

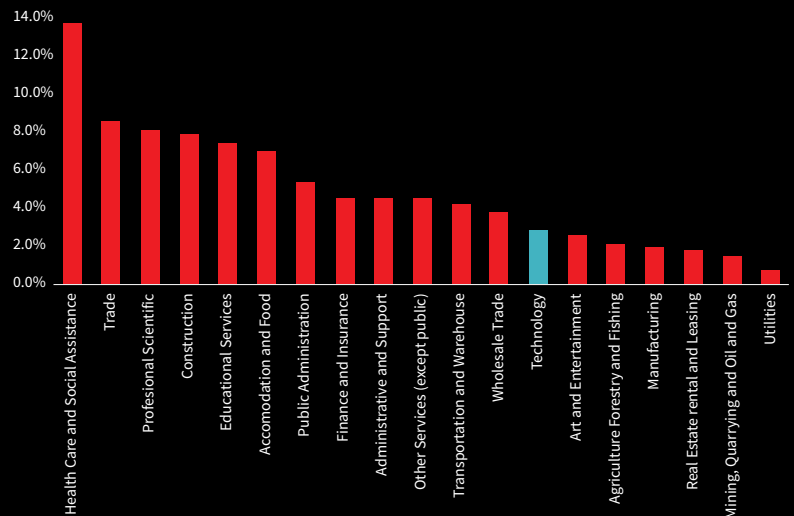


Tech sector employment has reached an all-time high

In the first half of 2016, the Canadian tech sector reached an all-time high, employing over 503,000 people across Canada or 2.8 percent of total employment. While the sector is relatively small when compared with other key sectors such as: Professional Scientific and Technical Services (7.8%), construction (7.7%), and Finance & Insurance (4.5%), it is now almost double that of Mining, Quarrying, and Oil and Gas Extraction.

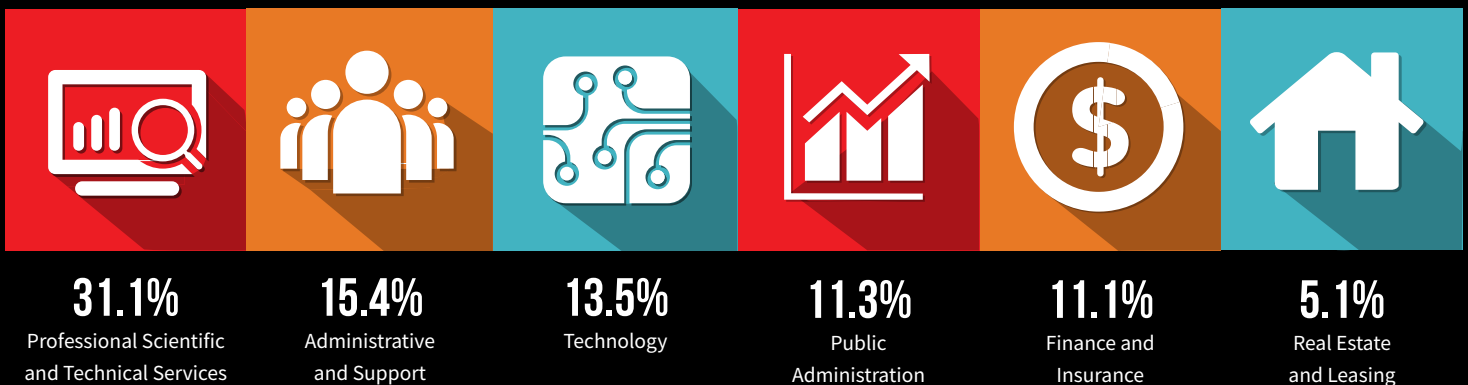
Compared to other office-using sectors, the tech sector has expanded at an impressive pace growing 13.5 percent since 2006, and out-pacing the growth seen in sectors such as Finance & Insurance, and Real Estate & Leasing.

SHARE OF TOTAL EMPLOYMENT Q2 2016 (%)



CUMULATIVE SECTOR EMPLOYMENT GROWTH: 2006 - Q2 2016 (%)

Source: JLL Research, Statistics Canada

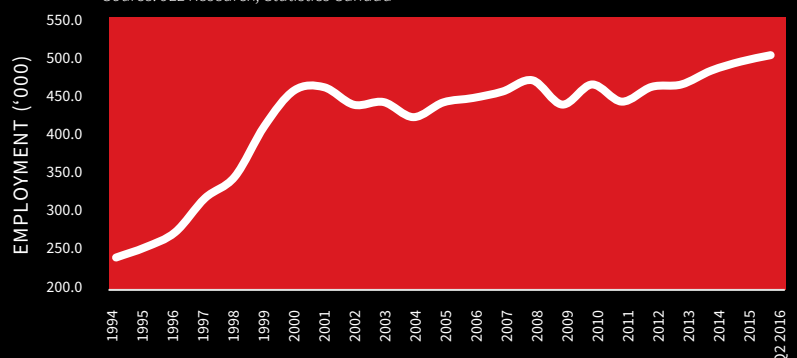


Technology sector growth on the rise

After growing at an accelerated pace of almost thirteen percent annually in the years leading up to the dot.com era, primarily due to tech giants like Nortel Networks and JDS Uniphase Corp., growth tapered to 0.7 percent annually for the next decade and a half. Recently, growth has picked up again with average annual employment growth from 2012 to 2015 reaching 3.1 percent and is spread across the large blue chips and now, small to mid-size innovative tech start-ups.

HISTORICAL TOTAL TECH EMPLOYMENT IN CANADA (%)

Source: JLL Research, Statistics Canada



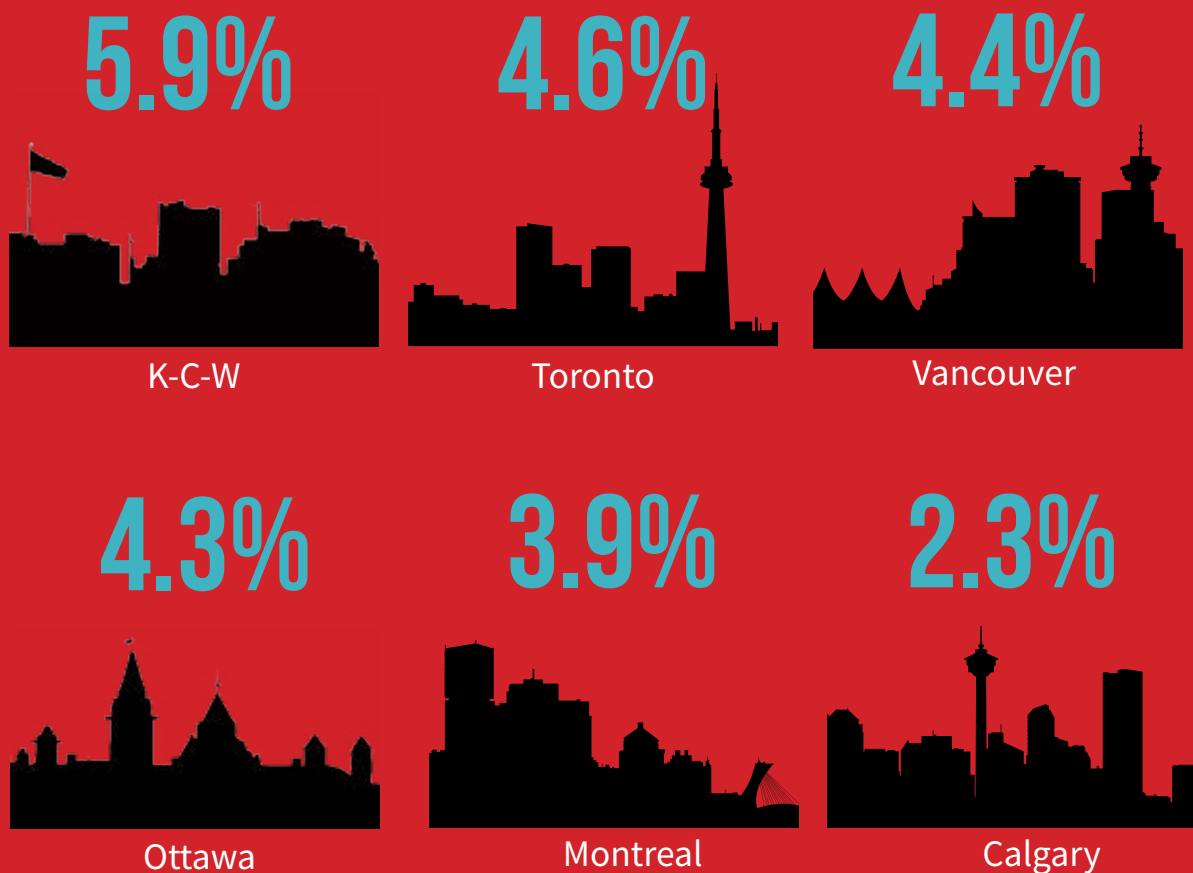
Source: JLL Research, Statistics Canada

Geographic variations

Tech sector employment has vast geographic variations. Not surprisingly, Kitchener-Cambridge-Waterloo (K-C-W) (5.9%), Toronto (4.6%), Vancouver (4.4%), Ottawa (4.3%), and Montreal (3.9%) lead the pack among Canadian cities by share of tech employment. All markets have a strong mix of well established, U.S. based and/or global tech firms, and younger start-ups. Smaller, less diversified markets, such as Calgary (2.3%) and Edmonton (1.4%), find themselves below the national average (2.8%).

Despite its relatively small tech sector, employing just shy of 17,000 people, K-C-W has successfully become an important tech hub in Canada. The area is home to many global players, including Google, Intel, Electronic Arts, and SAP, but also has home-grown companies such as BlackBerry, Open Text and D2L. BlackBerry has historically been the key contributor to growth, although its recent challenges have impacted tech employment (and real estate footprint) significantly. The 'silver lining' has been the availability of experienced ex-BlackBerry talent which has sprung off many new start-ups in the area. The University of Waterloo, however, is the foremost source for talent recruitment here. Google, as an example, has grown from four employees to over 400 in the last ten years, of which 60 percent are graduates from the University of Waterloo.

TECH EMPLOYMENT AS A PERCENT OF TOTAL EMPLOYMENT



Source: JLL Research, Statistics Canada

Venture Capital investments on the rise

2016 is on track to be another record year for Venture Capital (VC) investments in tech firms in Canada. The first half of the year recorded over \$1.05B in investments over 168 deals, an increase of 58.5 percent when compared to the same period a year ago. The increase in activity demonstrates that it's a good time to be a tech start-up in Canada, despite modest growth in the overall economy. The fear of a more precipitous drop in VC investments, after funding growth slowed to 'only' 9.3 percent from 2014-2015 compared to an average annual rate of 22.4 percent from 2010-2014, may have been overstated. In fact, funding continued to increase in the majority of Canadian tech markets with the exception of Calgary and Ottawa. Montreal and Kitchener-Waterloo-Cambridge recorded sizeable growth; in Montreal, VC investments increased from \$73.1 million in H1 2015 to just over \$242 million in H1 2016, while in Kitchener-Waterloo-Cambridge, investments increased from \$32.5 million to \$100.1 million over the same period. Among key transactions in the first half of 2016 is Kitchener-Waterloo-Cambridge's based Buildscale Inc., a video

marketing platform that helps businesses turn viewers into customers, with \$49 million in funding. In addition, Ottawa based Diablo technologies Inc. received \$27 million in a Series C funding round, while Markham, ON based RealMatters Inc. received \$100 million in venture-backed funding, the biggest tech funding round in the first six months of the year. RealMatters provides property valuation services to the real estate industry and has experienced tremendous growth since inception in 2004. Currently valued at over \$600 million, Real Matters is rumored to file for initial public offering (IPO) by year end.

Across the border the VC landscape is not as rosy. U.S funding has been slowing and in dollars invested was relatively flat on a four-quarter trailing basis, down 0.75 percent from one year ago. The number of deals has also dropped in each of the past five quarters since Q2 2016.

All eyes remain on the second half of 2016; if this strong trend persists, Canada will be looking at breaking the \$2.0 billion level in tech VC funding – an exciting and important milestone for the Canadian High Tech start-up world.



Tech behind expansionary leasing activity

Nationally, we continue to see upward pressure on office vacancy rates; construction activity is elevated and tenants in oil-producing markets grapple with the negative impact of lower oil prices. That said, the tech sector has seen robust employment growth, fueling their need for real estate. Across the country, tech companies were behind 14.7 percent of leasing activity, 20,000 square feet or greater in 2016.

Two key office markets, Toronto and Vancouver, continue to show their resilience, exhibiting healthy market fundamentals, expansionary leasing activity and overall, better performance than the broader Canadian market. Both Toronto and Vancouver are relatively diverse office markets with a healthy mix of office using tenants from a number of sectors. Their diversity further becomes apparent when considering their respective year-to-date leasing activity.

In Toronto, tech companies were behind 11.8 percent of leasing activity greater than 20,000 square feet, only exceeded by the Finance, Insurance and Real Estate sectors (FIRE) and Institutions. Tech leasing was recorded across the majority of submarkets, further emphasizing the diversity of this office market. Also worth noting; of leases greater than 20,000 square feet, 43.5 percent were growing and only 8.7 percent reduced footprints with the balance being stable in 2016. The largest tech transaction in 2016 was Shopify, which signed an 110,000 square foot lease at Allied's King Portland Centre, due for completion in 2019.



14.7%

THE AMOUNT OF LEASING ACTIVITY BY THE
TECH SECTOR ACROSS THE COUNTRY



34.4%

LARGE BLOCK LEASING IN 2016
BY TECH COMPANIES IN VANCOUVER



110,000 SF

110,000 SQUARE FOOT LEASE
AT ALLIED'S KING PORTLAND
CENTRE, DUE FOR COMPLETION
IN 2019

Looking west, Vancouver has been a hotbed for tech growth for years and continues to be a desired market for companies to grow their businesses. Its close proximity and same time zone to Silicon Valley and Seattle is extremely advantageous for Vancouver's tech firms. The city also consistently scores high in livability indices and offers a large pool of highly educated people at almost half the cost of Silicon Valley. Tech companies were behind an impressive 34.4 percent of large block leasing in 2016 with leasing distributed fairly equally across suburban and downtown submarkets.

Toronto

OFFICE SUPPLY	OFFICE COST	EMPLOYEE COST	TOTAL COST PER EMPLOYEE
177,834,353 Total inventory (s.f.)	\$33.30 Overall direct asking gross rent	\$105,028 Average technology wage 2015	\$5,789 Annual real estate cost (175 s.f./person)
10.0% Total vacancy	0.4% 12-month rent growth	\$110,420 Average technology wage 2016	\$121,712 All-in cost (real estate and wages)
VENTURE CAPITAL	POPULATION	TALENT POOL	HOUSING
\$575.4M Total funding 2015	6,129,934 Total population	29.9% % of population with bachelor's or higher	\$1,206 Average monthly apartment rent (2015)
59.7% y-o-y change in funding	6.7% Unemployment rate	22.1% Share of millennials (work age, 20-34)	10.0% Urban core premium

Source: JLL Research, Statistics Canada, Thomson Reuters, Robert Half, CMHC

Top Leasing Transactions

620 King Street W Downtown West Tenant: Shopify Size: 110,271 s.f. New	20 York Mills Blvd North Yonge Tenant: Xerox Size: 28,268 s.f. New	2 Fraser Avenue King & Dufferin Tenant: Vena Solutions Size: 30,000+/- s.f. New
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Opportunity

Tech employment in Toronto now sits at an all-time high, surpassing the cyclical high reached 15 years ago. Year-over-year growth has also been at an impressive 12 percent. Toronto has an extremely diverse talent pool that is, by far, the largest in the country. Additionally, Toronto is currently home to at least 2,500 active tech start-up companies. Many of these firms have been recipients of venture capital funding; which has increased 59.7 percent year over year and 132.8 percent since 2013. These trends are likely to continue and make tech companies an increasingly important component of Toronto's office leasing volume in years to come.

Change in tech employment



Source: JLL Research, Statistics Canada

Challenge

Downtown Toronto's office vacancy is at historic low levels, rents are rising and large blocks of creative office space remain in short supply, especially in the highly desired brick and beam segment of the market. This has forced many tech companies to consider alternative space, often in non-traditional tech submarkets, such as Downtown South. In the suburbs, the greater challenge has been access to millennial talent, as this demographic has shown a preference to live in urban settings flush with amenities. The lack of public transit infrastructure (although improving) can also present a challenge for tech companies in these suburban settings.

Employment

+12.0%

(y-o-y)

+1.4%

Change since 2001



Kitchener-Waterloo-Cambridge

OFFICE SUPPLY	OFFICE COST	EMPLOYEE COST	TOTAL COST PER EMPLOYEE
15,219,173 Total inventory (s.f.)	\$21.89 Overall direct asking gross rent	\$95,916 Average technology wage 2015	\$3,830 Annual real estate cost (175 s.f./person)
7.2% Total vacancy	-3.3% 12-month rent growth	\$100,841 Average technology wage 2016	\$106,476 All-in cost (real estate and wages)
VENTURE CAPITAL	POPULATION	TALENT POOL	HOUSING
\$109.1M Total funding 2015	511,319 Total population	26.4% % of population with bachelor's or higher	\$947 Average monthly apartment rent (2015)
-35.9% y-o-y change in funding	6.1% Unemployment rate	22.4% Share of millennials (work age, 20-34)	NA Urban core premium

Source: JLL Research, Statistics Canada, Thomson Reuters, Robert Half, CMHC

Top Leasing Transactions

55 King Street Downtown Tenant: Igloo Inc. Size: 12,355 s.f. New	The Tannery Building Downtown Tenant: Communitech Size: 61,356 s.f. Sublease	Catalyst137 Downtown Tenant: Miovision Technologies Inc. Size: 128,520 s.f. New
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Opportunity

Local higher-educational institutions form the backbone of the area's tech industry. Almost 60 percent of the University of Waterloo's 2015 class graduated with a degree in a STEM field. Nineteen thousand students are currently enrolled in its 'co-op' program – completing paid placements at local firms. As a result, there are over 1000 start-ups in the region. Established firms have also noticed: notably, Google unveiled its brand new 185,000 square foot office earlier this year (it's largest in Canada). Shopify and Electronic Arts have also recently expanded in the area. On the development side, an innovation complex Catalyst137 is currently under construction – 475,000 square feet of office space targeted to tech firms and various startups.

Change in tech employment



Source: JLL Research, Statistics Canada

Challenge

While there are many compelling reasons for optimism, there are a few cautionary notes. The main one, naturally, is the region's proximity to the Greater Toronto Area. Given Toronto's larger employment base and deeper pools of investment capital - many established tech companies choose to cluster there. The excellent employability of graduates (University of Waterloo ranks in the top 25 most-employable universities worldwide) also provides a challenge. As the Talent pool numbers demonstrate above, retaining this talent has (and will likely continue to be) the greatest obstacle: both for local tech employers and the city overall. With vacancy rates in the innovation and uptown districts being sub-6 percent, and limited supply growth on the horizon, finding suitable office space may also prove challenging.

Employment



Ottawa-Gatineau

OFFICE SUPPLY	OFFICE COST	EMPLOYEE COST	TOTAL COST PER EMPLOYEE
43,454,288 Total inventory (s.f.)	\$32.20 Overall direct asking gross rent	\$100,322 Average technology wage 2015	\$5,635 Annual real estate cost (175 s.f./person)
10.9% Total vacancy	1.2% 12-month rent growth	\$105,473 Average technology wage 2016	\$109,303 All-in cost (real estate and wages)
VENTURE CAPITAL	POPULATION	TALENT POOL	HOUSING
\$205.1M Total funding 2015	1,332,001 Total population	31.5% % of population with bachelor's or higher	\$1,056 Average monthly apartment rent (2015)
147.5% y-o-y change in funding	6.6% Unemployment rate	22% Share of millennials (work age, 20-34)	7.4% Urban core premium

Source: JLL Research, Statistics Canada, Thomson Reuters, Robert Half, CMHC

Top Leasing Transactions

411 Legget Drive Kanata Tenant: Apple Size: 20,100 s.f. New	150 Elgin Street Downtown Core Tenant: Shopify Inc. Size: 11,242 s.f. Expansion	126 York Street ByWard Market Tenant: Kivuto Solutions Inc Size: 5,500 s.f. New
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Opportunity

Ottawa has a large, highly educated workforce in software and communications that tech companies can draw talent from. In addition, recent success stories such as Shopify Inc. and Kinaxis have stimulated a number of new tech start-ups with a strong concentration in the ByWard market. Investors remain bullish on the city's tech sector with VC funding increasing 147.5 percent year-over-year between 2014 and 2015. Year-to-date VC volumes point to another strong year, albeit below the levels seen in 2015.

Challenge

Despite Ottawa's overall rise in vacancy, two submarkets with the highest concentration of tech companies face challenges. In Kanata, the concentration of ownership within the market is spread among few landlords. This has resulted in rental rates edging up and forced tenants to look for alternative options outside Kanata. The ByWard submarket is a preferred location for tech start-ups. Cash strapped start-ups, however, face tight market conditions. Large contiguous blocks have become limited and the overall gross rent has increased 8.4 percent year-over-year.

Change in tech employment



Employment



Source: JLL Research, Statistics Canada

Montréal

OFFICE SUPPLY	OFFICE COST	EMPLOYEE COST	TOTAL COST PER EMPLOYEE
96,370,292 Total inventory (s.f.)	\$29.01 Overall direct asking gross rent	\$103,025 Average technology wage 2015	\$5,076 Annual real estate cost (175 s.f./person)
12.7% Total vacancy	1.1% 12-month rent growth	\$108,315 Average technology wage 2016	\$113,391 All-in cost (real estate and wages)
VENTURE CAPITAL	POPULATION	TALENT POOL	HOUSING
\$285.8M Total funding 2015	4,060,692 Total population	23.5% % of population with bachelor's or higher	\$744 Average monthly apartment rent (2015)
62.8% y-o-y change in funding	7.8% Unemployment rate	21.4% Share of millennials (work age, 20-34)	50.7% Urban core premium

Source: JLL Research, Statistics Canada, Thomson Reuters, Robert Half, CMHC

Top Leasing Transactions

1360 René-Lévesque W. Downtown Core Tenant: Vigilant Global Size: 76,000 s.f. New	400 de Maisonneuve W. Downtown East Tenant: Eidos Interactive Size: 51,000 s.f. Renewal	888 de Maisonneuve E. Downtown East Tenant: WB Games Size: 28,000 s.f. Expansion
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Opportunity

According to KPMG's latest annual Competitive Alternatives Report, Montreal continues to offer the lowest operating costs for the software development industry among North America's 20 biggest cities. The array of attractive tax and financial incentives is helping the startup community and emerging tech hubs around the central business district where nearly two million square feet of loft style space is available for lease. For tech companies looking for a campus style environment, the suburban submarket of Saint-Laurent still offers nearly three million square feet of land sites ready to be developed.

Challenge

The total vacancy rate in Multimedia City, the central business district's main tech hub, remains stable at 6.2 percent and still well below the 10.1 percent downtown market average. Although availabilities are abundant in the surrounding Midtown market, tech companies looking for creative and collaborative type spaces have very limited choices in downtown Montreal. At the end of Q3 2016, less than a handful of buildings in this area could accommodate tenants looking for at least 30,000 square feet of contiguous loft style space.

Change in tech employment



Employment

+3.0%
(y-o-y)

+18.2%
Change since 2001

Source: JLL Research, Statistics Canada

Calgary

OFFICE SUPPLY	OFFICE COST	EMPLOYEE COST	TOTAL COST PER EMPLOYEE
67,822,941 Total inventory (s.f.)	\$34.70 Overall direct asking gross rent	\$104,927 Average technology wage 2015	\$6,072 Annual real estate cost (175 s.f./person)
17.3% Total vacancy	-9.7% 12-month rent growth	\$110,315 Average technology wage 2016	\$116,387 All-in cost (real estate and wages)
VENTURE CAPITAL	POPULATION	TALENT POOL	HOUSING
\$44.6M Total funding 2015	1,405,967 Total population	28.8% % of population with bachelor's or higher	\$1,212 Average monthly apartment rent (2015)
22.6% y-o-y change in funding	8.3% Unemployment rate	24.5% Share of millennials (work age, 20-34)	2.5% Urban core premium

Source: JLL Research, Statistics Canada, Thomson Reuters, Robert Half, CMHC

Top Leasing Transactions

First Alberta Place Downtown Tenant: Guest-Tek Interactive Entertainment Size: 29,000 s.f. Relocation	Hotel Arts Beltline Tenant: Cisco Size: 30,000 s.f. Relocation	University of Calgary Northwest Tenant: CMG Size: 80,000 s.f. New
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Opportunity

When one door closes another opens. This metaphor can be applied to the current soft market conditions of the energy industry. Downtown energy tenant office space maintains high levels of vacancy and no longer demands high premium rents. As this market struggles, real estate opportunities are created for tech companies that want to lease office space in the Downtown market. With employment growth increasing in the technology industry, tech focused tenants that want to lease office space in the CBD can seize the moment.

Challenge

In order to understand the challenges Calgary faces in emerging as a hub of the tech sector, one must look at the culture of the industry itself. Technology companies have traditionally been nestled in the warm climates of the west coast. Convincing companies to leave their comfort zones of areas such as Silicon Valley has proven to be difficult. Calgary is also primarily entrenched in the oil and gas industry, making it hard for tech companies to establish themselves in the city.

Change in tech employment



Source: JLL Research, Statistics Canada

Employment



Metro Vancouver

OFFICE SUPPLY	OFFICE COST	EMPLOYEE COST	TOTAL COST PER EMPLOYEE
56,493,339 Total inventory (s.f.)	\$40.16 Overall direct asking gross rent	\$104,026 Average technology wage 2015	\$7,028 Annual real estate cost (175 s.f./person)
11.7% Total vacancy	1.2% 12-month rent growth	\$109,367 Average technology wage 2016	\$116,395 All-in cost (real estate and wages)
VENTURE CAPITAL	POPULATION	TALENT POOL	HOUSING
\$238.6 Total funding 2015	2,504,340 Total population	27.5% % of population with bachelor's or higher	\$1,144 Average monthly apartment rent (2015)
-40.5% y-o-y change in funding	5.4% Unemployment rate	22.5% Share of millennials (work age, 20-34)	19.0% Urban core premium

Source: JLL Research, Statistics Canada, Thomson Reuters, Robert Half, CMHC

Top Leasing Transactions

TELUS Podium Downtown Core Tenant: Bench Accounting Size: 50,114 s.f. New	SOLO District Burnaby Tenant: Capcom Games Size: 50,428 s.f. New	725 Granville Street Downtown Core Tenant: Mobify Size: 25,419 s.f. New
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Opportunity

Vancouver's tech market has experienced substantial growth over the past decade, due to the rapid expansion of many local start-ups and commitments to Vancouver offices by numerous multinational tech companies. Vancouver's convenient time zone and proximity to Silicon Valley and Seattle allow many American tech companies to take advantage of Vancouver's lower wages and office rents, especially with the currently devalued Canadian dollar. Provincial tax incentives and credits also contributes to Vancouver's growth as a tech market.

Challenge

With home prices steadily rising and average income levels stagnant, Vancouver's residential housing market has become the world's third most unaffordable market. The city now faces an affordability crisis as the high cost of living, along with the less than one percent residential vacancy rate is pushing many young people out of the city, resulting in increased competition among tech firms for skilled workers. Vancouver's relatively sheltered economic environment means investors have been slow to embrace tech, running the risk that startups are not receiving the support that they require in order to succeed.

Change in tech employment



Source: JLL Research, Statistics Canada

Employment





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