in high-tech services jobs in this cycle than 15 years ago. The high-tech services component now makes up 83.6 percent of all high-tech jobs compared with 68.0 percent in 2001, when manufacturing played a larger role in the domestic high-tech economy and when fewer companies relied on offshore manufacturing operations to produce hardware and other components.

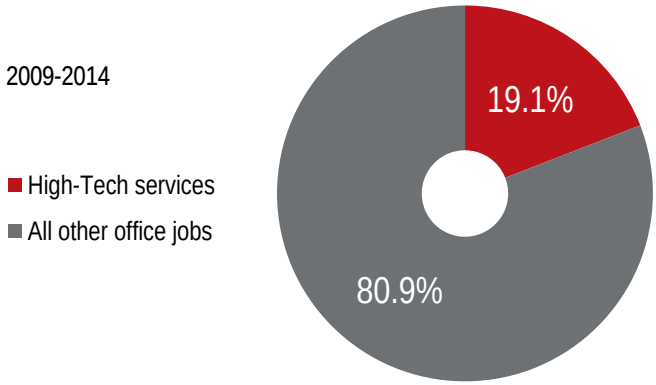
U.S. high-tech employment



Source: Bureau of Labor Statistics

Of the 3.3 million high-tech jobs, the high-tech services side of the industry employs more than 2.7 million people throughout the United States, and with a multiplier effect of up to four jobs per high-tech services job, an estimated 10.8 million additional jobs are supported by the industry. This side of the employment equation is more likely to include those working in offices and has the most direct impact on office leasing. The traditional office-using employment sectors (professional and business services, information services and financial activities) fully recovered from the financial crisis by early 2014, but of the jobs recovered, 19.1 percent were within the high-tech services sector compared with just 14.1 percent during the 2003 to 2007 period. High-tech is having broader impact on office employment, and the industry has been on the leading edge in the shift toward urban locations, innovative workplaces, and unique build-outs.

U.S. High-tech services share of office employment growth



Source: Bureau of Labor Statistics

High-tech should no longer be considered its own industry, however, as the skills and services performed by traditional high-tech companies are now infiltrating all businesses. Auto manufacturers are creating vehicles that are the equivalent of two-ton computers. Traditional retailers are building websites from the ground up to compete with virtual storefronts. Financial institutions are employing entire engineering teams to create mobile-banking applications that perform the basic functions of an ATM, minus the cash dispensing. High-tech's traditional job categories are still the most reliable way to track the momentum of the industry, but with almost all major employers and industries integrating software, hardware, and programming into their corporate functions, it is safe to say that high-tech is no longer a standalone industry, but an important component within all business models.

Wage wars and the competitive labor market

Tight labor supply is driving up the cost of labor within the high-tech sector. Nationally, the annual average high-tech wage increased by 1.8 percent in 2013 to $102,601; it increased by 1.9 percent in the high-tech services sector to $105,248. In several local markets where labor pools are tightest, these increases were even more pronounced (see the below table). For comparison, traditional office-using jobs saw wages increase by just 0.9 percent to an average of $70,997 last year. While high-tech positions are found within nearly every corporation, using our high-tech industry definition is still the best benchmark for measuring the cost of the highly-skilled workforce required to perform programming and engineering functions.

TOTAL HIGH-TECH EMPLOYMENT		
Market (ranked by wage growth)	High-tech average annual wage, 2013	High-tech wage growth, YoY
San Francisco	$156,518	18.9%
New York	$125,555	11.3%
Detroit	$81,520	9.9%
Seattle-Bellevue	$143,597	9.2%
Austin	$100,431	8.0%
Silicon Valley	$195,815	8.0%
Denver	$93,885	7.3%
San Diego	$106,087	6.7%
Chicago	$92,881	6.5%
South Florida	$67,687	6.4%
Los Angeles	$98,687	6.1%
Dallas	$82,880	5.8%
Central Florida	$74,874	5.4%
East Bay	$114,883	5.1%
Boulder	$105,112	5.0%
Charlotte	$98,380	4.9%
Raleigh-Durham	$107,542	4.7%
Pittsburgh	$76,741	4.2%
Phoenix	$91,507	4.0%
Boston	$125,979	3.6%
Minneapolis-St.Paul	$94,721	3.6%
Richmond	$81,065	2.9%
Indianapolis	$102,541	2.8%
New Jersey	$105,355	2.8%
Atlanta	$98,698	2.6%
Salt Lake City	$75,694	2.3%
UNITED STATES	$102,601	1.8%
Orange County	$97,289	1.7%
Baltimore	$102,959	1.5%
Philadelphia	$100,437	0.7%
Portland	$105,350	0.6%
Northern Virginia	$116,601	-0.4%
Washington, DC	$100,702	-0.6%
Suburban Maryland	$103,440	-2.2%
San Francisco Peninsula	$291,497	-5.1%

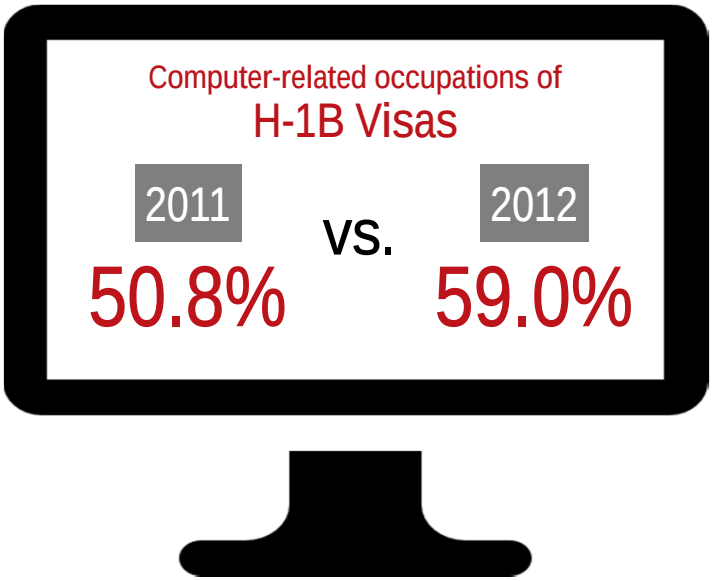
SERVICES ONLY HIGH-TECH EMPLOYMENT		
Market (ranked by wage growth)	High-tech services average annual wage, 2013	High-tech services wage growth, YoY
Silicon Valley	$214,117	23.6%
San Francisco	$155,795	19.3%
Austin	$85,002	19.0%
Los Angeles	$99,785	16.7%
Phoenix	$77,109	15.4%
New York	$126,317	11.5%
Detroit	$84,110	11.3%
San Diego	$107,315	9.8%
South Florida	$64,246	9.6%
East Bay	$124,697	9.5%
Seattle-Bellevue	$147,610	9.5%
Dallas	$69,861	9.1%
Denver	$92,082	8.6%
Chicago	$97,170	8.4%
Charlotte	$92,354	8.2%
Pittsburgh	$82,132	7.8%
Central Florida	$76,493	7.1%
Boston	$129,310	6.2%
Portland	$94,062	5.5%
Salt Lake City	$73,671	5.5%
Boulder	$112,681	5.4%
Orange County	$100,673	5.3%
Minneapolis-St.Paul	$94,868	4.1%
Atlanta	$98,450	2.8%
Indianapolis	$105,530	2.7%
New Jersey	$105,530	2.7%
Raleigh-Durham	$89,360	2.6%
Baltimore	$104,146	2.2%
Richmond	$82,170	2.2%
UNITED STATES	$105,248	1.9%
Philadelphia	$105,756	0.7%
Northern Virginia	$116,842	-0.3%
Washington, DC	$100,556	-0.6%
Suburban Maryland	$102,198	-1.5%
San Francisco Peninsula	$317,931	-5.9%

The supply of labor is constricted with only 298,746 students earning a science, high-tech, engineering, or math (STEM) degree in 2009 (latest data available, National Center for Education Statistics, 2014). While this is up by 22.2 percent from 2001, the struggle to find the right talent is the number one concern for most high-tech companies and for most hiring managers looking for high-tech talent. The need for talent has prompted a rise in training programs that focus on building programming skills, which could help fill the gap. In addition, dozens of free and for-profit programming classes are in place for students who are pre-college. The ubiquitous use of high-tech has sparked more interest among students and young people to learn the skills necessary to enter the evolving workforce, an excellent sign for the sustained growth of the industry.

Immigration reform could deepen the labor pool

The discussion around immigration has been quite focused, with lobbying groups backed by major high-tech firms setting up shop in Washington, DC to voice their concerns around the issue. While immigration reform has a number of components, the point of greatest contention for high-tech companies is the limitation on H-1B Visas, the visa that allows skilled workers from other countries to come into the United States to work. As a result of the tight labor market, only 1.8 percent of computer and mathematical professionals were unemployed in July 2014, many high-tech hiring managers believe an increase in the number of H-1B Visas would help loosen the squeeze on talent.

Only 85,000 H-1B Visas are granted each year, and combined with rollovers from previous years, this cap limits the talent pool for many high-tech companies. Of the nearly 300,000 STEM degrees earned in 2009, 15.8 percent were earned by non-resident aliens who, without an H-1B Visa, were not guaranteed a job in the U.S. upon graduation. And the demand for these work visas is quite high; 172,500 applications for the 2015 fiscal year were received within one week, one of the fastest rates ever recorded. The high-tech industry is a major proponent of these visas, as indicated by the number obtained by professionals in the industry: computer-related occupations accounted for 59.0 percent of the 262,569 H-1B Visa beneficiaries in 2012 (latest data available), up from 50.8 in 2011.

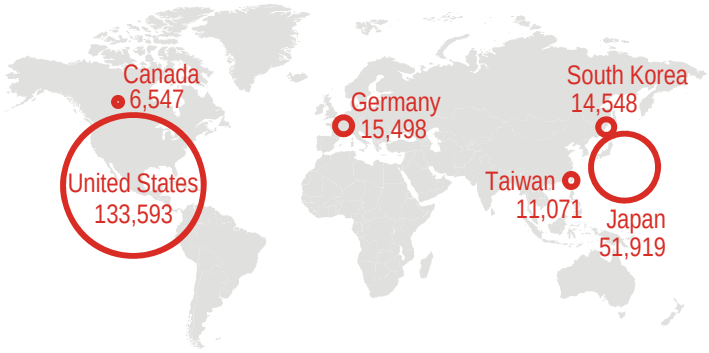


It all begins with an idea

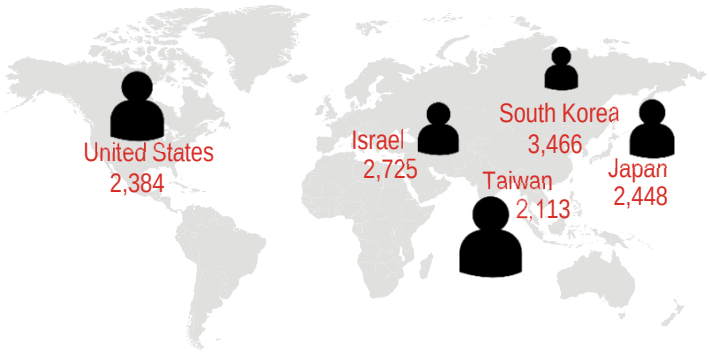
The United States is the clear leader in innovation, as measured by patent activity, with 133,593 utility patents registered in 2013. Coming in a distant second was Japan, with 51,919 patents. Looking at registered patents per capita, Taiwan takes the lead, with one utility patent registered for every 2,113 people. The United States comes in a close second, with one utility patent registered for every 2,384 people.

Innovation concentration is an excellent indicator of the cluster strength and may be a way for companies to determine which countries are good choices for growth opportunities. An innovation cluster supports the development of new ideas, and for companies who are looking to expand into foreign markets, it points to potential acquisition opportunities.

Total utility patents : Top 5 countries

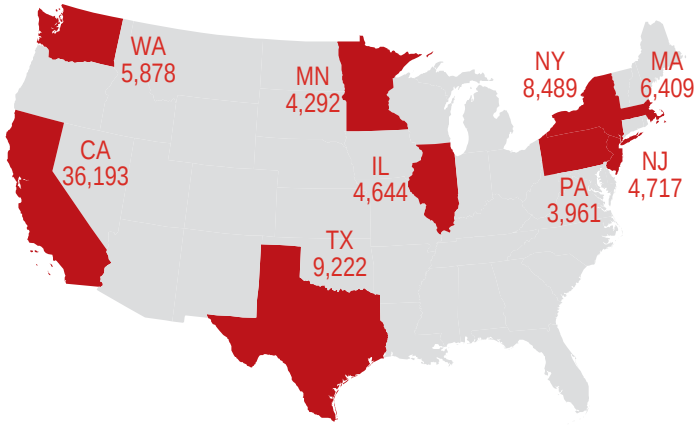


Utility patents per capita: Top 5 countries



Within the United States, California takes the lead for the most patents registered in 2013, with 36,193 patents, or 27.1 percent of the U.S. total. California is followed by Texas and New York with just 6.9 percent and 6.4 percent, respectively, of total U.S. patent generation. The top clusters for high-tech employment, start-up funding, and wage growth are nearly all located in these three states, home to Silicon Valley, San Francisco, Austin, and New York, areas where some of the most successful high-tech companies were founded in this cycle and the last 100 years.

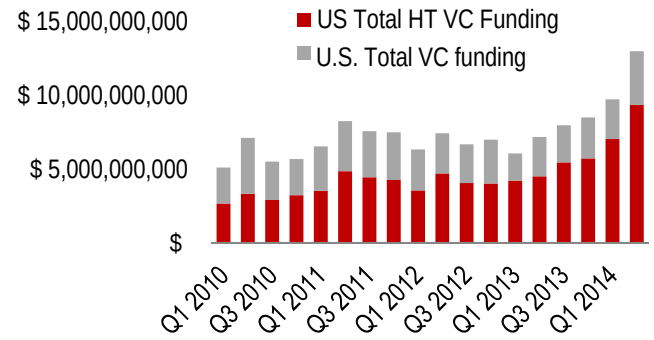
Utility patents by state: Top 10 states



Venture capital investment still far from dot-com high

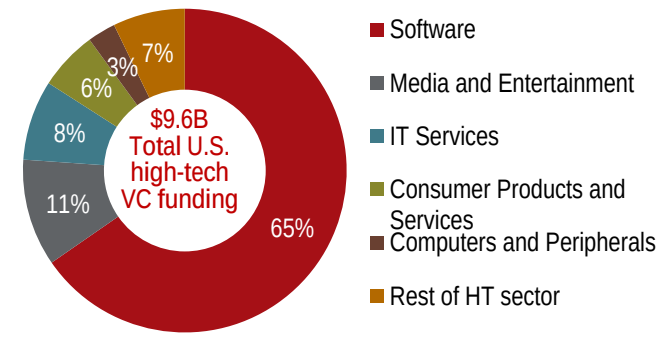
Venture capital investment has been on the rise over the past 12 months as investors remain confident in the overall health of the high-tech sector. From the third quarter of 2013 to the second quarter of 2014, the high-tech sector secured $24.7 billion in funding, 62.2 percent of total venture capital funding for all sectors. While this figure is significant, it is still well below the peak of 2000 when high-tech companies received $73.8B in venture capital. The software sub-sector consistently attracts the lion's share of funding; the increased consumption of data and demand for mobile applications has resulted in a 45.5 percent increase in funding. Additionally the expansion of high-tech into other non-tech industries as well as the rise in on-demand services like Uber, AirBnb, and Google Express is attracting more venture capitalists hoping to be early adopters of the latest innovation. Likewise, personalization is permeating other niche segments and on-demand services coupled with the growing popularity in wearable high-tech has led to an increase in funding of consumer products and services by 14.6 percent on a four quarter trailing basis since third quarter 2013.

U.S. VC funding vs High-tech funding



Source: PricewaterhouseCoopers

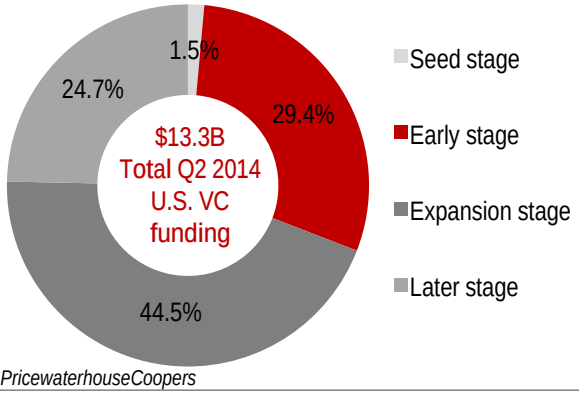
VC funding by High-tech sector



Source: PricewaterhouseCoopers

There has been a shift in where investors are placing their capital. Early expansion, and late-stage funding rounds have grown as institutional venture capital firms look to chase higher returns by placing more capital toward established, fast-growing companies. From the third quarter 2013 to the second quarter of 2014, early, mid, and late-stage funding rose by 64.8 percent and over the past five years the U.S. has recorded some of the largest funding rounds in venture capital history. Further fueling the growth engine, hedge funds and private equity firms have joined venture capital firms, adding to the significant amount of capital available for high-tech companies. This has resulted in a number of well-funded companies expanding their real estate in high-tech hubs so that they can aggressively grow their businesses, especially if their business models are immensely scalable. With the current private investment market placing more value on user-base over profits, funded companies have cash on hand to grow by bolstering engineering and marketing teams and expanding into new markets, all of which has had a direct impact on overall employment levels and commercial real estate conditions. With the current high-tech IPO pipeline expected to exceed 2013, high-tech funding will likely remain robust for the next 12 to 18 months.

VC funding by stage of development



Source: PricewaterhouseCoopers

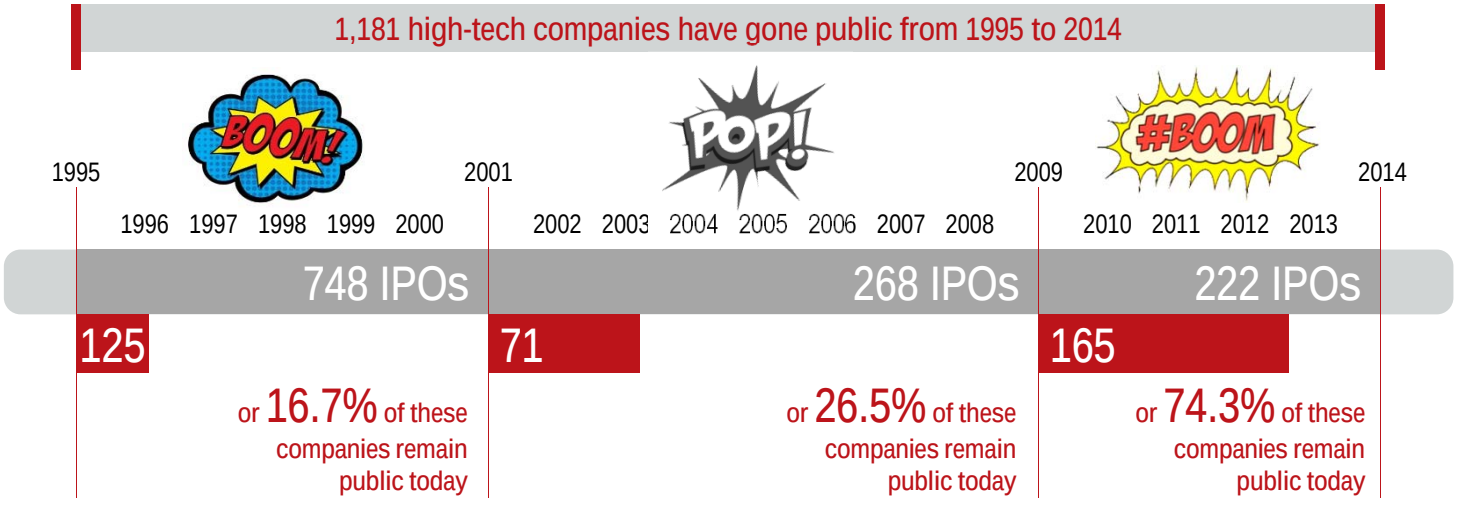
IPO activity remains muted compared to dot-com bubble, but drives significant growth of the stock market

With a total market capitalization of more than $5 trillion, the high-tech industry comprises 15 percent of the combined NASDAQ and New York stock exchanges, beating out sectors such as finance, consumer services, energy, and healthcare. With more than 200 companies going public since 2010, that brings the total number of U.S.-listed, public high-tech companies to 682, or 10.4 percent of all companies. The combined impact of these companies on the stock market and promise of high returns in the future are contrasted sharply by the industry's much smaller share of total employment at just 2.8 percent. The financial impact of a relatively small, but highly-skilled industry further affirms the domestic, and arguably global, shift toward an economy based on innovation. (*NASDAQ.com as of 7/25/14)*

Cap	Range	Total number of firms	Total market cap	Total number of high-tech firms	Total high-tech market cap	% high-tech market cap of total
Mega	$200b +	17	$5,075,721,559,704	4	$1,754,702,519,836	34.6%
Large	$10-$200b	612	$23,533,824,248,444	68	$2,650,849,622,622	11.3%
Mid	$2-$10b	1,098	$4,977,448,070,552	149	$628,925,857,524	12.6%
Small	$300m-$2b	1,889	$1,613,827,951,074	235	$205,996,596,473	12.8%
Micro	$50-$300m	1,527	$234,878,340,486	152	$23,458,390,266	10.0%
Nano	<$50m	1,452	$15,441,043,135	74	$1,882,136,019	12.2%
Total		6,595	$35,451,141,213,395	682	$5,265,815,122,740	14.9%

Risk and growth potential evenly dispersed among public, high-tech companies, but mega caps maintain a leading share

In the first half of 2014, 37 high-tech companies went public for a total of $6.6 billion in proceeds. The IPO roster included companies like Arista Networks, Sabre Corporation, and Zendesk, contributing to a market capitalization of $45 billion, representing 16 percent of the year's total. On the overall list of public high-tech companies, four of the 17 mega cap (or blue chip) companies are household names like Apple, Microsoft, and Google (which performed a stock split in January and now trades under both GOOG and GOOGL). These companies represent some of the more revolutionary technologies and innovations of the modern era and unsurprisingly are some of the largest companies in terms of real estate. As many more continue to grow in size and value, like Facebook, Oracle, Yahoo!, and Salesforce, commercial real estate will continue to be a fundamental tool for company growth as well as an asset in its ability to further innovate.



Source: Renaissance Capital, NASDAQ.com

Market caps and IPO volume are misleading metrics when measuring the health of a company or an entire industry. While it offers public investors the opportunity to buy a piece of a hopeful blockbuster, an IPO is a way for companies to tap into public capital for expansion, reinvestment, or the ultimate goal, a financial exit. Lest we forget high-tech's predecessors from the dot-com era, since 1995, 1,181 high-tech companies have gone public, which includes 748 IPOs from 1995 to 2001. Of that high-tech class, only 125 still remain on the stock market in their original form, a mere 16.7 percent. Comparatively, of the public offerings dating from 2009 through 2014, 165, or 74.3 percent, of the 222 companies remain on the stock market. While this includes companies like Zynga and Groupon, which many would consider flops, it reveals a more restrained environment where companies work hard to prove success before enlisting public money to prove it.

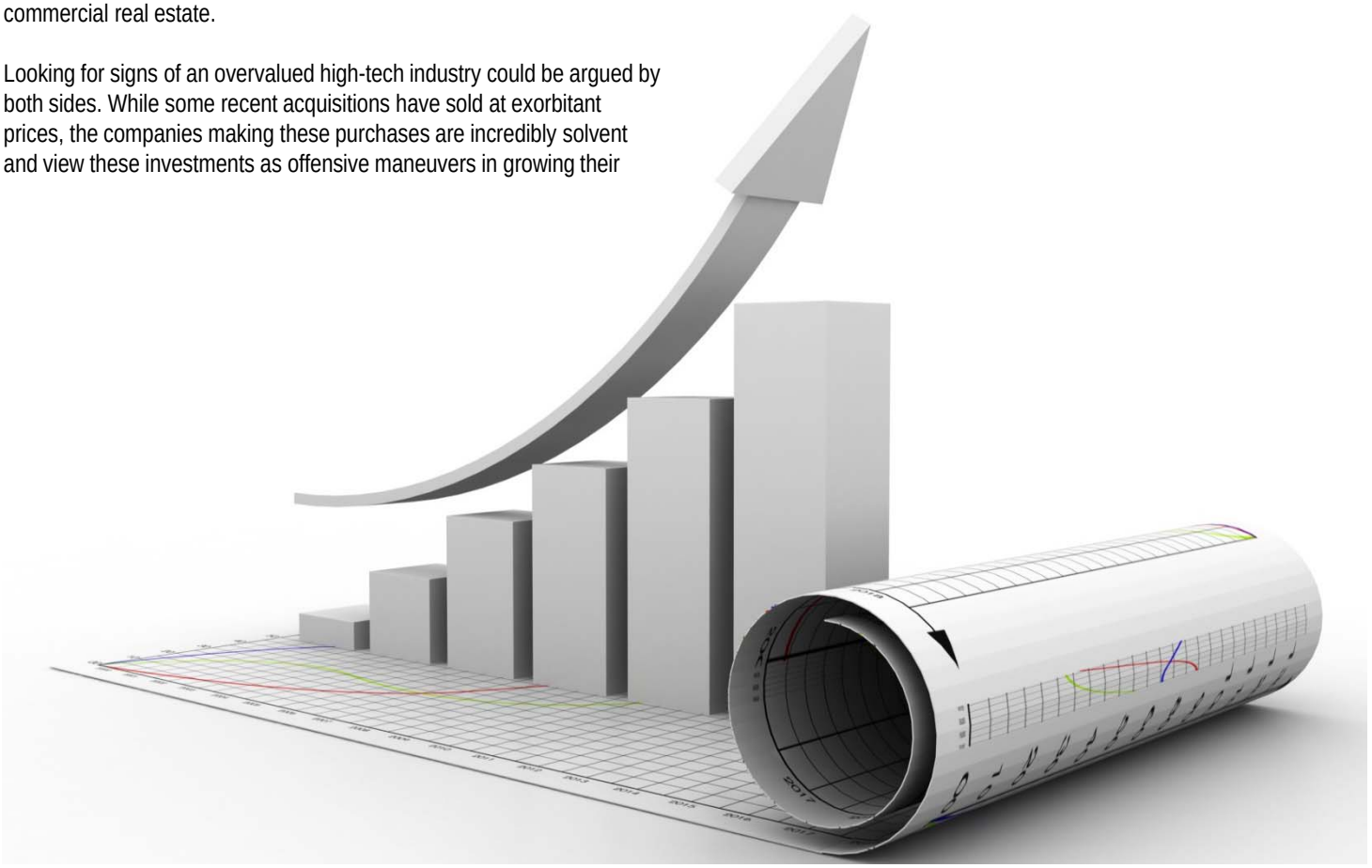
Dot-com era high-tech companies make up a fraction of today's American stock exchange

Different this time, however, are the mega-acquisitions that have made headlines for their price tags rather than their savvy. As companies explore exiting options and hope for the elusive billion-dollar deal, acquiring companies are looking to maintain their innovative edge by purchasing new technologies that expand their user base and increase market share. The infusion of young talent and acquisition of start-ups' technologies help companies to maintain their leading position, especially when cornering a niche market like cloud computing, search, or social media. And while it may appear as though acquisitions reduce the number of start-ups in the market, the successes of these parent companies often result in new spin-offs and start-ups, which continually replenish the industry with new innovation and fuel the market for commercial real estate.

Looking for signs of an overvalued high-tech industry could be argued by both sides. While some recent acquisitions have sold at exorbitant prices, the companies making these purchases are incredibly solvent and view these investments as offensive maneuvers in growing their businesses rather than defensive attacks to claw back market share. Additionally, start-ups simply aren't tapping the public stock markets for capital at the same level seen in 2000. While there's certainly much hype to be questioned about some new technologies and products, the continual innovation and discovery made by this industry will be a leading driver in the future of the economy as businesses, life and people evolve. With successes come failures and the industry today is one of big ideas and fearlessness, a stark difference from older and more traditional industries.

Top 15 acquiring companies	
Cisco	161
Google	154
Microsoft	134
IBM	120
Yahoo!	107
Hewlett-Packard	86
Oracle Corporation	86
AOL	63
EMC	59
Intel	57
Apple	49
eBay	48
Facebook	48
Amazon	45
Adobe Systems	38

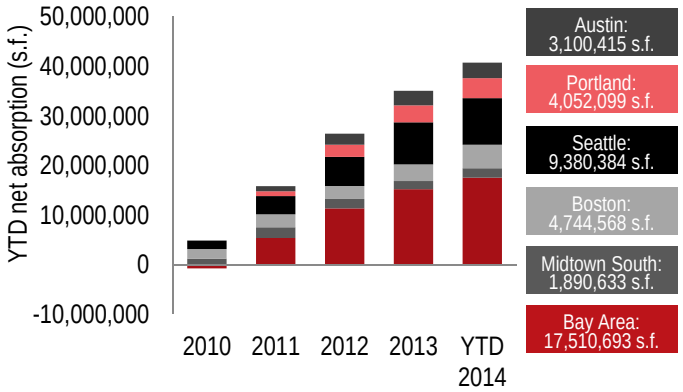
Source: CrunchBase



High-tech steadies the office market recovery

Halfway through 2014, the U.S. office market continues to demonstrate signs of a more sustained and broadening recovery. Improving macroeconomic conditions have enhanced corporate sentiment, leading the way for hiring in an increasing number of industry segments and geographies. With these new jobs comes the demand for more office space; Q2 2014 net absorption jumped to a recovery-high of 13.9 million square feet and vacancy dropped by 30 basis points to 16.3 percent, even tighter at 13.7 percent for CBDs. For the high-tech sector, these numbers define the resiliency of an industry that has contributed to 29.2 percent absorption since 2010, while at the same time supporting an increasingly landlord-favorable market that's shrinking in supply.

Cumulatively, these markets have seen occupancy gains of 40.7 million square feet, or 29.2 percent of national absorption



Source: JLL Research

In response to this constraint, developers have honed in on high-tech markets as promising investments for speculative construction, hoping to capture the upswing of this real estate cycle. Of the 65.4 million square feet of space under construction across the country, 14.2 million (21.7 percent) is underway in the tech-heavy markets of the Bay Area, Midtown South in New York, Boston, Seattle, Portland, and Austin, which will come online over the next four years. Importantly, the current construction cycle nationally has been characterized by strong levels of preleasing compared to the mid-2000s. For tenants, this means that the relief valve will not do much to create new opportunities at the bargaining table with landlords, and the space that does come to the market will command a premium not only for quality, but also scarcity.

65,400,000 square feet of space is under construction across the country

Coming online over the next 4 years

21.7% or

14,200,000 square feet of that space is in the tech-heavy markets

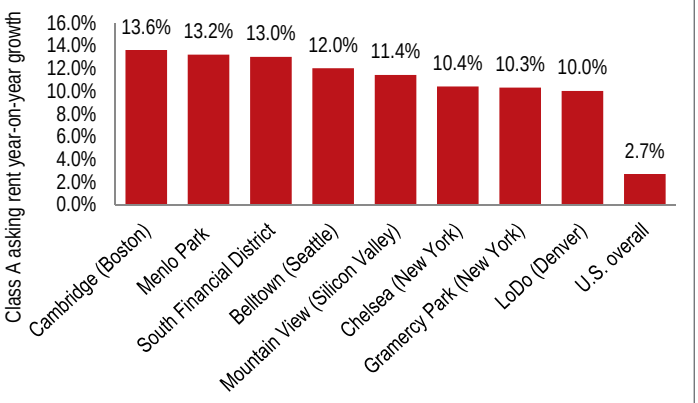
Bay Area
Portland
Boston
Austin
Midtown South in NYC
Seattle

Secondary high-tech markets will begin to take the lead, as will emerging geographies

Tightening conditions have been beneficial for secondary high-tech markets as well as tertiary corporate markets not regarded during earlier years of the recovery. Google's 105,000-square-foot lease at 1000 W Fulton Street in Chicago, for example, is representative of recognized firms' expansion outward from high-tech epicenters to attract new talent at lower labor and real estate costs. In some geographies, these companies have become anchors for new clusters in markets where high-tech is not a driver of the local economy. In Atlanta, MailChimp's prelease at Ponce City Market has paved the way to create a niche in a hyper-diverse market that can attract the young, entrepreneurial employees that these companies crave. Further, this is occurring within a property that has undergone extensive renovation and features many historic and aesthetically pleasing elements desired by high-tech tenants.

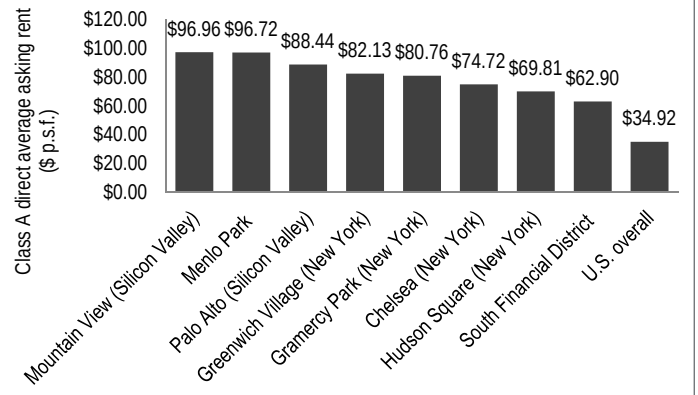
Shifts to affordability can even be seen in core high-tech markets. Upon its expansion to Portland, Salesforce was able to take advantage of a market with Class A rents 58.5 percent lower than in San Francisco, but also where employment is growing by 8.8 percent in computer systems design. This does not mean that the Bay Area is out of the equation; on the contrary, Salesforce's 714,000-square-foot prelease at 415 Mission Street shows the firm's continued commitment to San Francisco.

Rents in many of these submarkets have jumped more than 10.0 percent year-over-year…



Source: JLL Research

…resulting in some of the highest asking rents across submarkets nationally



Source: JLL Research

Finally, the emergence of high-tech clusters mixing with traditional industry concentrations and a new, digital business model has had a beneficial impact on the office market. Los Angeles' Westside is home to a burgeoning group of companies at the confluence of high-tech and entertainment, long the mainstay of the metro area. Video game creator Riot Games, which leased 77,000 square feet at 12312 W Olympic Boulevard, is likely to be joined by Google as well as advertising mogul RPA, both of which are actively looking for space nearby. As high-tech intermingles with traditional segments of the economy over the coming years, these types of clusters and growth sectors are likely to become much more common in markets throughout the United States.

High-tech will remain a key component of the office market, but its share of gains may decline slightly

Over the next 24 months, by which point the U.S. office market as a whole is likely to peak, high-tech will continue to drive occupancy gains, tenant demand, expansionary activity, and even preleasing in certain markets and submarkets.

In absolute terms, the industry is still in expansionary mode, as evidenced by consistent year-on-year job growth of more than 4.0 percent as well as the more than 5.7 million square feet of net absorption in core markets seen in 2014 alone. Innovative and new technologies will be increasingly crucial components in the next phase of the economic cycle and will be responsible for a significant share of activity. However, recent economic growth seen across the country means that tech's share of absorption and other fundamentals may decline. Nonetheless, it remains a formidable driver of the economy and will continue to impact office markets across the country.

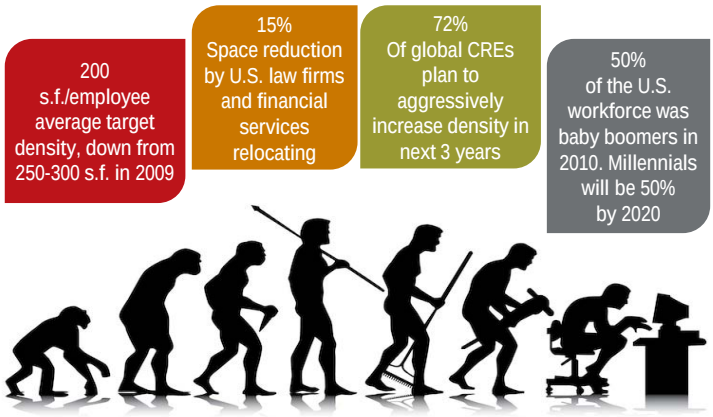
High-tech is on the leading edge of workplace change

Because so much of the early demand for office space coming out of the recession was driven by high-tech companies, so the industry's workplace design preferences are now permeating broader changes within the commercial office landscape. Open plans, a mix of collaborative and private workspaces, and flexible furniture designs all in the name of innovation and productivity define the 21st century workplace.

Many high-tech companies are largely staffed by millennials, and their workplace preferences are driving the trend toward denser work environments, in both urban and suburban settings. The typical buildout in the late 20th century of 250 square feet per person has shrunk to an average of 200 square feet per person today. As millennials make up a larger portion of the total workforce (50 percent by 2020) their workplace preferences will continue to drive the trend toward higher density. However, there is a point of diminishing returns and finding the right balance between open and private space is key in creating desirable workplaces that still foster creativity and innovation.

Landlords are adopting creative buildouts in their assets across the country in order to attract high-tech tenants and others in creative industries. Open ceilings, unfinished floors, removal of window-line offices, and restoration of original architectural details are becoming commonplace. Landlords with traditional suburban buildings are also finding creative ways to build attractive environments including constructing outdoor sports areas, adding an amenities building with retail or fitness facilities, and adding pathways within the campus to create a more walkable environment.

Demographics and technology drive productivity and utilization and the next evolution of office space use.



Has urbanization killed the suburbs? *We think not…*

The urban versus suburban debate has been waged by economists, businesses, and industries over the last several years in an attempt to understand the successes and failures within local markets that range anywhere from employee attraction and retention to business creation and expansion. For the high-tech industry, understanding this phenomenon is paramount to a company's sustainability and growth, but the question of which one is better is not as simple as that. Some suburban markets, like Silicon Valley and Dallas are enjoying economic recovery and expansion far ahead of others as a result of unique attributes and amenities that appeal to both employees and employers. And urban markets like San Francisco and New York, which have always maintained a cool factor, are unsurprisingly producing high-tech innovators that would never consider relocating to a neighboring suburb for fear that they would lose their edge and potentially their best and brightest employees. So what are the pros and cons when considering an urban market over a suburban one and how do the various characteristics help high-tech companies grow?

Are the suburbs dead?

It is true that there remain many recession-ravaged suburbs throughout the U.S., still recovering from lost industries and company shut-downs, which have left real and lasting unemployment and economic despair, and urban dwellers would happily portray dense living and plentiful amenities as far more culturally satisfying and exciting. However, there are many markets that offer a highly desirable suburban lifestyle with a low cost of living and many available jobs, and there are even more markets that offer suburban living surrounding an urban core, providing people with the best of both worlds.

Downtown Palo Alto, located in Silicon Valley, has enjoyed such high demand in recent years that the office market is just 3.6 percent vacant with an average asking rate over $86 per square foot, beating New York City's Plaza District at $85 per square foot. Its quaint downtown strip on University Avenue with restaurants and shopping, its year-round, outdoor-friendly weather, and its proximity to both universities and neighboring San Francisco have established it firmly as a much-desired suburb. Its only downside is the high cost of living. Austin, however, offers access to talent with nearby University of Texas, Austin, walkable amenities both downtown and in South Austin, and a highly favorable business environment that is perfect for a start-up. Not only that, but average rental rates for apartments are 38 percent lower than New York City and 66 percent lower than San Francisco, according to Arcayibes.

What's so great about urban living?

There are a lot of reasons that urban dwelling has been revived in recent years: the increasing desire to walk or take public transit rather than drive, the multi-faceted lifestyle that offers theater, arts, and nightlife, and the move toward fewer belongings that smaller spaces can accommodate rather than expansive homes filled with objects. Urban cities today have become incredible destinations that resemble nothing of the dirty and polluted streets that led, in part, to the post-World War II suburbanization in the 1940s and 50s. Rather, they are cosmopolitan metropolises that compare to the romance and exoticness of London, Paris, and Hong Kong. Additionally, and probably most importantly, they are often business centers that offer jobs unavailable in far-out suburbs, which became a driving factor in the growth of urban markets following the recent economic recession, and offered a place of opportunity for the recently down-trodden.

Why is this an important topic for high-tech companies?

The question of whether or not a company should locate in a suburb or an urban center is entirely dependent on the needs of the company. Urban markets offer start-ups a high-tech nucleus from which it can source talent, test its product, or access incubators and co-working spaces available in higher quantity in an urban core. High-tech conglomerates can also benefit from the urban market as well. In 2012, Motorola Mobility (a subsidiary of Google at the time) announced that it would be moving its headquarters from Libertyville, Illinois to Chicago all in the name of employee attraction and retention. Following the announcement of the relocation, employment applications increased by 28 percent. In January 2014, Lenovo purchased Motorola Mobility from Google and plans to keep its new Chicago location and even expand its premises. On the other hand, Google, which calls nearly the entire city of Mountain View, CA its headquarters, continues to thrive in the Silicon Valley suburb with the ownership and leasehold of nearly 10 million square feet, and thousands of employees. While it maintains a location in every urban market across the country, the opportunity to create a mega campus, building by building was made possible by suburban sprawl, and not only that, it is a nice place to live.

These stories demonstrate that it is not necessarily a question of suburban versus urban, but what is best for the growth and success of the company. The answer is unique to all sizes and all types of high-tech firms. This report examines the real estate environment, the market characteristics, and the reasons that each of these 34 markets appeal to high-tech companies. They are not all Silicon Valleys, but they all offer unique qualities that have enabled the high-tech industry to grow. Understanding what location means to your company and its ability to source talent and grow revenue will remain a top driver in company success.

No two markets are alike

In this report, JLL analyzed the features and amenities of 34 markets across the country to ascertain the following:

- *Is public transit available?*
- *Does the market have amenities that are within walking distance?*
- *Is the market comprised of mixed-use real estate that includes retail and office space?*
- *Or, is the market primarily comprised of traditional office parks that are without amenities?*
- *Is the market easily accessible by the highway and is it within 10 miles of an airport?*
- *As a market with high-tech activity, is it anchored by one particular high-tech company?*
- *Is there a dominant high-tech subsector that's clustering in the market?*

Results from this study revealed that no two markets are alike and that more than half of the markets are actually a mix of suburban and urban characteristics, not purely one or the other. Attractiveness and popularity among high-tech companies is really experienced at the submarket and micro-market level where interesting neighborhoods have become the focal point for much of the clustering of this industry.

Number of markets by anchored company

5	Google
3	ORACLE
2	Microsoft
2	intel

Market stats

4 urban | 13 suburban

17 urban and suburban features

12 HAVE transit

6 DO NOT HAVE transit

44% ARE walkable

56% ARE walkable in parts

32% HAVE mixed-use

San Diego has NO mixed-use

65% PARTIAL mixed-use

All 34 markets are located near a major freeway exit

28 are within and 6 are outside 10 miles of an airport

11 markets have a software cluster

3 HAVE electronics & instruments cluster

3 HAVE media & entertainment cluster

High-tech industry market score and cycle clock

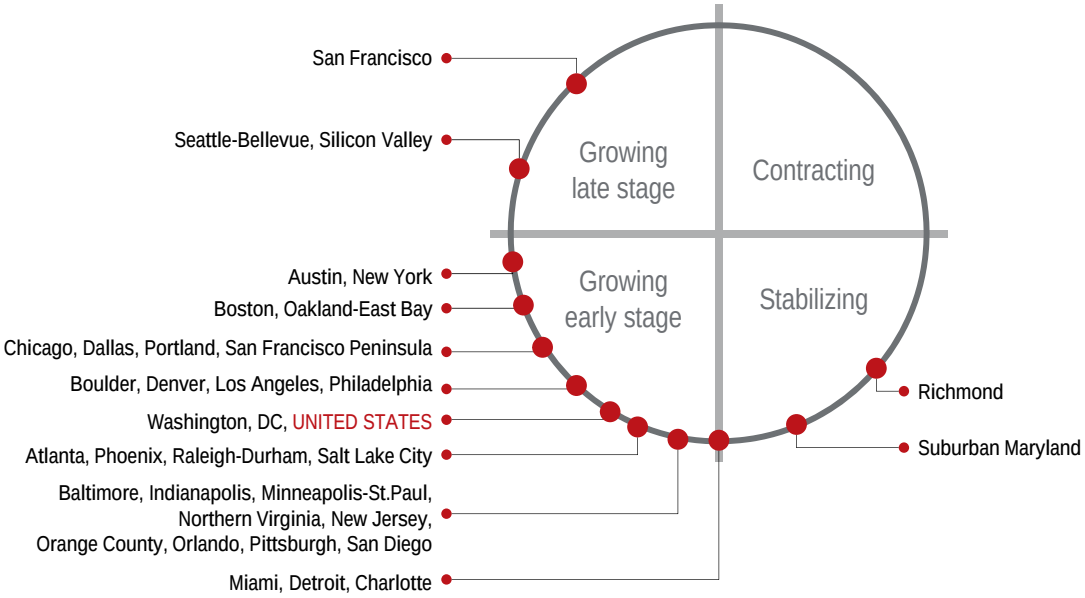
Our proprietary *high-tech office market score* takes into account key metrics to determine the position of each market included in this report along the high-tech office growth cycle. This score is not a ranking per se, but it does quantify market position relative to the others based on employment growth, high-tech office employment concentration, market dynamism, innovation, and investment trends.

Each market is scored among the others in this report, so a high score only indicates that it is a leader among the top high-tech markets in the U.S., while a low score means that a market has slower momentum, but opportunity to grow even more.

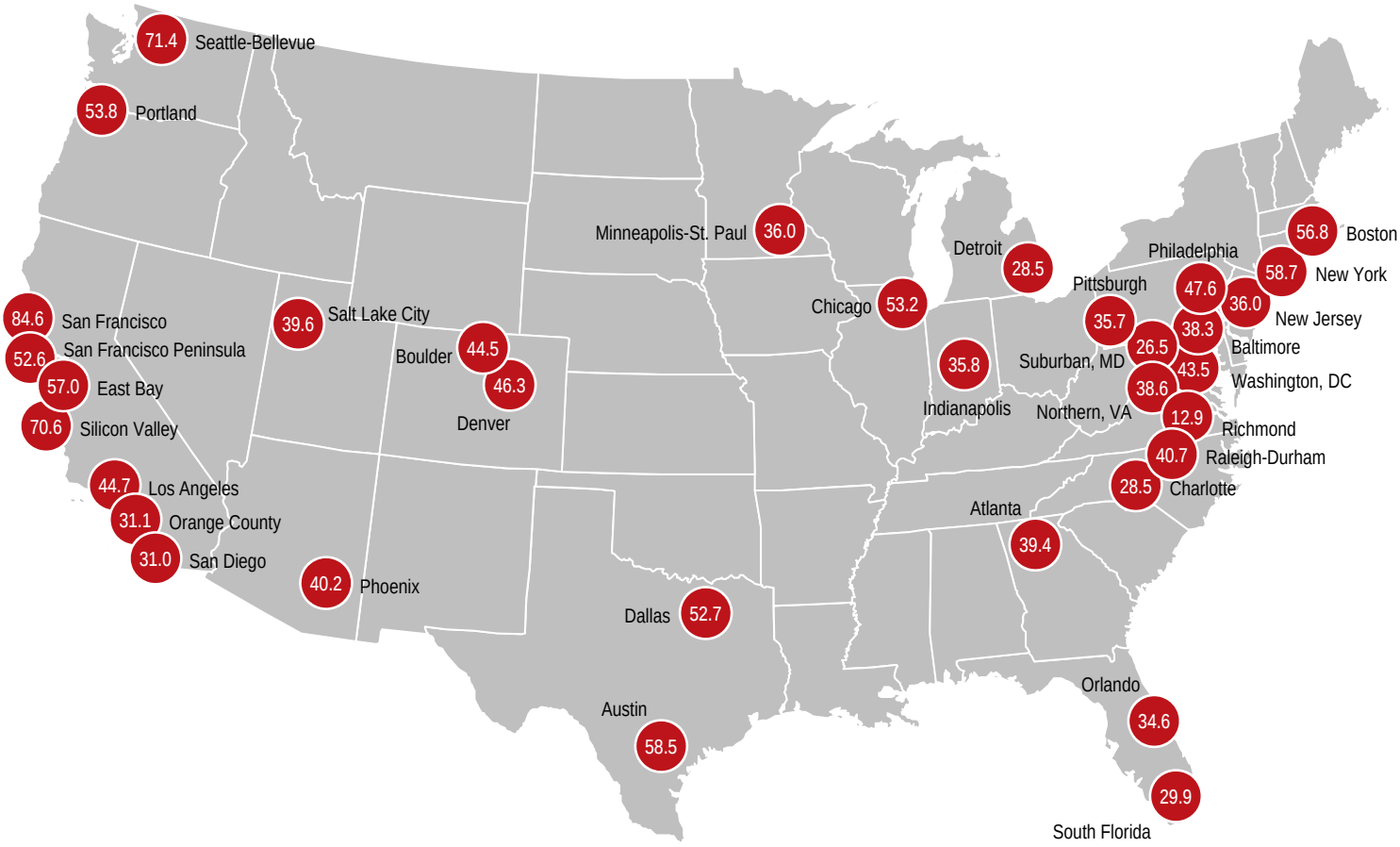
The high-tech office cycle clock is a visual representation of where each market in this report stands relative to the others in the current cycle. Markets positioned on the two left quadrants of the clock indicate strong momentum in most, if not all, categories measured to produce an overall score. Markets placed in the two right quadrants of the clock are those that have metrics with room to improve.

The following metrics are considered to be key drivers of high-tech industry growth, and have weighted each category to derive a total score for each market:

High-tech job growth: broad measure of economic success and job creation
High-tech wage growth: measures the competitive nature of the labor market in a given location. How much competition is there for the right talent?
High-tech services concentration: measures jobs in the industry that fall within office-using employment sectors as a percentage. Larger concentrations have greater impact on office space demand when changes to employment occur, providing a strong indicator of how the high-tech industry in each market could move real estate.
Share of U.S. venture capital funding: measures the impact venture capital funding has on the industry in each market, and the potential for company growth and new job creation.
Intellectual capital: measures the availability of skilled labor for each market, quantified by the percentage of people 25 or older with a bachelor's degree or higher.
Innovation: measures utility patents granted in each market as a leading indicator of new inventions or ideas.
Market dynamism: New this year, this category measures the concentration of favorable amenities in each market. How walkable is the market? How many other high-tech companies are already clustered there? How vibrant is the market outside of the office sector?



Local market rankings



Total weighted score							
San Francisco	84.6	Dallas	52.7	Phoenix	40.2	Orlando	34.6
Seattle-Bellevue	71.4	San Francisco Peninsula	52.6	Salt Lake City	39.6	Orange County	31.1
Silicon Valley	70.6	Philadelphia	47.6	Atlanta	39.4	San Diego	31.0
New York	58.7	Denver	46.3	Northern Virginia	38.6	South Florida	29.9
Austin	58.5	Los Angeles	44.7	Baltimore	38.3	Detroit	28.5
East Bay	57.0	Boulder	44.5	Minneapolis-St. Paul	36.0	Charlotte	28.5
Boston	56.8	Washington, DC	43.5	New Jersey	36.0	Suburban Maryland	26.5
Portland	53.8	UNITED STATES	42.5	Indianapolis	35.8	Richmond Virginia	12.9
Chicago	53.2	Raleigh-Durham	40.7	Pittsburgh	35.7		

Local markets rankings

	Total high-tech employment	Annual job growth, 2013
Silicon Valley	213,594	5.2%
Boston	145,484	4.3%
Dallas	142,339	3.2%
Northern Virginia	123,936	-1.6%
Seattle-Bellevue	120,539	7.6%
Chicago	100,526	3.5%
Los Angeles	98,311	0.5%
New York	90,494	8.4%
Minneapolis-St..Paul	74,904	0.6%
Phoenix	68,082	4.4%

	Average total high-tech annual wage	Annual wage growth, 2013
San Francisco	$156,518	18.9%
New York	$125,555	11.3%
Detroit	$81,520	9.9%
Seattle-Bellevue	$143,597	9.2%
Silicon Valley	$195,815	8.0%
Austin	$100,431	8.0%
Denver	$93,885	7.3%
San Diego	$106,087	6.7%
Chicago	$92,881	6.5%
South Florida	$67,687	6.4%

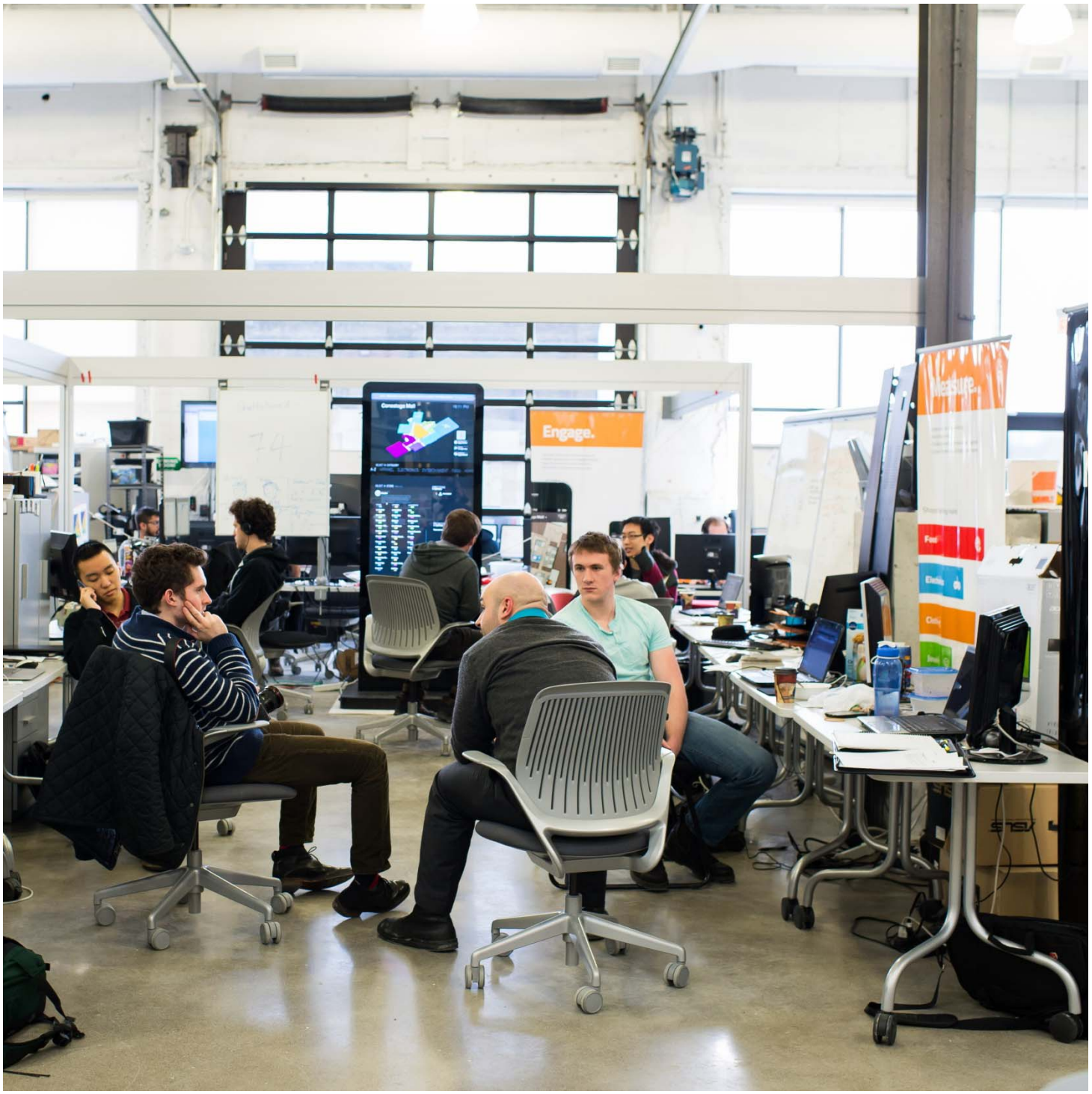
	High-tech services annual job growth	High-tech services employment
San Francisco	18.1%	47,633
Austin	15.1%	39,011
Phoenix	14.5%	34,717
Silicon Valley	13.6%	107,175
Oakland-East Bay	9.9%	30,137
Portland	9.0%	23,208
New York	8.6%	89,434
Chicago	8.0%	73,572
Seattle-Bellevue	8.0%	112,316
Pittsburgh	7.6%	14,562

%	High-tech services % of office jobs
Silicon Valley	38.0%
Seattle-Bellevue	32.5%
San Francisco Peninsula	31.6%
Boulder	27.8%
Northern Virginia	27.2%
San Francisco	20.9%
Austin	19.0%
Dallas	16.7%
Boston	16.2%
Suburban Maryland	15.4%

	High-tech venture capital funding (millions), Q2 2014	Share of U.S. total
San Francisco	$3,264.2	34.1%
Silicon Valley	$1,727.1	18.0%
New York	$882.0	9.2%
Boston	$441.6	4.6%
Los Angeles	$392.2	4.1%
San Francisco Peninsula	$342.6	3.6%
Seattle-Bellevue	$256.5	2.7%
Oakland-East Bay	$193.5	2.0%
Salt Lake City	$114.5	1.2%
Austin	$113.1	1.2%

	Utility patents
Silicon Valley	10,256
Boston	4,537
New Jersey	3,850
Seattle-Bellevue	3,597
San Diego	3,293
Minneapolis-St.Paul	3,113
Chicago	3,033
Oakland-East Bay	2,988
Los Angeles	2,844
San Francisco Peninsula	2,695

Local high-tech markets



Juliet Potter
Vice President, Research

Ryan Harchar
Senior Research Analyst

Atlanta | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
66,536	$75.8M	$20.36	24%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+1.7%	0.8%	1.3%	830,938 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Metro Atlanta's employment base is among the United States' most diverse. No one industry is a primary driver of activity, particularly with respect to office demand; however, firms participating in the high-tech industry do have a notable impact on local market dynamics. These companies, and the specialized groups embedded within large corporations, account for a growing component of the metro's leasing volume. Current trends continue to support this. Of the known requirements for space 36.1 percent are directly related to technology firms representing over 2.6 million square feet. These occupiers will play a pivotal role in shaping the city's skyline as it enters a new development cycle.

Start-ups to well-established firms prefer Atlanta's low cost of doing business, highly educated labor pool, vast fiber infrastructure, and direct global access via Hartsfield-Jackson International Airport. The market is also home to a critical mass of financial technology or 'fintech' firms. These organizations are responsible for processing the world's non-cash related payments and Atlanta firms, several listed on American Banker's Fintech 100 list, handled more than two thirds of the world's transactions in 2013, over $85 billion worth. Preferred building attributes include large efficient floor plates, fiber to the premises, and redundant power.

Growth of local high-tech is dependent upon the city's ability to attract and retain top talent. Solving the education, traffic, and sprawl challenges are paramount to improving quality of life. Success will certainly correlate to the in migration and organic growth of high-tech firms, potentially expanding the eager flow of venture capital to the Southeast's capital.

High-tech employment concentration

Top lease transactions

Cobalt Center | North Fulton
Tenant: Fiserv
Size: 376,351 s.f.
New lease

SunTrust Plaza | Downtown
Tenant: Coca-Cola's IT group
Size: 275,868 s.f.
New lease

Ponce City Market | Midtown
Tenant: MailChimp
Size: 115,600 s.f.
New lease

Top High-tech submarkets

Midtown	Central Perimeter	North Fulton

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: None	High-tech subsector: Software

No | Some | Yes

Brittany Maki
Research Analyst

Austin| Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
65,010	$113M	$30.44	5.6%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+8.3%	1.2%	9.1%	2.6 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Dubbed "Silicon Hills" for its booming high-tech scene, Austin is home to more than 4,700 high-tech firms. While the CBD's prestigious location gives firms an edge in attracting talent, the Northwest high-tech corridor is home to Apple, Google, IBM, Oracle, National Instruments, Microsoft, Cisco, and HP.

Austin offers an abundance of educated talent at a fraction of the cost of other high-tech markets. The average wage for Austin high-tech workers is half that of Silicon Valley, and the absence of corporate and personal income taxes create a pro-business environment. The city is attractive to employees, who can enjoy a low cost of living and high quality of life. The University of Texas, combined with an attractive lifestyle, have young people flocking to the city. Access to accelerators, incubators and venture capital firms make the city fertile for growth. Austin is also home to SXSW Interactive, where Twitter made its 2007 debut.

The fierce battle for talent has led high-tech companies to invest heavily in amenities, seeking to create unique and high quality environments that embody their corporate cultures. The workplace has become a tool for employee recruitment and retention. This has produced a high demand for new, or recently remodeled, creative office space.

Flexibility is in high demand. Tightening vacancy and rising costs have pushed companies seeking large blocks and expansion options to the suburbs. As a result, there are more urbanized, mixed-use projects that recreate a downtown atmosphere, with walkable amenities, entertainment, and housing options.

High-tech employment concentration

Top lease transactions

501 Congress | CBD
Tenant: Dropbox
Size: 60,000 s.f.
New lease

Quarry Oaks Atrium A | Northwest
Tenant: Websense
Size: 92,000 s.f.
New lease

Encino Trace | Southwest
Tenant: ARM, Inc.
Size: 120,000 s.f.
New lease

Top High-tech submarkets

Central Business District	Northwest	Southwest

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: Dell	High-tech subsector: Software

No | Some | Yes

Patrick Latimer
Senior Research Analyst

Baltimore | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
34,402	$22M	$22.20	18%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+2.1%	0.2%	0.8%	0.5 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

While high-tech firms are located across the Baltimore metro region, the Baltimore City Southeast submarket has seen the greatest amount of recent activity by high-tech tenants. Firms have been drawn to the area due in part to a growing millennial population and nearby educational institutions, such as Johns Hopkins University and the University of Maryland, along with several successful incubators. Demand from the high-tech sector has helped to spur new development and contributed to tight market conditions in neighborhoods including Locust Point, Federal Hill, Fells Point and Canton. To the north of the city, software publishers, such as ZeniMax Online Studios and Firaxis Games in Hunt Valley and the I-83 Corridor, have long been an important occupier. Larger corporate high-tech users are typically drawn to the Columbia South submarket due to its large labor pool and traditional office inventory.

In one of the largest lease transactions of the year for the overall market, Millennial Media expanded their headquarters in Canton at 2400 Boston Street as the mobile advertising firm grew into space recently vacated by The Emerging high-tech Center, a non-profit incubator program. Demonstrating the lack of existing availability, Mindgrub and Groove Commerce both leased space in new adaptive re-use projects. In Baltimore City, a lack of existing inventory is the greatest challenge facing high-tech tenants. Outside of the traditional downtown in the communities that are sought after by high-tech tenants, vacancy rates are typically well-below five percent with blocks of over 5,000 square feet limited. The viability of adaptive re-use projects and new development is challenged by the hesitancy of high-tech tenants to commit to long-term leases.

Top lease transactions

2400 Boston Street | Baltimore SE
Tenant: Millennial Media
Size: 90,558 p.s.f.
Renewal and expansion

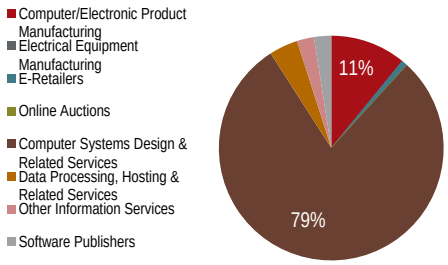
1215 E Fort Avenue | Baltimore SE
Tenant: Mindgrub
Size: 13,000 p.s.f.
Relocation

443 S Central Avenue | Baltimore SE
Tenant: Groove Commerce
Size: 10,000 p.s.f.
Relocation

Top High-tech submarkets

Baltimore Southeast	I-83 North	Columbia South

High-tech employment concentration



Features and amenities

Jordan Yarboro
Senior Research Analyst

Boston | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
145,484	$441M	$32.58	19%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+4.3%	4.6%	7.9%	4.2 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Greater Boston is a diverse and evolving office market, prime for technology companies. Elite universities, such as Harvard and MIT, continue to fuel innovation and produce top talent. Tech companies traditionally cluster in East Cambridge, Route 128/Mass Pike and the Seaport District, which recently became a popular value option for urban focused tenants. Today, low vacancies and surging rents in these tech hotbeds are forcing tenants to explore alternative locations. In Boston, the Financial District and Downtown Crossing are welcoming technology tenants, attracted to a growing amenity base and proximity to the Red Line. Outer urban areas like Somerville, Watertown and Charlestown are all benefitting from the spillover of tech tenants from neighboring Boston and Cambridge as new development projects will bring access to amenities, modern housing and public transportation. Incubators and shared workspaces are vital to Boston's tech ecosystem, providing flexible options for start-ups and early stage companies. Groups like the Cambridge Innovation Center (CIC) and newcomer WeWork are growing throughout Boston. The incubator model now extends to corporate users like Constant Contact and eBay that designate space within their own headquarters to accommodate start-ups.

In Boston's suburbs, the Route 128 corridor has traditionally hosted a large concentration of blue-chip tech companies. With the growing trend of urbanization and an increasingly millennial workforce, suburban markets face strong competition from their urban counterparts. To keep pace with tenant demand, Burlington and Waltham are undergoing rapid transformations. Through exciting mixed-use development and asset repositioning, suburban landlords are rethinking the traditional office park to appeal to an evolving tenant base.

High-tech employment concentration

Top lease transactions

9 Technology Drive | 495/Mass Pike
Tenant: Bose Corporation
Size: 280,000 s.f.
Renewal

77 CityPoint | 128/Mass Pike
Tenant: Care.com
Size: 108,000 s.f.
Relocation and expansion

Lafayette City Center | Downtown
Tenant: Carbonite
Size: 53,000 s.f.
Relocation and expansion

Top High-tech submarkets

East Cambridge	Downtown	128/Mass Pike

Features and amenities

Mandy Seyfried
Research Analyst

Boulder | Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
21,244	$22M	$23.34	7.0%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+1.1%	0.2%	-0.6%	175,755 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Technology firms in Boulder sprawl throughout the submarket, but are traditionally clustered in three geographies: Downtown, Central and East. Large anchor tenants in Boulder, such as IBM and DigitalGlobe, tend to enhance the tech presence rather than overtaking it. Start-ups and established firms alike enjoy the brick-and-timber and creative office spaces, along with traditional office spaces. The presence of the University of Colorado provides a hub for innovation and also contributes to Boulder's highly educated workforce. Millennials in Boulder tend to gravitate toward Downtown because of the walkable amenities and live-work-play lifestyle. Vacancy in Downtown Boulder sits at 5.3 percent and with only one building under construction, tech company expansion is difficult at present time.

The technology industry in Boulder is growing as existing companies expand and many start-ups pop up throughout the submarket. Independent security intelligence company LogRhythm provides an excellent example of a growing company. In 2012, the company leased 40,000 square feet in Boulder and less than two years later, it is expanding by an additional 20,000 square feet in the same building.

Landlord flexibility remains one of the biggest challenges facing start-ups in Boulder. Landlords are pushing asking rates, especially Downtown where Class A space goes for over $41.00 per square foot, the highest rate in Boulder and Denver combined. Developers continue to plan for Boulder's growth, which will provide opportunities for both established and emerging companies alike.

Top lease transactions

5665 Flatiron Parkway | East
Tenant: SolarWinds
Size: 20,575 s.f.
Relocation

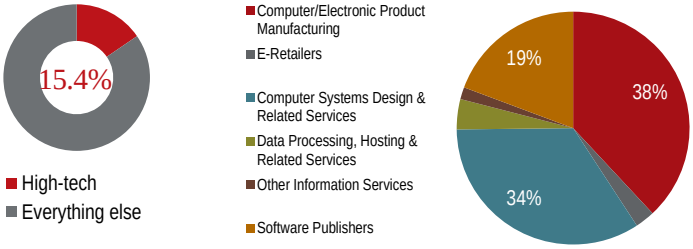
4780 Pearl East Circle | East
Tenant: LogRhythm
Size: 20,000 s.f.
Expansion in building

3005 Center Green Drive | Central
Tenant: Hybris Corp.
Size: 10,367 s.f.
Relocation and expansion

Top High-tech submarkets

Downtown	Central	East

High-tech employment concentration



Features and amenities

Taylor Allison
Research Analyst

Charlotte | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
19,262	$0	$22.02	17.8%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+4.4%	0%	3.2%	240,000 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Dominated by banking and finance, Charlotte has had to diversify its industry portfolio in order to recover from the recession and better prepare for another economic downturn. One of the industries that Charlotte has focused on recruiting is high-tech, mainly because it is an industry that will continue to thrive in the future.

Charlotte does not house many major high-tech firms, so as a result most of Charlotte's high-tech workforce is built into the larger corporations that are headquartered here. Charlotte has eight Fortune 500 headquarters located in the region along with numerous others that require significant high-tech support. As banks have become increasingly technologically savvy, Wells Fargo and Bank of America maintain a substantial amount of their back office and high-tech functions in Charlotte. This is also due to the fact that Charlotte is a more affordable place to do business than banking hubs such as New York and San Francisco. As the state continues to dole out incentives for high-tech firms willing to relocate to the region, Charlotte will continue to see relocations like Spectra, a financial services high-tech firm, which is bringing 250 or more jobs to the CBD.

Charlotte has also made progress in developing a start-up culture. This growing sector can be found in innovation hubs such as the Packard Place building in the CBD. Midtown also plays host to a variety of small high-tech start-ups.

Top lease transactions

1101 Red Ventures Dr | South Carolina
Tenant: Red Ventures (Software Division)
Size: 180,000 s.f.
Expansion

200 S College St | CBD
Tenant: AIG (Software Division)
Size: 30,000 s.f.
Relocation

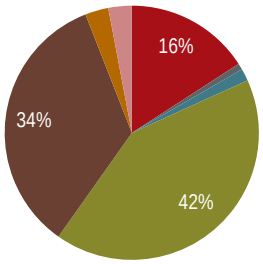
201 S Tryon St | CBD
Tenant: ThinkGate
Size: 21,210 s.f.
Relocation

Top High-tech submarkets

CBD	Midtown	University

High-tech employment concentration

High-tech
Everything else



Computer/Electronic Product Manufacturing
Electrical Equipment Manufacturing
E-Retailers
Computer Systems Design & Related Services
Data Processing, Hosting & Related Services
Other Information Services
Software Publishers

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: None	High-tech subsector: IT services

No | Some | Yes

Robert Kramp
Senior Vice President, Research

Chicago | Urban

Market scorecard

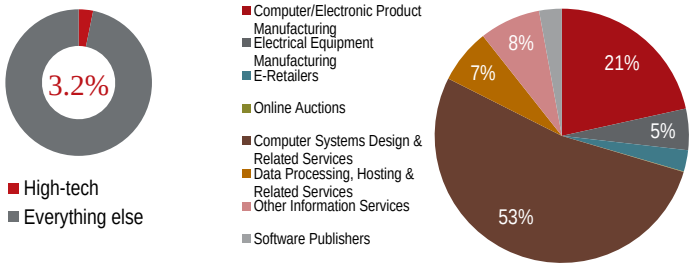
Jobs	Venture Capital	Cost	Office Supply
100,526	$100M	$33.30	17.4%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+3.5%	1.0%	4.4%	1.7 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Chicago's growing high-tech sector has had a significant impact on the office market. The sheer size of the expansion, particularly over the past three years, has rendered the leasing market a fresh pool of occupiers that are demanding a new type of product and as a result, submarkets such as River North and River West – which just 10 years ago were under developed – are now some of the tightest in downtown Chicago.

Emerging high-tech occupiers are demanding a fresh type of office product that meets new and unique space necessities, location and build-out, meaning that landlords have been busy modifying existing properties in order to stay competitive. Specifically, low-rise spec suites have become popular amongst high-tech start-ups that require conditions that can be easily occupied in a short amount of time. Building amenities are shifting too; bike storage facilities, rooftop decks and more common areas have all become standard essentials for landlords targeting high-tech tenants.

With Chicago's world-class universities, in addition to its draw of graduates from throughout the Midwest and Great Lakes, the city has a highly educated, diverse workforce with a deep population of younger workers willing to take the risk of pursuing their own start-up or going to work for one. As a result, Chicago has seen recent organic growth with high high-tech companies such as Matter, a community of healthcare entrepreneurs and industry leaders, taking 26,000 square feet in the Merchandise Mart, and Uber, a company connecting riders to drivers through smart phone apps, needing 100,000 square feet downtown.

High-tech employment concentration



Top lease transactions

1000 W Fulton Street | River West
Tenant: Google
Size: 105,000 s.f.
Relocation

930 W Evergreen Avenue
Tenant: UI Labs
Size: 94,000 s.f.
Relocation

Merchandise Mart | River North
Tenant: Braintree
Size: 60,000 s.f.
Relocation

Top High-tech submarkets

River North	River West	CBD Class B

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: None	High-tech subsector: Digital media

No | Some | Yes

Walter Bialas
Vice President, Research

Dallas | Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
142,239	$85M	$23.00	19%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+3.2%	0.9%	6.9%	4 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

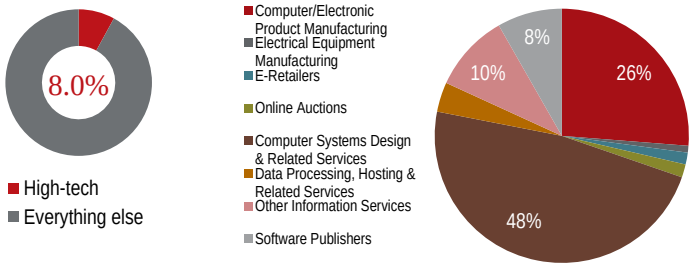
Dallas' high-tech history goes back to the 1951-founding of Texas Instruments, which produced the first commercial microchip. TI, a top-three producer of semiconductors and digital processors globally, is an important anchor in the region. Dallas' high-tech infrastructure clusters around computing and electronics. Numerous hardware, software, and solutions companies, like Hewlett Packard, McAfee, Cisco, Oracle, CompuCom, Computer Sciences Corp, Intuit, and Microsoft have operations in Dallas. Start-ups also emerge, such as GuideIT, a heath care solutions company started last year by former EDS and Perot System executives with Perot funding, as well as relocations into the region, like Omnitracs covering software solutions for the trucking industry.

Underscoring Dallas' high-tech role, the region is one of the top-five patent originators in the U.S. Leaders include TI, HP, Cisco, Samsung, Motorola, Raytheon, and Lockheed Martin. AT&T's 2008 headquarters relocation also set the stage for wireless/mobile to become a driver.

High-tech companies tend to locate in the suburbs to be close to their skilled workforce. Key submarkets include Far North Dallas and the former Telecom Corridor in Plano-Richardson, as well as Las Colinas. Amazon has been enhancing its presence. After opening 2.2 million square feet of distribution space last year, they took significant office space this year.

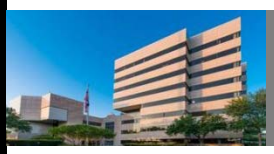
Continued high-tech growth is forecast due to Dallas' low cost of doing business, aggressive company recruiting efforts, low cost of living compared to many high-tech markets, and high quality of life.

High-tech employment concentration



Top lease transactions

Two Galleria Tower | LBJ Freeway
Tenant: Amazon
Size: 88,600 s.f.
New lease



500 E John Carpenter Fwy| Las Colinas
Tenant: JDA Software Group
Size: 53,300 s.f.
Relocation

3 Park Central | LBJ Freeway
Tenant: Myth Innovations
Size: 26,000 s.f.
New lease

Top High-tech submarkets

Far North Dallas	Richardson - Plano	Las Colinas

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenants: Texas Instruments, AT&T, HP	High-tech subsector: Electronics/instruments, Mobile, Semiconductor

No | Some | Yes

Mandy Seyfried
Research Analyst

Denver | Urban & Suburban

Market scorecard

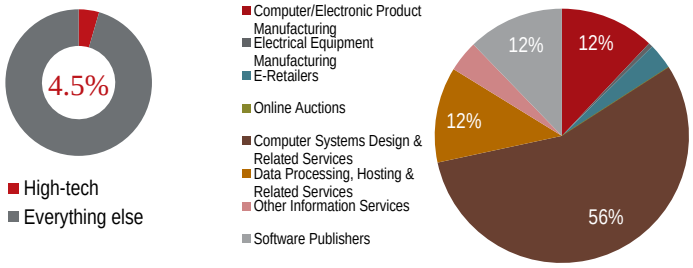
Jobs	Venture Capital	Cost	Office Supply
48,943	$42M	$23.93	14.5%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+5.8%	0.4%	5.7%	1.2 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Technology firms in Denver are clustered primarily in three geographies. Traditionally, many high-tech tenants have gravitated to the Northwest and Southeast Suburban submarkets, near large anchor tenants such as Oracle and Level 3 Communications. There are a handful of corporate occupiers, however the presence and growth of these companies does not take space away from or minimize growth of start-ups. Technology firms have started to cluster in the CBD and surrounding areas where brick-and-timber and creative office spaces are popping up. Also contributing to technology companies clustering around the CBD is Denver's highly educated millennial workforce, whose live-work-play mindset is concentrated in and around the CBD, lures many high-tech prospects to the area in order to attract top talent.

The technology industry in Denver is growing as existing companies expand and many start-ups are budding around the metro area. Enterprise-class software and services provider Rally Software is a good example of a growing company. Rally recently opened a new location in the Denver CBD at 1628 16th Street, leasing 21,645 square feet. This adds to Rally's 65,545-square-foot location in Boulder, plus a proposed 90,000-square-foot building to enable additional growth.

Landlord flexibility remains one the biggest challenges facing start-ups in Denver. Landlords are pushing asking rates and have a strong desire for creditworthy tenants; however, creative and incubator office spaces are being constructed and have provided opportunity for small tech start-ups to put down roots and gain traction in the market.

High-tech employment concentration



Top lease transactions

1628 16th Street | CBD
Tenant: Rally Software
Size: 21,645 s.f.
New lease

8005 S Chester Street | Southeast Suburban
Tenant: RingCentral
Size: 39,248 s.f.
Relocation and expansion

105 Edgeview Drive | Northwest
Tenant: Aircell
Size: 112,000 s.f.
Relocation and expansion

Top High-tech submarkets

Northwest	CBD	Southeast Suburban

Features and amenities

Andrew Batson
Senior Research Analyst

Detroit | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
48,675	$0	$22.84	29%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+1.0%	0%	-1.4%	66,000 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

As the birthplace of the assembly line, Detroit has long had a high-tech presence, thanks to the region's automotive industry and concentration of advanced manufacturing. Yet in recent years, the number of high-tech companies in Detroit has been increasing, almost exponentially. The primary force behind this trend is simple: the vehicles of tomorrow will be highly sophisticated technological machines. Take for instance hybrid vehicles, electric motors and self-driving automobiles. Even Google is positioning itself to become a player in the automotive industry with advanced autonomous technologies. Recently, the high-tech giant announced it would launch a Michigan-based fleet of 100 self-driving vehicle prototypes, sans steering wheel and gas and brake pedals, by the end of the summer. Livonia-based Roush Enterprises will assemble the prototypes with parts from several Southeast Michigan suppliers.

Indeed, Detroit has numerous high-tech companies targeting the automotive industry, but the region also has its fair share of traditional high-tech companies focusing on such subsectors as software development and information high-tech services. Arguably the most well-known high-tech company headquartered in Detroit is the Compuware Corporation. In 2013, the software company's revenue topped $944 million and it employed nearly 4,500 people worldwide. Compuware was one of the first companies to move its headquarters from the suburbs to downtown Detroit in 2003. And since then, downtown Detroit has become something of a high-tech hub, attracting the likes of Amazon, Microsoft, Twitter and Google to the city's urban core.

Top lease transactions

19111 Victor Parkway | N. I-275 Corridor
Tenant: STMicroelectronics
Size: 21,000 s.f.
Relocation

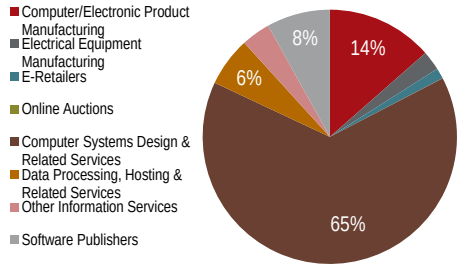
500 S Main Street | Royal Oak
Tenant: Vectorform
Size: 19,000 s.f.
Relocation and expansion

150 W Jefferson Avenue | Downtown
Tenant: Amazon
Size: 13,000 s.f.
Relocation and expansion

Top High-tech submarkets

Downtown	Washtenaw	North Oakland

High-tech employment concentration



Features and amenities

Ajay Patwari
Research Analyst

Indianapolis | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
32,699	$6.5M	$17.95	16.6%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+4.0%	0.1%	4.7%	0.13 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Clustered in two specific areas within the Indianapolis metro, the CBD and Northwest submarkets, high-tech companies Indianapolis are primarily driven by start-ups with space needs ranging between 5,000 and 25,000 square feet. For example, Lesson.ly, a software start-up that makes it easy to build, share, and track training materials, is adding 74 jobs as it moves from its shared space with TinderBox at 54 Monument Circle and considers larger downtown options.

High-tech firms have been entering the Indianapolis market for a few reasons. The local talent pool is available with nearby universities such as IUPUI, Indiana University, and Purdue University producing graduates in the mathematics and science fields demanded by high-tech companies. In addition, Indiana's pro-business tax climate being one of the lowest in the U.S. makes it attractive to young companies. While there is significant competition for limited venture capital dollars for start-up companies in Indianapolis, the metro does attract high-tech expansions from established occupiers, as well. Recently, Systems in Motion, a company that specializes in integrated onshore high-tech services, is expanding its operations in Kokomo & Carmel and adding 400 jobs by 2017. The California-based high-tech firm plans to lease up to 25,000 square feet in Kokomo and hire 240 workers, and it will also lease 15,000 square feet in Carmel and add 160 workers.

Top lease transactions

7676 Interactive Way | Northwest
Tenant: Interactive Intelligence
Size: 112,500 s.f.
Renewal and expansion

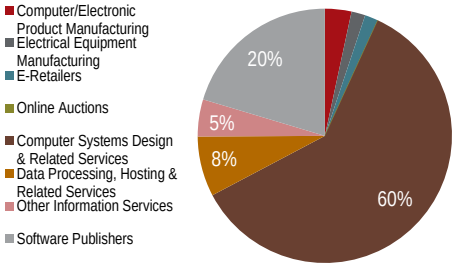
1099 North Meridian St. | CBD
Tenant: Angie's List
Size: 90,000 s.f.
New lease

451 E. Market St.| CBD
Tenant: StreetLinks
Size: 25,000 s.f.
New lease

Top High-tech submarkets

CBD	Northwest	Keystone

High-tech employment concentration



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: Exact Target	High-tech subsector: Software

No | Some | Yes

Devon Parry
Senior Research Analyst

Los Angeles| Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
98,311	$392M	$44.16	14.6%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+0.5%	4.1%	4.5%	350k s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

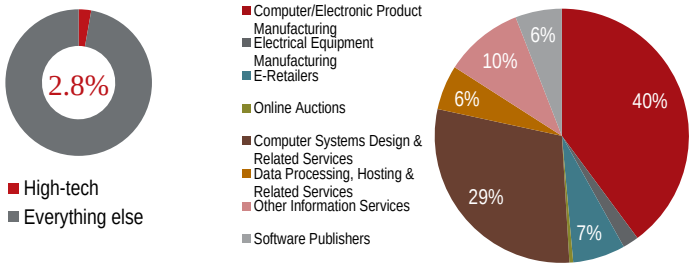
Los Angeles' high-tech industry is concentrated on the West side of the city, with the beach communities of Santa Monica, Venice and Playa Vista the choice location for the sector. These areas offer a strong amenity base and an attractive lifestyle which remains in-line with the wants and needs of high-tech tenants.

In recent years, high-tech has firmly secured itself as a leading growth industry in the market, translating into increases in headcount and positive demand for office square footage. It is no coincidence that these high-tech heavy micro-markets are some of the tightest in the metro area. As the appetite for creative space grows, emphasis on space utilization and innovative design has emerged. Many firms are now using the office environment as a mechanism to recruit and retain talent.

The positive outlook of the industry has been further bolstered by an increase in M&A activity. Thus far in 2014, Los Angeles has seen roughly nine large scale buyouts, in which traditional high-tech firms like Apple and media firms like Disney have acquired smaller, locally based companies viewed either as competition or complementary industries.

Moving forward, the high-tech sector stands to grow further as high-tech giants from Silicon Valley look to tap into the entertainment talent of Los Angeles and new-media/content-creation demand grows. This projected growth coupled with the current razor-thin vacancy rates in tech-dominated micro-markets have prompted developers to push forward with plans to build which had previously stalled in the proposal phase.

High-tech employment concentration



Top lease transactions

2401 Colorado Avenue| Santa Monica
Tenant: Edmunds.com
Size: 132,000 s.f.
New lease

12312 W Olympic | Olympic Corridor
Tenant: Riot Games
Size: 77,000 s.f.
New lease

8680 Hayden Place | Culver City
Tenant: Haute Look
Size: 59,200 s.f.
Relocation

Top High-tech submarkets

Santa Monica	Marina Del Rey/ Culver City	West LA/ Olympic Corridor

Features and amenities

No Some Yes

Abel Balwierz
Senior Research Analyst

Minneapolis – St. Paul | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
74,904	$19M	$24.32	17.2%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+0.6%	0.2%	0.8%	0 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

High-tech companies are attracted to Minneapolis-St. Paul because of its highly educated population, exceptional quality of life, innovative spirit, work ethic and high concentration of *Fortune 500* companies. While high-tech occupiers have historically been spread out across the Twin Cities in both urban and suburban settings, an increasing number are gravitating to the burgeoning North Loop neighborhood on the outskirts of the Minneapolis CBD, home to a deepening pool of young talent, unique office space, an abundance of amenities and excellent access to transit.

Uptown could also soon become a new hot spot for high-tech companies. Code42 Software Inc., a fast-growing high-tech company, is working on a deal to lease 175,000 square feet of office space at the planned MoZaic East. This move would likely spur an increase in demand for office space by high-tech users in Uptown, an amenity-rich district of Minneapolis popular among millennials, but not a significant high-tech or office market historically.

A number of local high-tech companies are experiencing substantial growth but the lack of sizeable options in developing high-tech districts such as North Loop, Uptown and Northeast Minneapolis presents challenges. Growing high-tech companies desire space that works well for today and offers flexibility within a building to scale quickly. Potential conversion and development opportunities do exist in these areas, but fast-growing high-tech companies oftentimes need “ready to go” space now rather than later.

Top lease transactions

380 St. Peter St. | St. Paul CBD
Tenant: Infor
Size: 142,000 p.s.f.
Renewal and rightsizing

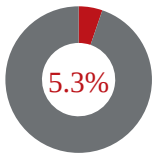
510 Marquette | Minneapolis CBD
Tenant: RedBrick Health
Size: 46,000 p.s.f.
Relocation and expansion

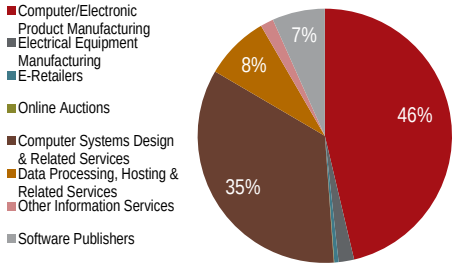
300 First Avenue N | Minneapolis CBD
Tenant: OptiMine Software
Size: 16,000 p.s.f.
Relocation and expansion

Top High-tech submarkets

Minneapolis CBD	Southwest	West

High-tech employment concentration





Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: None	High-tech subsector: Software

No | Some | Yes

Stephen Jenco
Vice President, Research

New Jersey | Suburban

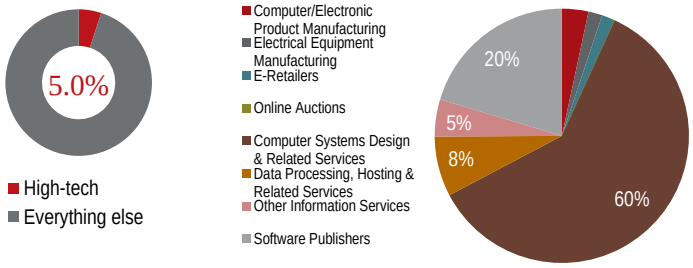
Market scorecard

Jobs	Venture Capital	Cost	Office Supply
32,699	$6.5M	$25.22	25.0%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+4.0%	0.1%	2.6%	1.7 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

The high-tech industry remains an integral driver of growth for the New Jersey economy and the commercial real estate market. More than 20.0 percent of the office leases completed during the first half of 2014 involved high-tech companies. This represented the second largest share of demand after life-sciences companies, which accounted for one-quarter of transactions. Proximity to New York, a transportation system that includes several stations along Amtrak's Northeast Corridor rail line and access to Newark Liberty International Airport have helped Garden State high-tech companies reach the global marketplace. The skilled workforce sought by today's companies is continually replenished by a pipeline of graduates from the state's colleges and universities. Collaborative partnerships between educational institutions and the high-tech industry will help foster continued expansion in the years ahead.

New Jersey's use of economic incentives tools is creating opportunities for high-tech companies to remain here or consider relocating their operations to the state. After being awarded a $3.2 million Grow New Jersey grant, Marathon Data Systems leased 22,000 square feet for its new headquarters at 3600 Route 66 in Neptune rather than moving to Boston. Mass transit-centric submarkets also remain on the radar screen of high-tech companies. Competitive rents for Class A space in proximity to New York and economic incentives encouraged Forbes Media and Thomson Reuters to expand in the Hudson Waterfront. In New Brunswick, a 1.5 million-square-foot mixed-use project containing office/R&D, retail and residential components is planned for a site adjacent to the train station and near Rutgers University.

High-tech employment concentration



Top lease transactions

499 Washington Boulevard| Hudson Waterfront
Tenant: Forbes Media
Size: 92,720 s.f.
New lease

300 Kimball Dr | Parsippany
Tenant: Fiserv
Size: 78,470 s.f.
New lease

3600 Rt 66 | Monmouth
Tenant: Marathon Data Systems
Size: 22,000 s.f.
New lease

Top High-tech submarkets

Hudson Waterfront	Metropark	Princeton

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: None	High-tech subsector: Business & Consumer Products/Svcs.

No | Some | Yes

Tiffany Ramsay
Research Analyst

New York | Urban

Market scorecard

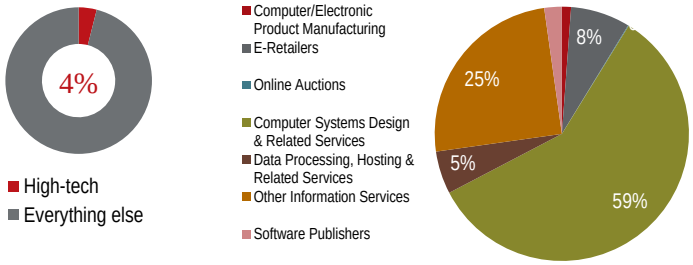
Jobs	Venture Capital	Cost	Office Supply
90,494	$882M	$64.57	10.6%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
8.4%	9.2%	6.4%	5.4 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

New York City has flourished as a hotbed for high-tech start-ups and established international high-tech firms in recent years. With considerable support from the state and local government, the city has built a reputation as a high-tech incubator with world-class offerings. New York provides direct access to capital as a global financial leader, in addition to a deep talent pool, both crucial in start-up culture. In Midtown South, the preferred high-tech hub, tenants are attracted to vibrant workspaces, state-of-the-art amenities and a strong public transportation system that easily extends to all corners of the city. A live-work-play environment, supported by a rich cultural and arts scene—has also contributed to the location's allure.

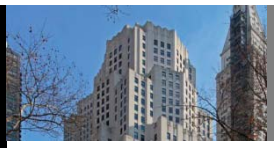
The high-tech sector is increasingly proving to be a key economic driver for the city, generating substantial job growth, rising wages, and surges in office leasing activity. By mid-year 2014, high-tech tenants had committed to more than 2.6 million square feet of Manhattan office space, second only to financial services, historically the leader in office use.

Tech's wild success, has come at a cost to tenants. Overall asking rents in Midtown South are at a record high, and the number of available large blocks has been halved since the beginning of 2013. Consequently, some tenants are unable to find space to suit their needs or are being priced out. However, this has created a unique opportunity for the more affordable outer boroughs of New York, especially in Brooklyn's high-tech Triangle, an emerging, robust high-tech community already home to more than 500 creative firms.

High-tech employment concentration

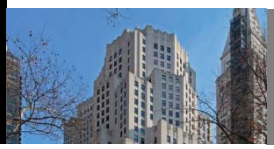


Top lease transactions



11 Madison Avenue | Gramercy Park
Tenant: Sony
Size: 506,476 s.f.
New lease

117 Adams/55 Prospect Street | Dumbo
Tenant: Etsy
Size: 198,500 s.f.
New lease



11 Madison Avenue | Gramercy Park
Tenant: Yelp
Size: 152,232 s.f.
New lease

Top High-tech submarkets

Greenwich Village	Chelsea	SoHo

Features and amenities

Robert Sapunor
Research Analyst

Northern Virginia | Suburban

Market scorecard

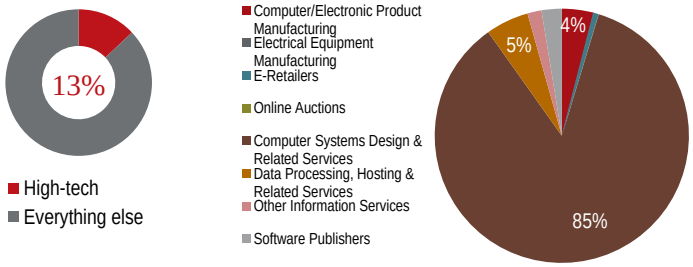
Jobs	Venture Capital	Cost	Office Supply
123,936	$79M	$32.73	19.1%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
-1.6%	0.8%	3.0%	2.2 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Government contracting work is attracting high-tech companies to the Northern Virginia market. While traditional government contractors are often located in office parks with limited amenities, the high-tech companies expanding in Northern Virginia are choosing to locate in amenity-rich areas that are served by Metrorail. These submarkets include the Rosslyn-Ballston Corridor as well as the Tysons and Toll Road submarkets along the recently-opened Silver Line.

While overall government procurement levels are down, spending is increasing in cybersecurity and IT. Amazon Web Services expanded its footprint in Herndon following its win of a $600 million government cloud computing contract. The demographics in Northern Virginia are also attractive to high-tech companies. Over 60.0 percent of residents in Northern Virginia have a college degree and the average age is 35.6 years.

The 2005 Base Relocation and Closure Commission caused the federal government to vacate over 2.4 million square feet in Arlington County, but this presents high-tech tenants an opportunity to relocate into amenity-rich submarkets. Owners in Crystal City are marketing space to high-tech companies by building innovative spec suites and converting vacant office buildings into micro-units designed by WeWork. The $50 million Crystal Tech Fund will invest in high-tech companies willing to relocate to Crystal City. The opening of the Silver Line to Tysons and Reston gives high-tech companies access to cheaper submarkets while keeping younger workers who depend on public transit.

High-tech employment concentration



Top lease transactions

1709-1710 Solutions Drive | Tysons
Tenant: Cvent
Size: 129,006 s.f.
Relocation and expansion

1850 Towers Crescent Plaza | Tysons
Tenant: MicroStrategy
Size: 43,047 s.f.
Expansion

12900 Worldgate Drive | Herndon
Tenant: Amazon
Size: 27,776 s.f.
Expansion

Top High-tech submarkets

Reston-Herndon	Tysons	Arlington County

Features and amenities

Hailey Harrington
Research Analyst

Oakland-East Bay | Urban & Suburban

Market scorecard

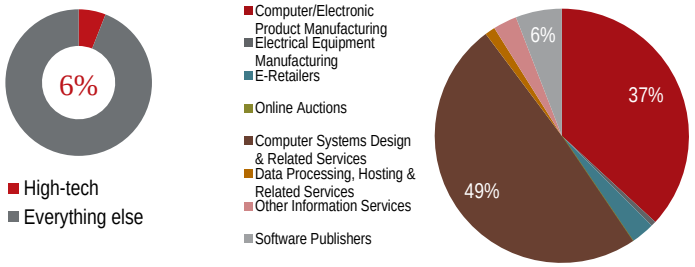
Jobs	Venture Capital	Cost	Office Supply
48,223	$194M	$27.36	15.3%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+3.9%	2.0%	7.5%	0 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

With close proximity to two of the strongest high-tech markets, the Oakland-East Bay has the advantage of access to the top high-tech labor pool, offers lower rental rates for office space, and high quality of life and livability for employees. In addition, it is home to three national labs and a world-class university, UC Berkeley. High-tech tenants within the urban and suburban market are primarily in the software, cloud computing, IT services, and green and clean high-tech subsectors. Oakland is the urban high-tech cluster for the market while Berkeley and the East Bay are the suburban clusters. Within the East Bay, high-tech tenants are drawn to the Tri-Valley region, San Ramon, Dublin, and Pleasanton.

The Tri-Valley is dominated by large corporate users in these submarkets, such as: GE Global Software HQ, Veeva Systems and Workday, all of which are software and cloud computing companies. With access to public transportation, the live-play-work environment for employees, affordable housing, and great weather, local companies are able to attract top talent. Over the past year, the trend to revitalize office parks with more retail, housing, and on-site amenities began in the Tri-Valley to attract more high-tech giants to the region.

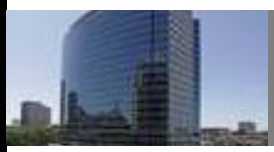
Oakland draws high-tech tenants that are being priced out of San Francisco and want a cheaper cost of doing business, access to public transportation, and an urban atmosphere. The history of high-tech in Oakland is not long with only two notable high-tech giants, Pandora Media Inc. and Ask.com. Due to its short history, Oakland is positioning itself as the "New Brooklyn" for start-ups and creates the sense of entrepreneurial community with the rise of incubator space.

High-tech employment concentration

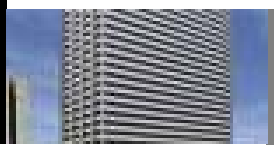


Top lease transactions

4420 Rosewood Drive | Pleasanton-N
Tenant: Ellie Mae
Size: 105,000 s.f.
Relocation and expansion



555 12th Street | Oakland-CBD
Tenant: Ask.com
Size: 24,000 s.f.
Renewal



1999 Harrison Street | Oakland-CBD
Tenant: Self Aware Games
Size: 21,000 s.f.
New lease

Top High-tech submarkets

Oakland-CBD	Tri-Valley	Berkeley

Features and amenities

Ryan Pires
Research Analyst

Orange County | Suburban

Market scorecard

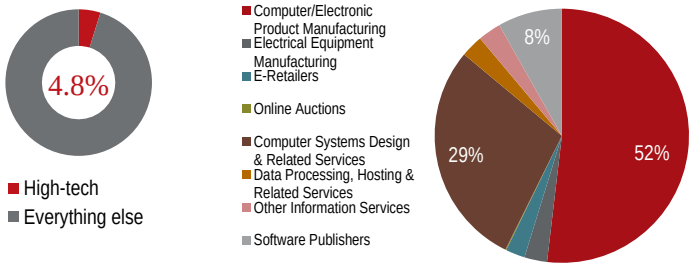
Jobs	Venture Capital	Cost	Office Supply
63,070	$57M	$23.87	18.3%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+0.0%	0.6%	5.2%	643,541 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

The high-tech market in Orange County has traditionally been characterized by a dominance of computer hardware manufacturers (i.e. semiconductor, memory chip, and hard drive producers). This is balanced today by a growing cadre of newer, modern high-tech companies like Google, Amazon, and Blizzard Entertainment, who have recently grown their presence in Orange County. What these firms have in common is the desire to tap into the market's skilled labor force and entrepreneurial talent. If this trend continues, Orange County could emerge as a new hot spot for high-tech firms, much like San Diego.

With this highly-skilled and youthful labor force, Orange County is seen by more high-tech companies as a place to recruit top talent. The most recent example of this trend is Google's deal to move its Irvine location into a new build-to-suit facility. The new building is anticipated to be a tool to help recruit talent from the University of California, Irvine and other local universities. Amazon also expanded its software development operations in South County. Overall, the active lifestyle, quality of life, and proximity to the Los Angeles and San Diego markets are appealing factors to high-tech companies in Orange County.

With a growing demand for "creative" space being leased at a significant premium over traditional office space, someof the biggest challenges that the Orange County market faces are the steadily increasing rental rates and diminishing availability of office space options. As rates continue to rise and availabilities dwindle, some of the price sensitive high-tech firms may look to other markets, leaving Orange County behind.

High-tech employment concentration



Top lease transactions

19510 Jamboree Road | Airport Area
Tenant: Google
Size: 80,000 s.f.
Build-to-suit

100 Avenida La Plata | South County
Tenant: DealerSocket
Size: 44,000 s.f.
New lease

9 Pasteur | Airport Area
Tenant: Backbone Entertainment
Size: 22,000 s.f.
New lease

Top High-tech submarkets

Irvine	Newport Beach	Irvine Spectrum

Features and amenities

Austin Carter
Research Analyst

Orlando | Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
21,102	$57M	$19.87	22.7%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+1.6%	0.6%	-0.3%	0 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Orlando's high-tech community has grown considerably over the past 12 months as it now represents Orlando's second largest industry with a $14 billion annual economic impact to the metropolitan area. Physical clustering is occurring at the Church Street Exchange, a former 87,900-square-foot indoor mall in downtown Orlando that is being re-purposed purely for high-tech companies. The building has gone from mostly vacant to over 90 percent leased in less than 12 months. Canvs, Orlando's first nonprofit co-working space aimed at helping high-tech start-ups, will occupy roughly 17,000 square feet. So far, out of the 165 desks Canvs will offer once the build-out is complete, 90 have already been reserved. Canvs, along with other initiatives like Starter Studio (a high-tech accelerator) reflect how Orlando's vibrant start-up high-tech culture is being cultivated to support future high-tech company expansion and growth in the area. The Exchange is also home to the Orlando Tech Association, a non-profit as formed to organize and further the interests of the members of Orlando's high-tech community.

Orlando's Digital Main Street program, recently announced by Mayor Buddy Dyer, in partnership with the Orlando Tech Association, will help market and promote the local high-tech industry. The initiatives currently underway will encourage further high-tech growth in the metro area, and will help highlight Orlando as a viable tech-hub for future entrepreneurs considering options for expansion and relocation.

Top lease transactions

901 International Pky | Lake Mary
Tenant: Delloitte IT Operations
Size: 135,000 s.f.
New Lease

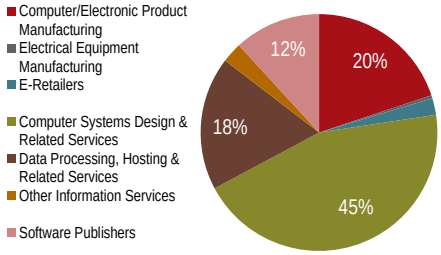
1950 Summit Park Dr | Maitland Center
Tenant: EA Tiburon
Size: 128,000 s.f.
Renewal

2600 Lucien Way | Maitland Center
Tenant: Viewpost
Size: 25,000 s.f.
New Lease

Top High-tech submarkets

University Area	Lake Mary	Orlando CBD

High-tech employment concentration



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: EA Tiburon	High-tech subsector: Media/Entertainment

No | Some | Yes

Geoff Wright
Senior Research Analyst

Philadelphia | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
35,435	$22M	$25.08	15.6%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+1.0%	0.2%	4.2%	3.8 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

The high-tech industry will soon be changing Philadelphia's skyline and economic future as media conglomerate Comcast Corporation announced a joint venture to build the $1.2 billion Comcast Innovation and Technology Center. The mixed-used project will create a world-class media, high-tech and innovation center housing Comcast's growing workforce of technologists, engineers and software architects. Comcast will lease 75 percent of the rentable office space (957,000 square feet) for 20 years. The remaining office space is dedicated to highly flexible, loft-like studios and spaces for research and development of start-up high-tech companies. The construction will create $2.75 billion in economic activity and will create 20,000 temporary jobs from the project's start in summer 2014 until completion in the fall of 2017. Upon completion, the project will create 2,800 permanent jobs, and annual tax revenue of $21.5 million for the city and another $30.7 million for the state.

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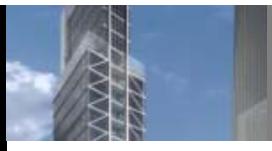
Led by schools like University of Pennsylvania's School of Engineering and Applied Science and Drexel's College of Engineering, high-tech companies are attracted to Philadelphia young talent and venture capital that want to remain in the city. The creation of the Innovation and Technology Center will drive job growth for the next generation of Philadelphia's top talent in media, high-tech and commerce.

The private and public funds that have facilitated positive momentum have also created new obstacle for Philadelphia as successful start-up high-tech companies leave the area for more capital and more established high-tech markets. In the future, Philadelphia will need to find new ways to better retain and develop start-up high-tech companies.

Top lease transactions



Comcast Innovation and high-tech Center | Philadelphia CBD
Tenant: Comcast Corporation
Size: 1,500,000 s.f.
Built-to-Suit, mixed-use project

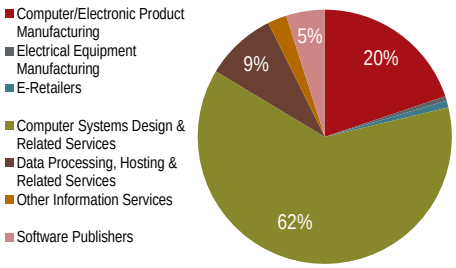
8000 Lincoln Drive | Mt. Laurel / Marlton / Moorestown
Tenant: Computer Science Corporation
Size: 36,830 s.f.
Renewal

CrossPoint at Valley Forge | Route 202 Corridor
Tenant: ABC Corporation
Size: 100,000 s.f.
Renewal and expansion

Top High-tech submarkets

Philadelphia CBD	Route 202 Corridor	Mt. Laurel / Marlton / Moorestown

High-tech employment concentration



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: Comcast	High-tech subsector: Media/Entertainment

No | Some | Yes

Kiana Cox
Research Analyst

Matt Kolano
Research Analyst

Phoenix | Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
68,082	$43M	$21.11	26%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+4.4%	0.5%	3.2%	2.3 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Phoenix is an emerging technology market with a healthy mix of both large and small technology companies focused primarily in the Southeast Valley. A youthful, educated workforce has helped attract well-established manufacturing firms to the Valley like Intel, Honeywell, ON Semiconductor, and recently, Apple. With local business incentives to grow, companies like GoDaddy, JDA Software, Infusionsoft, and LifeLock are also taking advantage of the Phoenix area. Workshops, grants, and other resources are offered by local municipal governments and state universities in support of entrepreneurial tech companies as Phoenix positions itself as an affordable alternative to other markets.

Many public and private entities have been working hard to provide start-ups with the right environment and resources for success. One of the most successful examples in Phoenix, Arizona State University's SkySong project is designed to help companies grow by providing business services and programs such as new technologies, capital networks, business education, and a skilled workforce. As the project continues to grow, more technology-oriented occupiers will join the many companies that currently reside in SkySong.

Smaller companies and start-ups are recruiting their talent primarily from regional sources like Arizona State University, the University of Arizona, and other local colleges. Companies such as Silicon Valley Bank and Insight Enterprises have announced their recent plans to expand and will be creating hundreds of new jobs.

Top lease transactions

4301 N Scottsdale Rd | South Scottsdale
Tenant: Weebly
Size: 25,057 s.f.
New lease

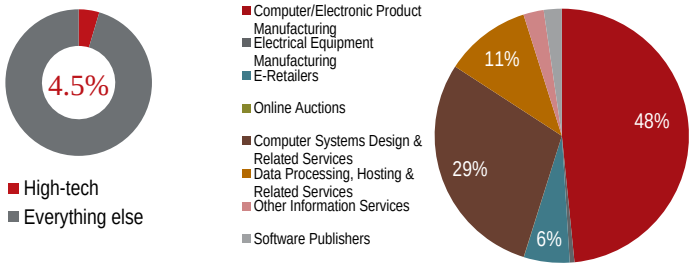
7410 S Roosevelt St | Tempe
Tenant: Consumer Cellular
Size: 86,000 s.f.
Expansion

6811 E Mayo Blvd| Scottsdale Airpark
Tenant: Axway
Size: 46,400 s.f.
Renewal

Top High-tech submarkets

Tempe	Chandler	South Scottsdale

High-tech employment concentration



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: Intel	High-tech subsector: Semiconductor

No | Some | Yes

Andrew Batson
Senior Research Analyst

Pittsburgh | *Urban & Suburban*

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
28,889	$35M	$22.84	15%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+3.8%	0.4%	2.7%	1.8 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Pittsburgh is a maturing high-tech market with a diverse mix of companies focusing in areas of advanced manufacturing, energy, life sciences and information technology. The region is also home to two renowned higher education institutions, Carnegie Mellon University and the University of Pittsburgh, both of which offer extensive curriculum in science and technology. High-tech companies in Pittsburgh are concentrated in three primary submarkets: Greater Downtown, Oakland / East End and Cranberry. Coincidentally, the top three high-tech transactions over the last year occurred in these submarkets.

Downtown recently welcomed a new high-tech company to its tenant roster as Computer Sciences Corporation, or CSC, opened a 57,000-square-foot office at 1350 Penn Avenue. Also growing downtown is 4moms, which makes technologically advanced baby products. The company will nearly triple its footprint with an upcoming move to 81,000 square feet at 912 Fort Duquesne Boulevard. Meanwhile, in the Cranberry submarket, RDX established a new headquarters in the Keystone Summit Corporate Park. RDX, a pioneer of remote database administration services, relocated its headquarters to 27,000 square feet at 2000 Ericsson Drive. The move allowed the rapidly growing company to expand its footprint and combine two remote offices. Lastly, in what was arguably the most influential high-tech development in Pittsburgh over the last year, Google officially announced it would expand its offices at Bakery Square in the Oakland/East End submarket. Google signed a lease for an additional 66,000 square feet, bringing the tech giant's total presence to more than 200,000 square feet.

Top lease transactions

6420 Penn Avenue | Oakland / East End
Tenant: Google
Size: 66,000 s.f.
Expansion

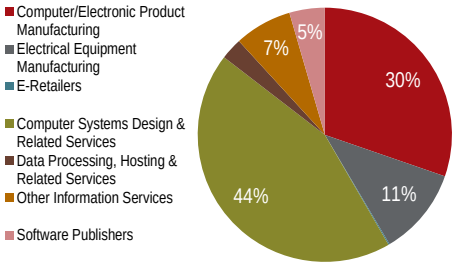
1350 Penn Avenue | Greater Downtown
Tenant: CSC
Size: 57,000 s.f.
Sublease

2000 Ericsson Drive | Cranberry
Tenant: RDX
Size: 27,000 s.f.
Relocation

Top High-tech submarkets

Greater Downtown	Oakland / East End	Cranberry

High-tech employment concentration



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: Google	High-tech subsector: Business & Consumer Products/Services

No | Some | Yes

Patricia Raicht
Vice President, Research

Portland | Urban & Suburban

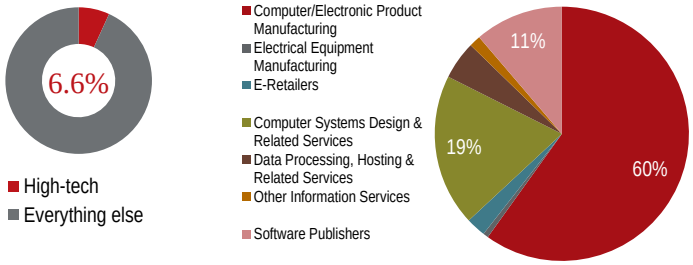
Market scorecard

Jobs	Venture Capital	Cost	Office Supply
58,861	$53M	$21.87	13.5%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+3.6%	0.6%	4.8%	650k s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

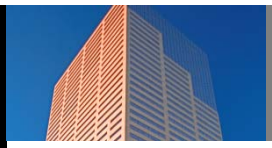
The high-tech market in Portland is dominated by two major forces: quickly expanding small to mid-size high-tech service firms who are clustering in the central city, and electronics manufacturing firms, generally located in the Sunset Corridor; the latter is led by Intel, the region's largest employer. With more than 17,500 employees in the Portland region, representing their largest U.S. presence in any state, Intel's commitment to Oregon is significant and recently underscored by their $6 billion+ investment in two new research labs in the area.

Driven by the area's growing high-tech talent pool, competitive high-tech wages, reasonable cost of living and low cost of doing business, Portland has seen a sharp increase in leasing activity from high-tech service firms. Local expansions have come in many forms including organic growth from Portland companies, acquisition-hires, firms seeking to establish a Portland beachhead, and those expanding their local footprint. Strong demand from high-tech firms has had a significant impact on the Portland office market as occupiers jockey for the best creative spaces with the right amenity set, while landlords improve their offerings to appeal to high-tech firms focused on talent retention and recruitment. Rental rates have escalated rapidly in the CBD, with Class A rates up over eight percent in the past year, while opportunities for medium to large blocks of space are limited. The Close In Eastside has emerged as a more economic option for smaller start-up and entrepreneurial firms as residential and retail development activity has taken off in the area. Securing space for growth will be a challenge for high-tech firms in the near term, but development and redevelopment activity has ramped up significantly and options will be delivering to the market in the next 24 months.

High-tech employment concentration



Top lease transactions



US Bancorp Tower | CBD
Tenant: New Relic
Size: 82,229 s.f.
Expansion and extension

Rock Creek Center | Sunset Corridor
Tenant: Fiserv Solutions
Size: 77,226 s.f.
Renewal

Block 300 | CBD
Tenant: Puppet Labs
Size: 74,784 s.f.
Relocation and expansion

Top High-tech submarkets

CBD	Sunset Corridor	Close In Eastside

Features and amenities

Mehtab Randhawa
Research Manager

Raleigh-Durham | Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
52,147	$9.2M	$20.40	17.7%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+2.8%	0.1%	6.0%	1.3 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Considered to be one of the major innovation hubs in the U.S., Raleigh-Durham continues to attract high-tech firms. The availability of affordable vacant land, lower real estate prices and a huge pool of talent from the three major universities (UNC Chapel Hill, Duke University and NCSU) makes this region attractive to big and start-up high-tech employers.

The RTP / RDU submarket is home to firms like IBM, Cisco, NetApp and Lenovo. Earlier this year, The Research Triangle Foundation, a non-profit organization responsible for building the Research Triangle Park (RTP), announced its acquisition of approximately 100 acres for $17 million. The Foundation plans to create a mixed-use development, called the Park Center that will aim at making the area flexible to respond quickly to the ever-changing office needs.

Lenovo signed one of the largest leases in the Triangle's history totaling 450,000 square feet at the former Sony Ericsson campus in the RTP. Meanwhile, the Triangle's CBDs are the new hub for a burgeoning population of high-tech entrepreneurs and start-ups. In the past year, American Underground, an entrepreneurial co-working space for start-ups, has doubled its office footprint in Downtown Durham, expanding to Downtown Raleigh and was named a "Google for entrepreneurs high-tech hub."

Going forward, as high-tech firms hire more millennials in the Triangle, expect the office landscape to change as landlords work toward modernizing their facilities to accommodate this new tech-savvy workforce.

Top lease transactions

7001 Development Drive | RTP / RDU
Tenant: Lenovo
Size: 450,000 s.f.
Relocation and expansion

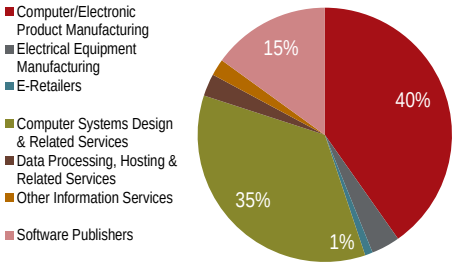
901 Main Campus Drive | West Raleigh
Tenant: ABB
Size: 94,000 s.f.
Relocation and expansion

3020 Carrington Mill Blvd | RTP / RDU
Tenant: SciQuest
Size: 78,565 s.f.
Relocation and expansion

Top High-tech submarkets

RTP / RDU	Cary	West Raleigh

High-tech employment concentration



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: IBM	High-tech subsector: Computer/ Peripherals

No | Some | Yes

Geoff Thomas
Research Analyst

Richmond | Urban & Suburban

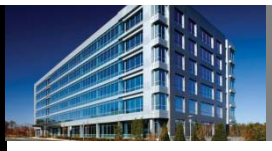
Market scorecard

Jobs	Venture Capital	Cost	Office Supply
8,413	$0	$18.42	17%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
-1.8%	0%	0.3%	0.4 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Richmond's high-tech base is primarily dispersed throughout the suburban submarkets due to a high concentration of IT service firms that contract with Richmond's top employers. While larger firms prefer the Innsbrook submarket due to the high density of business, starts-up with smaller footprints have migrated towards the Near West End submarket that offers lower rents, walkable amenities and a more urban feel. The largest challenge for users is the overall lack of quality space options, especially in the Northwest quadrant. This is even more prevalent for creative loft space, which is primarily located in the Downtown submarket cluster and the Manchester District south of the James River across from the CBD. In these urban submarkets, most of Richmond's historic office and warehouse buildings have been repurposed to multifamily, which left only a handful of options for a tenant willing to prelease a historic rehab development. Additionally, these developments cater to more established firms, such as Tumblr, which are accustomed to modern finishes and ultimately higher rents due to above average construction costs.

Firms seeking more cost-effective space options have ventured out of professional office space entirely due to tightening fundamentals and landlord favorable conditions. Starts-ups are leasing office-heavy flex suites due to lower rent costs and triple-net leases that offer controllable expenses. This is important for high-tech firms whose personnel often work remotely and generally use the office as a collaboration center rather than a dedicated workspace.

Top lease transactions



6641 W Broad Street | Glenside/Broad
Tenant: Verisk Health
Size: 29,873 s.f.
Expansion

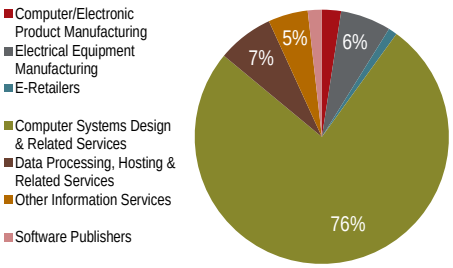
15521 Midlothian Pky | Rt 288 Corridor
Tenant: AMC high-tech
Size: 6,439 s.f.
Renewal and Expansion

1425 W Main Street | Near West End
Tenant: Tahzoo
Size: 3,869 s.f.
Relocation

Top High-tech submarkets

Innsbrook	Near West End	Far West End

High-tech employment concentration



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: None	High-tech subsector: None

No | Some | Yes

Jenny Taumoepeau
Associate

Salt Lake City | Urban & Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
29,659	$115M	$19.18	11%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+0.8%	1.2%	1.00%	1 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

High-tech firms are clustered all along the Wasatch Front mountain range. The area has been dubbed "Silicon Slopes" as the Wasatch Front houses nearly 4,300 high-tech companies. In the past few years, many high-tech tenants have gravitated to Lehi, Utah. This is the center point between the two most populated counties in Utah, Salt Lake County and Utah County. Tenants such as Adobe, Xactware and Microsoft are calling the area home. Much of today's demand has also been centered in the Downtown Salt Lake City submarket. With the completion of Mass Transit and the City Creek indoor/outdoor mall, downtown Salt Lake City has seen a lot of high-tech firms expanding and relocating.

Salt Lake City's high-tech sector has been in growth mode the past few years. The city has seen a steady flow of new start-ups, existing expansions and out of state relocations. One of the biggest opportunities for the Salt Lake City high-tech market is the rising real estate prices in Silicon Valley. High-tech companies are looking for markets with lower costs. Thumbtack and Reddit both recently opened expansion offices in Salt Lake City rather than growing in Silicon Valley.

Landlord flexibility remains one the biggest challenges facing start-ups in Salt Lake City. Most owners desire long-term leases and creditworthy tenants, often a challenge for high growth high-tech start ups.

Top lease transactions

View 72 | Central Valley
Tenant: Overstock.com
Size: 260,000 s.f.
Built-to-suit

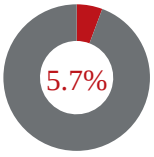
Draper Pointe | South Valley
Tenant: Storage Craft
Size: 75,000 s.f.
New lease

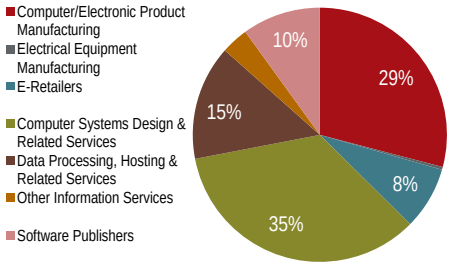
Riverpark | South Valley
Tenant: MPI
Size: 40,000 s.f.
New lease

Top High-tech submarkets

South Valley	CBD/P	Utah County

High-tech employment concentration





Features and amenities

Eileen Tumalad
Senior Research Analyst

San Diego | Suburban

Market scorecard

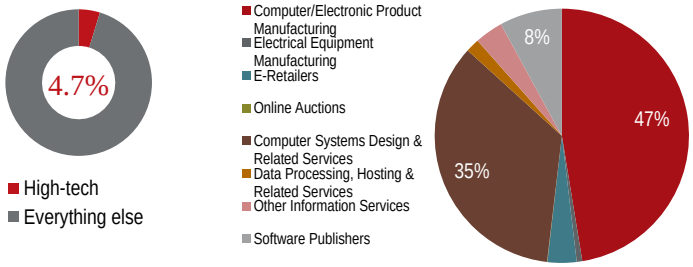
Jobs	Venture Capital	Cost	Office Supply
51,571	$56M	$27.40	18.7%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+0.7%	0.6%	5.3%	646,967 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

San Diego is home to high-tech tenants in industries such as software, microchip manufacturing, and wireless technologies with a diversity of firms in various stages of the business lifecycle. Mature tenants help foster a synergistic environment for start-up and auxiliary firms. High-tech firms are primarily concentrated in the Sorrento Mesa and UTC/Eastgate submarkets and Sorrento Mesa is known as the high-tech and telecom hub of San Diego. Qualcomm, a wireless high-tech firm headquartered in Sorrento Mesa, occupies over four million square feet countywide and is the principal driver of the region's telecom and IT sectors, spurring numerous start-up companies and attracting other major industry players to San Diego. UTC has historically been home to venture capital firms that have helped fund high-tech start-ups, and thanks to its close proximity to UCSD and other research institutions, this submarket continues to be a desirable area for high-tech firms.

Regional employment in the high-tech sector has far outpaced other office-using jobs, boding well for ongoing growth in the market. San Diego's well-educated labor force, extensive network of local universities and research institutions, and an environment where employees thrive all contribute to high-tech firms' attraction to San Diego.

Landlords are embracing the space requirements of high-tech tenants by proactively building out space with exposed ceilings and open floor plans, which, in part, provides limitless options for tenants in incubator programs. The lack of large blocks of available space for larger tenants and the relatively high cost of living and doing business in San Diego remain substantial obstacles for high-tech tenants.

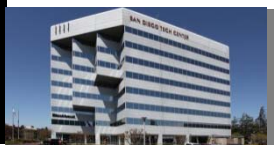
High-tech employment concentration



Top lease transactions

9805 Scranton Road | Sorrento Mesa
Tenant: Sony Computer Entertainment
Size: 190,268 s.f.
Renewal

14118 Stowe Drive | Poway
Tenant: Kontron America
Size: 127,495 s.f.
Renewal



9605 Scranton Road | Sorrento Mesa
Tenant: Qualcomm
Size: 59,798 s.f.
Expansion

Top High-tech submarkets

Sorrento Mesa	UTC/Eastgate

Features and amenities

Amber Schiada
Vice President, Research

San Francisco | Urban

Market scorecard

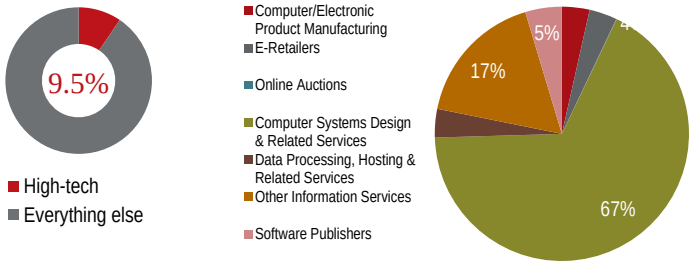
Jobs	Venture Capital	Cost	Office Supply
49,368	$3.2B	$60.09	10.9%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+18.1%	34.1%	10.0%	3.6 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

The high-tech industry has reshaped the face of the office market in San Francisco. Robust job growth within the sector over several years has sparked an incredible amount of demand. Out of the 7.5 million square feet of office demand today, high-tech accounts for more than one-third. In the second quarter alone, the high-tech sector was responsible for nearly 90.0 percent of all net absorption gains citywide and leasing activity shot up 40.0 percent year-over-year as a direct result of the insatiable demand of high-tech tenants. Consistent demand within the sector has supported several development projects comprising more than 3.6 million square feet of construction, 65.0 percent of which is pre-leased entirely by high-tech tenants.

San Francisco has been effective in attracting a wide-range of high-tech companies from around the world, primarily due to the highly-educated workforce and dense knowledge economy. With several top-tier universities nearby in addition to clusters of high-tech companies, the access to human capital is much greater than most other office markets in the country. The ease of access to public transportation and walkability of the urban core and an abundance of nearby amenities further adds to the allure of setting up shop here.

However, such a strong tech-focused market comes at a price. Rental rates now exceed $60.00 per square foot and availability remains limited. Despite the sticker shock, there are still affordable options in fringe submarkets as well as several incubator and accelerator spaces that promise to support fledgling high-tech companies looking to grow.

High-tech employment concentration



Top lease transactions

415 Mission Street | South Financial
Tenant: Salesforce.com
Size: 713,727 s.f.
New / Expansion

222 Second Street | South Financial
Tenant: LinkedIn
Size: 450,209 s.f.
New / Expansion

1 Market Plaza | South Financial
Tenant: Google
Size: 270,706 s.f.
New / Expansion

Top High-tech submarkets

South Financial	South of Market	Mid-Market

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: Salesforce.com	High-tech subsector: Software

No | Some | Yes

Christan Basconcillo
Senior Research Analyst

San Francisco Peninsula | Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
43,407	$342M	$45.96	16.7%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+6.1%	3.6%	3.9%	332,425 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Located between San Francisco and Silicon Valley, the San Francisco Mid-Peninsula houses a highly-educated talent pool and is headquarters to several prominent high-tech companies, including Google, Facebook, Oracle and GoPro to name a few. The region boasts one of the highest concentrations of high-tech employment, second to Silicon Valley. Despite being overshadowed by its neighbors, the Mid-Peninsula has steadily emerged from the 2007 recession. Its central location in the Bay Area alone has made it an attractive location for expanding high-tech companies looking to service clients and recruit talent from neighboring markets.

Over the past 12 months the region's local high-tech sector has been experiencing significant growth, especially from rapidly expanding software companies. Much of the demand is being driven by high-tech tenants who have been pushed north out of overheated Silicon Valley submarkets like Palo Alto, as there are many areas of the Mid-Peninsula that offer high-image product at more affordable rents. The result has been a growing number of high-tech start-ups migrating north to submarkets with micro-urban areas like Menlo Park, Redwood City, and San Mateo.

One of the biggest challenges faced by the Mid-Peninsula is the increased competition for talent between neighboring high-tech markets. The vibrant and hip environment of San Francisco and the Valley's well-established high-tech sector have made it challenging from a recruiting standpoint and has created a three-way tug-of-war for new talent.

Top lease transactions

1-2 Circle Star Way | San Carlos
Tenant: Softbank
Size: 207,808 s.f.
New lease

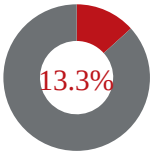
2001 Junipero Serra Road | Daly City
Tenant: Genesys Telecom
Size: 156,477 s.f.
Renewal

950 Elm Avenue | San Bruno
Tenant: Walmart.com
Size: 105,573 s.f.
Expansion

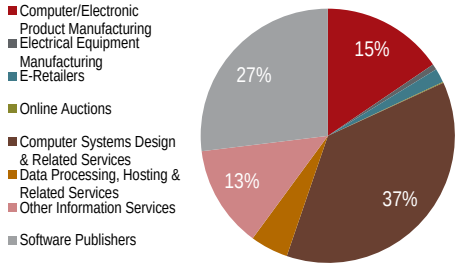
Top High-tech submarkets

Menlo Park	Redwood City	San Mateo

High-tech employment concentration



High-tech
Everything else



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: Oracle	High-tech subsector: Software

No | Some | Yes

Alex Muir
Research Analyst

Seattle-Bellevue | Urban & Suburban

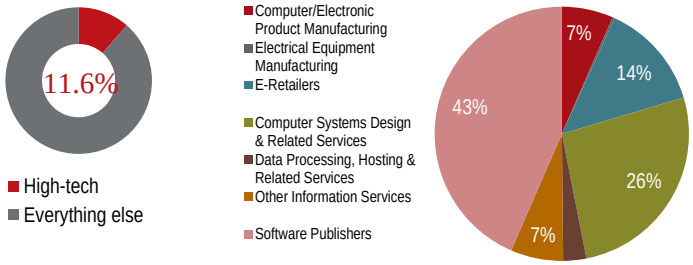
Market scorecard

Jobs	Venture Capital	Cost	Office Supply
120,539	$266M	$31.17	15.9%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+7.6%	2.7%	2.9%	1.7 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Seattle is a desired location for high-tech companies for several reasons, including access to quality real estate in close proximity to where high-tech workers want to live, a flourishing start-up scene which is bringing significant venture capital to the region, an emerging position as "Cloud City," and proximity to major blue chip firms, such as Amazon and Microsoft. However, the most significant reason has to be the abundance of young, highly educated workers. In a recent survey by NerdWallet, Seattle was ranked as the second best place for millennials to live. Furthermore, NerdWallet ranked the Seattle area as the second best place for STEM graduates. These strong demographics have led technology to be the most significant driver of employment growth and office demand in the Puget Sound region with the sector currently accounting for more than 40 percent of leasing activity. Competition for tenants is intense while the demand for creative office space is intensifying. Tenants want a rich amenity set and there is a new emphasis on incorporating a millennial-friendly retail mix in buildings. The amenities must also include an updated lobby, athletic facility, conference center, bike storage with lockers and showers, deck or other outdoor spaces, and a strong component of sustainability.

High-tech tenants have a propensity to locate in creative urban atmospheres, and one of the major challenges in Seattle is creating the inventory to satisfy demand. In the Seattle CBD, many owners have actively begun addressing this issue by spending significant capital improving their building lobbies and amenities, to turn seemingly outdated product into hip, tech-friendly space. Developers are addressing the pent up demand in the Bellevue CBD, by racing to break ground on previously delayed projects.

High-tech employment concentration



Top lease transactions

1915 Terry Avenue | Lake Union
Tenant: Amazon
Size: 274,358 s.f.
Expansion

2201 6th Avenue | Belltown/Denny
Tenant: Amazon
Size: 208,476 s.f.
Expansion

635 Elliott Avenue W | Queen Anne
Tenant: Amazon
Size: 187,434 s.f.
Expansion

Top High-tech submarkets

Lake Union	Seattle CBD	Bellevue CBD

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenants: Amazon Microsoft	High-tech subsectors: Software Computer/Peripherals

No | Some | Yes

Christan Basconcillo
Senior Research Analyst

Silicon Valley | Suburban

Market scorecard

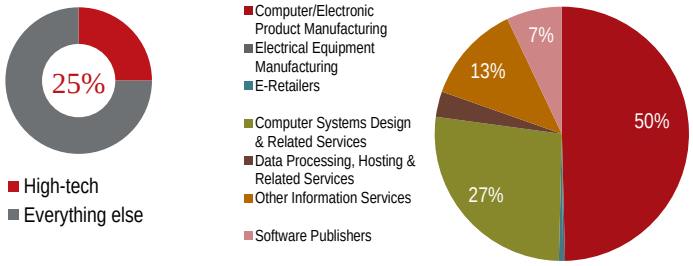
Jobs	Venture Capital	Cost	Office Supply
213,594	$1.7B	$40.44	15%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+5.2%	18.0%	14.2%	3.5 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

Silicon Valley has long been at the epicenter of the high-tech sector and is well-known for its innovation and talent pool. The recent rise and evolution of mobile devices has helped to pave the way for software companies as more and more devices are being connected to the "internet of things." In recent years, the Valley's high-tech sector has experienced rapid growth, helping to improve local economic conditions by way of job creation. Companies have entered into a battle for talent and are aggressively recruiting engineers, programmers and software coders from nearby colleges, like Stanford University, as well as other schools nationwide.

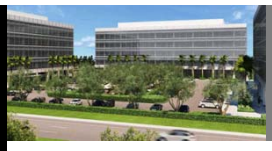
While established high-tech companies continue to expand, the emergence of high-tech incubators such as StartX, Y Combinator, Hacker Dojo and 500 start-ups have been major innovation hubs. There has been a growing number of successful high-tech start-up "graduates" who are bringing youthful innovation to the Valley. This has been catching the attention of large high-tech companies, as they have been looking to start-ups as potential acquisition targets in order to expand their own capabilities through "acqui-hiring".

Despite the rapid expansion of the high-tech sector, underlying socio-economic issues could slow future growth. Housing prices have skyrocketed and are now at 2007 levels, creating a potential barrier of entry for new high-tech recruits wanting to relocate to the Valley. Additionally, the rise in the Valley's local population is creating strain on the area's infrastructure as traffic conditions have significantly worsened.

High-tech employment concentration

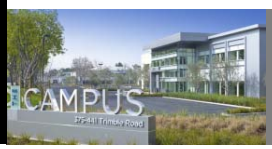


Top lease transactions



2755 & 2795 Augustine Drive | Santa Clara
Tenant: Ericsson
Size: 412,492 s.f.
Relocation and Expansion

3400 Hillview Avenue | Palo Alto
Tenant: Nest Labs (Google)
Size: 207,857 s.f.
Expansion



375-399 W Trimble Road | N San Jose
Tenant: Verizon Digital TV
Size: 135,000 s.f.
Relocation and Expansion

Top High-tech submarkets

Palo Alto	Mountain View	Sunnyvale

Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: Google	High-tech subsector: Software

No | Some | Yes

Marc Miller
Research Analyst

South Florida | Urban & Suburban

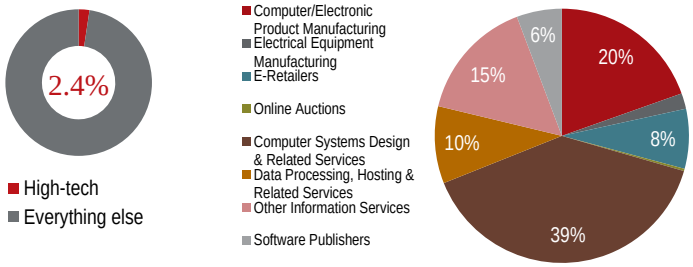
Market scorecard

Jobs	Venture Capital	Cost	Office Supply
46,656	$2.7M	$29.52	15.3%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
+3.4%	0.03%	2.0%	128,580 s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

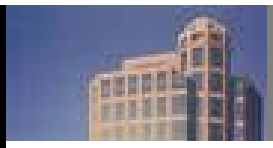
This year recorded one of the strongest impetuses of Miami and the region's potential as an emerging urban high-tech hub. Two noted events in 2014 served as validation for the growing start-up sector, which both focused on this market's position of servicing and capturing international business from Latin America. Earlier this year, the Technology Foundation of the Americas hosted eMerge Americas, a large-scale high-tech conference focused on trends driving growth in Latin America, whose online population is rapidly growing faster than any other region in the world, according to *comScore, Inc*. In addition, the second annual Start-Up City: Miami, an event intended as a "gathering of leading entrepreneurs and high-tech" expects to explore models of urban high-tech taking root in Miami and across the world. There is certainly buzz forming around Miami as an international high-tech hub, particularly considering Microsoft will locate its first U.S.-based Innovation Center at the incubator Venture Hive in Downtown; however, the impacts on the traditional office market in South Florida have yet to materialize.

While notable companies, such as Apple, Yahoo, Microsoft and Citrix Systems have a sizable presence in the market, companies are not relocating to core office product in traditionally tracked markets. Rather, incubators such as the FAU Research Park in Boca Raton and LAB Miami, located in the burgeoning Wynwood District on the outskirts of Downtown Miami, are home to converted warehouses that cater to the creative space needs of the sector. However, as the industry gains a foothold in South Florida, expect more established high-tech companies to begin locating operations in traditional office space, especially those focused on gaining access to Latin American markets.

High-tech employment concentration



Top lease transactions



200 E. Las Olas Blvd. | Downtown FTL
Tenant: Prolexic high-tech
Size: 33,000 s.f.
Relocation

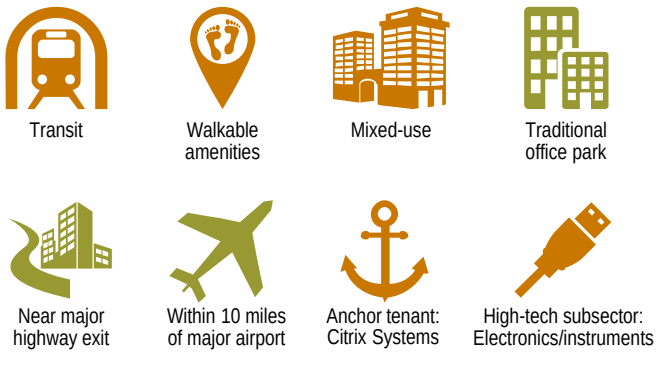
Causeway Square | Northeast Miami
Tenant: SunGard
Size: 18,000 s.f.
Expansion

Corp. Ctr. @ the Gardens | N. Palm Beach
Tenant: BeQuick Software
Size: 12,500 s.f.
Relocation

Top High-tech submarkets

Boca Raton	Western Broward	Midtown/Wynwood

Features and amenities



Sara Hines
Senior Research Analyst

Suburban Maryland | Suburban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
39,501	$15M	$26.34	18.7%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
-0.7%	0.2%	-1.0%	0.5 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

There is a lack of organic growth in the high-tech sector of Suburban Maryland and continued federal government uncertainty has left many of these businesses with an undefined path. Most companies are tied to the government contracting world that is alive but not well in Metro DC. There is a lack of action in the federal sector, as the government has done little in the way of making decisions or deciding on a budget, which creates a domino effect to the high-tech sector and creates an overall stagnant environment.

The attraction of the Suburban Maryland market is its proximity to the federal government. The changes in the market start in the heart of Washington, DC and flow to the arteries of outlying submarkets into Suburban Maryland. Convenient access into the District is available through the Red Line Metro, MARC train and major highways, such as I-495.

Uncertainty centered around the government's fiscal situation could continue to hinder organic growth across the region. Shorter term, given continued political and economic uncertainty, weak demand in the Suburban Maryland market will likely persist throughout 2014. Government's inaction had trickle-down effects on contractors and associated business. Until there is more political clarity, and both public and private sector tenants have a better understanding of what the future may bring, persisting low levels of tenant demand will likely keep the market static.

Top lease transactions

2277 Research Boulevard | I-270 Corridor
Tenant: CNSI
Size: 117,685 s.f.
Relocation and expansion

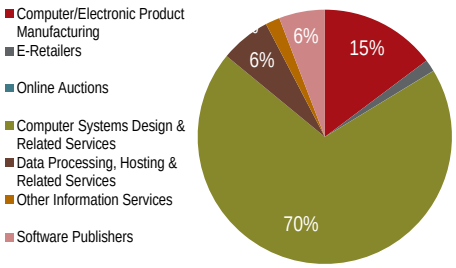
1301 McCormick Drive | Prince George's County
Tenant: CSC
Size: 45,636 s.f.
Relocation and contraction

7700 Old Georgetown Road| Bethesda-CBD
Tenant: Brivo Systems
Size: 16,166 s.f.
Relocation

Top High-tech submarkets

I-270 Corridor	Bethesda CBD	Rockville Pike

High-tech employment concentration



Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: None	High-tech subsector: IT Services

No | Some | Yes

Carl Caputo
Research Analyst

Washington, DC | Urban

Market scorecard

Jobs	Venture Capital	Cost	Office Supply
23,349	$69M	$49.22	12.6%
High-tech employees	Q2 2014	Average asking rent ($ psf)	% of total supply available
-1.7%	0.7%	- 0.2%	1.7 m.s.f.
Annual growth	of U.S. high-tech total	Annual growth	Under construction

As the Washington, DC economy continues to diversify, demand from the high-tech sector has increased. In the District, high-tech is segmented into two main subsectors: consumer high-tech companies and lobbying / government relations.

The emergence of consumer high-tech companies has provided an avenue for growth, helping offset soft demand in the traditional segments of the tenant base. With one of the most highly-educated workforces in the nation, a growing young population and a local government which is taking initiative to fund start-up high-tech companies, Washington, DC has seen an increasing number of consumer high-tech companies pop up throughout the District. These companies have emerged in the shape of a barbell with a concentration located on or near Dupont Circle to the west and Shaw to the east.

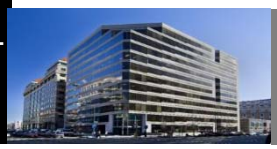
The high-tech sector has also experienced growth as a result of an increase in lobbying efforts among mature high-tech companies. The market has seen robust demand from companies such as Google, Twitter, eBay and Amazon. The lobbying presence of high-tech companies will likely continue to grow as concerns over privacy, net neutrality and other matters mount.

The supply of unique, creative office space is limited in Washington, DC given the lack of atypical buildings that are suitable for conversion to office. As a result, landlords have started to consider renovating space in traditional office buildings to create unique environments that would help attract growing high-tech tenants.

Top lease transactions

601 New Jersey Ave NW | Capitol Hill
Tenant: Amazon
Size: 21,132 s.f.
New lease

Wonder Bread Factory | Uptown
Tenant: iStrategyLabs
Size: 16,721 s.f.
Relocation and expansion

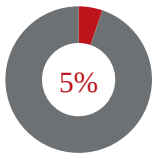


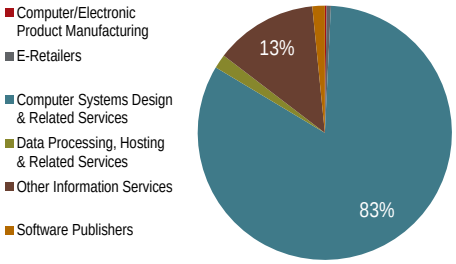
1250 Eye St NW | East End
Tenant: eBay
Size: 10,594 s.f.
Relocation and expansion

Top High-tech submarkets

Dupont Circle	Shaw	Gallery Place

High-tech employment concentration





Features and amenities

Transit	Walkable amenities	Mixed-use	Traditional office park
Near major highway exit	Within 10 miles of major airport	Anchor tenant: None	High-tech subsector: Business & Consumer Products/Svcs.

No | Some | Yes

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As high-tech companies grow, their ability to remain nimble and flexible with the changing consumer landscape will be important, but perhaps just as important will be their ability to develop nimble and flexible real estate strategies to grow and prosper.

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