

Profile of Sector

High Tech

Sector Overview

The High Tech sector is broadly defined as businesses that produce goods and services that leverage new and advanced technologies in their ultimate outputs. High Tech businesses perform a significant amount of research and development as part of their core operations. These businesses engage in a wide range of activities from manufacturing pharmaceuticals, computers and electronics to providing services such as motion picture production, game and software development, as well as scientific consulting and telecommunications.¹

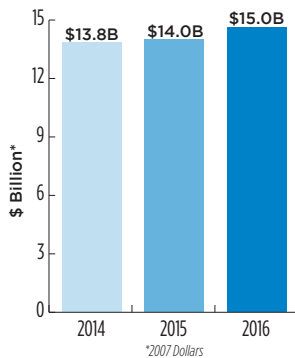
The High Tech sector produces goods and services that drive economic growth by improving productivity and profitability for all types of businesses, while at the same time providing relatively high-wage employment.¹ The Government of BC has developed a methodology for identifying and defining high tech businesses, jobs and economic impact. The three figures below illustrate the important contribution of this sector to the provincial economy.

Why Is This Sector Important?

Economic Impact

The High Tech sector continues to grow, accounting for 7% of provincial GDP annually (\$15B).^{1,10}

FIGURE 1. HIGH TECH SECTOR CONTRIBUTION TO BC ECONOMY¹

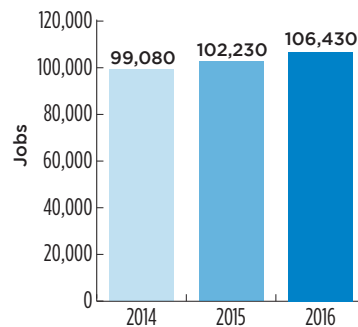


The BC High Tech sector also includes over 10,000 businesses with aggregate revenues of \$28.9B.¹ 80% are small businesses with less than 10 employees.⁵

Jobs

In 2016, the High Tech sector employed 5% of the provincial workforce (106,430 jobs).^{1,10}

FIGURE 2. BC HIGH TECH SECTOR JOBS¹

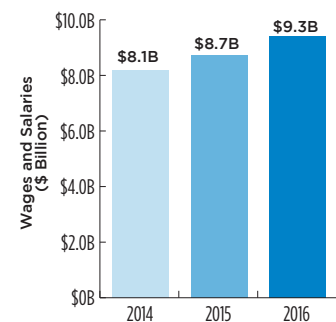


The sector continues to grow with employment expanding 49% since 2001, concentrated in the Vancouver region.⁵ Two-thirds of BC's High Tech businesses are in the Vancouver region.¹

Incomes

The High Tech workforce earned a total of \$9.35B in wages and salaries in 2016.^{1,10}

FIGURE 3. BC HIGH TECH SECTOR WAGES & SALARIES¹



Employees in the High Tech sector earn \$1,690 per week on average, compared to \$920 for the average worker in the province.¹ These jobs pay 84% more than the provincial average.⁵

Indigenous High Tech

BC's First Nations Technology Council (FNTC) established in 2002 is an Indigenous-led tech organization representing Indigenous communities across BC. FNTC partners with Indigenous communities in the province to provide High Tech consulting and training. In 2019, FNTC established a partnership with BrainStation in Vancouver to provide dedicated access for Indigenous students in fields such as data science, web development and UX/UI design.⁷

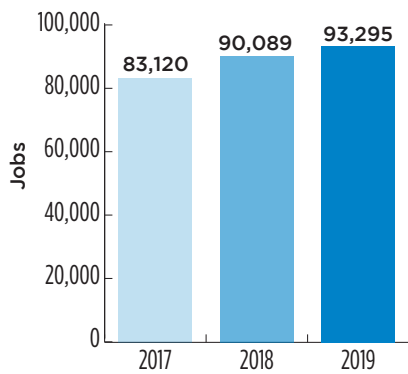
Local Impact

As a key driver to Vancouver’s economy, the High Tech sector’s growth continues to grow the city’s economy.

Employment

Vancouver is the top city in North America for High Tech job growth.¹⁶ The sector’s job base has grown by 30% over the past 2 years.¹⁶ Regionally, there are 75,000 High Tech jobs. This total increases to 93,000 jobs if all types of jobs in the High Tech sector are counted (for example, administrative and management jobs in High Tech companies).¹² Also, with the large amount of new office development, High Tech jobs account for 56% of all new office jobs in the city.¹⁶

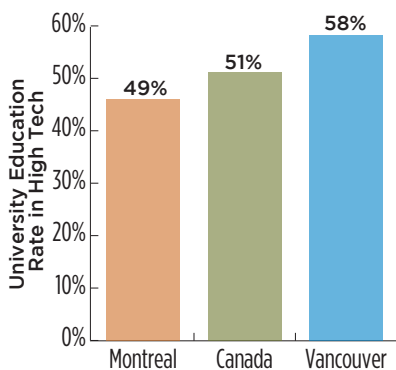
FIGURE 4. HIGH TECH WORKERS IN VANCOUVER REGION¹²



Education & Training

The sector relies on a highly educated workforce. 58% of High Tech workers in Vancouver have a university education compared to 51% nationally for the sector.⁴ Local tech-centric universities were attributed to Vancouver’s 2019 Tech talent ranking of 12th out of 50 of the largest Tech markets in Canada and the United States.⁸

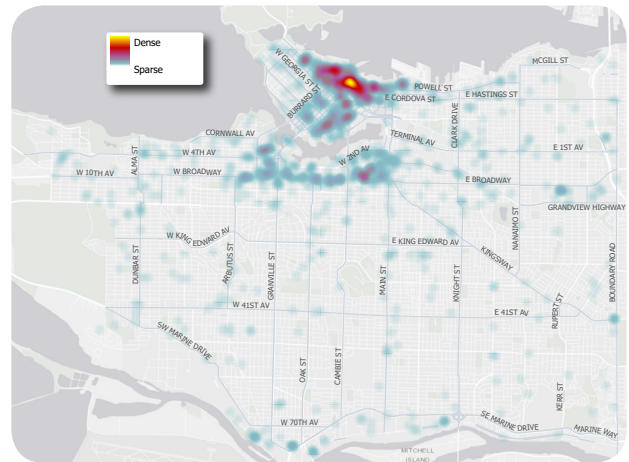
FIGURE 5. UNIVERSITY EDUCATION RATE IN HIGH TECH



Businesses

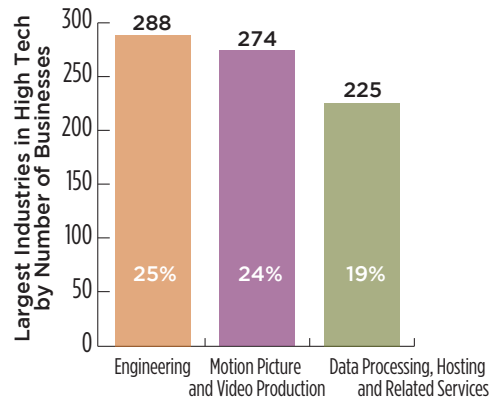
Vancouver has over 1,100 High Tech businesses representing 40% of all High Tech businesses in the region. High Tech businesses represent 39% of total demand for office space and account for 22% of current inventory in the city.^{3,13} The largest cluster of High Tech businesses, which accounts for 1/5 of all High Tech businesses in the region, is located in downtown Vancouver.² The success of the local High Tech sector has attracted and supported industry major players such as Microsoft, Amazon, Apple, Cisco Systems, Samsung, SAP, Zenefits, and locals like Hootsuite.

FIGURE 6. DISTRIBUTION OF HIGH TECH BUSINESSES IN VANCOUVER¹²



The largest industries in the High Tech sector by number of businesses are Engineering (288 or 25%), Motion Picture and Video Production (274 or 24%), and Data Processing, Hosting and Related Services (225 or 19%).²

FIGURE 7. LARGEST INDUSTRIES BY NUMBER OF BUSINESS¹²



High Tech Clusters

Industry clusters drive innovation and entrepreneurship supported by access to capital, knowledge, and talent. Vancouver hosts a number of High Tech clusters.

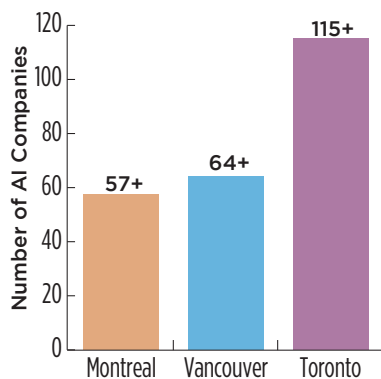
Artificial Intelligence (AI)

Vancouver is an emerging centre for AI with over 64 AI companies.¹¹ The city has attracted AI research thanks to an already established talent pool in visual computing and graphics.¹⁸

A growing number of investment initiatives support the local AI hub such as new incubators, accelerators (Expa Labs, Creative Destruction Labs), and financing partnerships (BDC Capital and Mobify).^{18, 21} These opportunities help investors identify talent and provincial opportunities to both attract students and capitalize on local expertise and talent¹⁸.

Vancouver's reputation as an AI hub is growing with the large Japanese technology company, Fujitsu, selecting Vancouver as its international headquarters for AI. And, in 2019, Vancouver hosted the 33rd Conference on Neural Information Processing Systems (NeurIPS). This conference attracted 14,000 Machine Learning and AI experts to the city.

FIGURE 8. CANADA'S LARGEST AI MARKETS¹¹



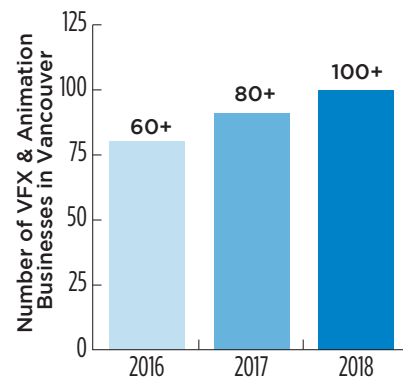
Animation & Visual Effects (VFX)

BC has over 100 animation and VFX businesses with the largest cluster in the world centred in Vancouver.¹⁴ This sub-sector has grown with approximately 80 businesses in 2016 to over 100 in 2018.¹⁴

Due to the attractive local amenities and talented workforce, the city's animation and VFX hub continues to grow. This growth adds more good-paying local jobs.

A key part of maintaining a talented workforce is access to training programs. The top three VFX schools in the field are located in Vancouver.¹⁴ These schools create and attract top talent which in turn attracts new businesses.

FIGURE 9. NUMBER OF ANIMATION & VFX COMPANIES IN BC¹⁴



Note: Animation and VFX are part of the High Tech sector. They also play an important part of the Film & TV sector and are included in the Film & TV Factsheet as well.

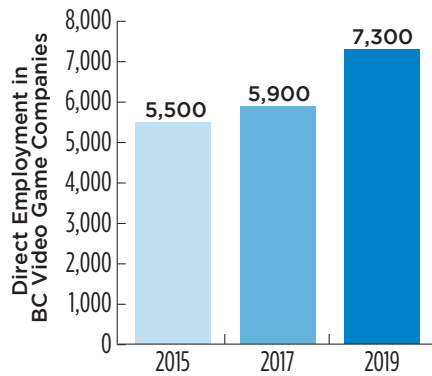
High Tech Clusters (continued)

Video Games & Interactive Media

Vancouver’s evolving video game cluster is the central hub for the BC video game industry. In 2019, BC had 116 video game companies.¹⁹ While this a decrease from the 139 BC gaming companies in 2017, direct employment increased to 7,300 in 2019 compared to 5,900 in 2017 (Figure 10).¹⁹ In 2019, BC had the highest average compensation (\$120,200) for those working at a video game company.¹⁹ BC also has the highest average age for workers in the video game industry in Canada at 36.¹⁹

Interactive media companies are related but distinct. Virtual Reality (VR) and Augmented Reality (AR) companies based in Vancouver have increased from 15 to 200 in the last two years making Vancouver one of the largest VR/AR hubs in the world.⁹

FIGURE 10. DIRECT EMPLOYMENT IN BC VIDEO GAME INDUSTRY¹⁹

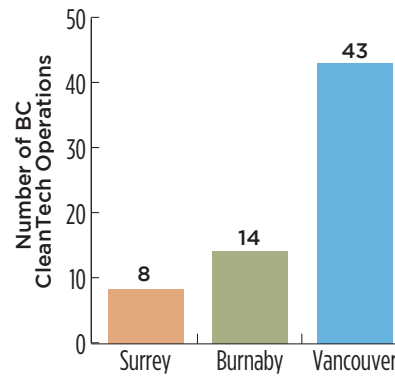


CleanTech

Clean Technology or “CleanTech” refers to developing new technologies for clean energy production, transmission, storage or use; water treatment and management; and, efficiency in energy or resource management and use.⁷

The majority of BC’s CleanTech operations take place in the Vancouver region with half of the sector’s companies located in the city of Vancouver.⁷ In 2016, 2,544 people worked in CleanTech in Vancouver.²⁰ The number of CleanTech companies in Vancouver has grown over the last six years by 35%, accompanied by a 24% increase in wages. The average annual salary per local worker in 2016 was \$84,000.⁷

FIGURE 11. LOCATION OF BC CLEANTECH MAIN OPERATIONS⁷



Data Sources

¹BC Stats, Profile of the British Columbia Technology Sector: 2017 Edition, 2017

²Dun & Bradstreet, Business Survey, 2018.

³Colliers, Greater Vancouver Office Market Report Q2 2019, 2019.

⁴The Brookfield Institute for Innovation and Entrepreneurship, The State of Canada’s Tech Sector, 2016

⁵KPMG, British Columbia Technology Report Card: Frame Growth to Scale, 2018

⁶CreativeBC, Impact Report 2017/2018, 2018

⁷KPMG, British Columbia Cleantech: 2016 Status Report, 2016

⁸CBRE Scoring Tech Talent Report, 2019

⁹VR/AR Association, Vancouver Is Now One Of The Largest VR AR Hubs In The World with over 200 Companies, 2018.

¹⁰Innovate BC, 2018/19 Annual Service Plan, 2019

¹¹Green Technology Asia Pte Ltd, The Canadian AI Ecosystem: A 2018 Profile, 2018

¹²ICTC, custom data provided, 2019

¹³Colliers, as quoted in BC Business online article: *How will tech’s appetite for office space change downtowns?*, November 27, 2017.

¹⁴CreativeBC, Impact Report 2018/2019, 2019

¹⁵BC Tech Association, 2016 TechTalentBC Report, 2016

¹⁶CBRE, 2019 TECH-30: Measuring Tech Industry Impact on North American office Markets, 2019

¹⁷First Nation Technology Council website, accessed January 2020, <https://technologycouncil.ca/about/>

¹⁸National Post, Vancouver’s AI ecosystem “exploding” — helping keep Canadians at home, accessed January 2020, <https://business.financialpost.com/entrepreneur/0501-biz-dd-vancouver>

¹⁹Entertainment Software Association of Canada, The Canadian Video Game Industry 2019, 2019

²⁰VEC, State of Vancouver’s Green Economy 2018, 2018

²¹Founder Institute, Vancouver’s 23 Best Startup Accelerators & Incubators, Accessed January 2020, <https://fi.co/insight/vancouver-s-23-best-startup-accelerators-incubators>