

# High Technology Occupations in British Columbia

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PREPARED FOR THE  
MINISTRY OF JOBS, ECONOMIC DEVELOPMENT AND  
COMPETITIVENESS  
BY BC STATS – MAY 2020

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PUBLISH DATE

May 2020

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# 1. Introduction

High Technology is an emerging economic sector for which there has been a growing demand for information. The pace of technological advancement is rapid and British Columbia's economy, like most economies, has a growing dependence on high technology. Examining the distribution of workers connected to high technology is key in further understanding the role of the high technology sector in B.C.'s economy.

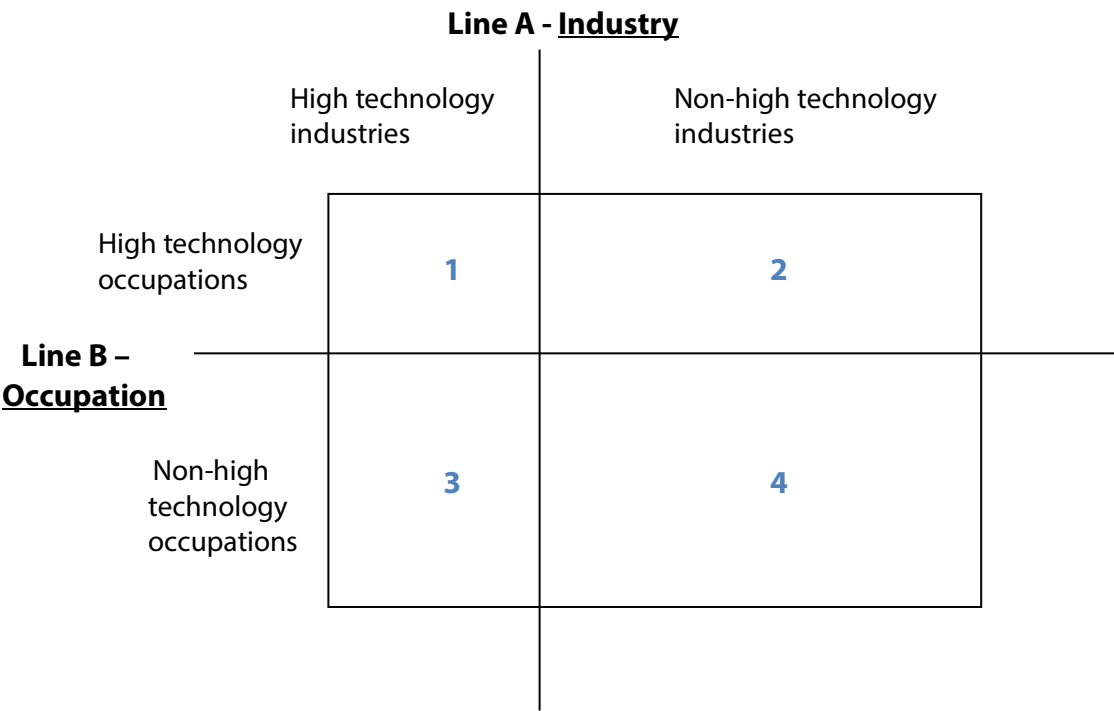
## 1.1. High Technology Occupations Defined

Since almost all jobs use technology to some extent, it is difficult to determine whether a given job should be labeled high technology or non-high technology. For the purpose of this report, two separate methods are used to divide workers into high technology and non-high technology groups. The first method involves determining if the industry a worker is in falls within the high technology sector, and the second method classifies the worker as a high technology worker based on the classification of their occupation as involving skills pertaining to high technology.

These two methods for classifying workers as high technology divide workers in the B.C. economy into four groups:

1. Workers with high technology occupations working in the high technology sector
2. Workers with high technology occupations working outside the high technology sector
3. Workers without high technology occupations working in the high technology sector
4. Workers who neither have a high technology occupation nor work in the high technology sector

FIGURE 1. HIGH TECHNOLOGY AND NON-HIGH TECHNOLOGY INDUSTRY AND OCCUPATION REPRESENTATION IN B.C.



Note: Diagram not to scale

Further information on defining the high technology sector and high technology occupations is included in **Appendix A: Sources and Methodology**.

## 2. High Technology Employment

In 2016, more than 2.3 million workers were employed in British Columbia. Nearly one in ten workers were considered to be a part of high technology either because of the industry they work in or their occupation. Not surprisingly, the high technology sector employs a high concentration of workers in high technology occupations. 41% of all high technology sector workers have high technology occupations compared to just 3% in non-high technology industries.

Although the high technology sector uses a much higher concentration of workers with high technology occupations than non-high technology sectors, there are actually more workers with high technology occupations outside of the high technology sector. This is because the number of non-high technology sectors is large enough to more than compensate for their scant use of workers with high technology occupations.

FIGURE 2: EMPLOYMENT DISTRIBUTION FOR B.C., 2016

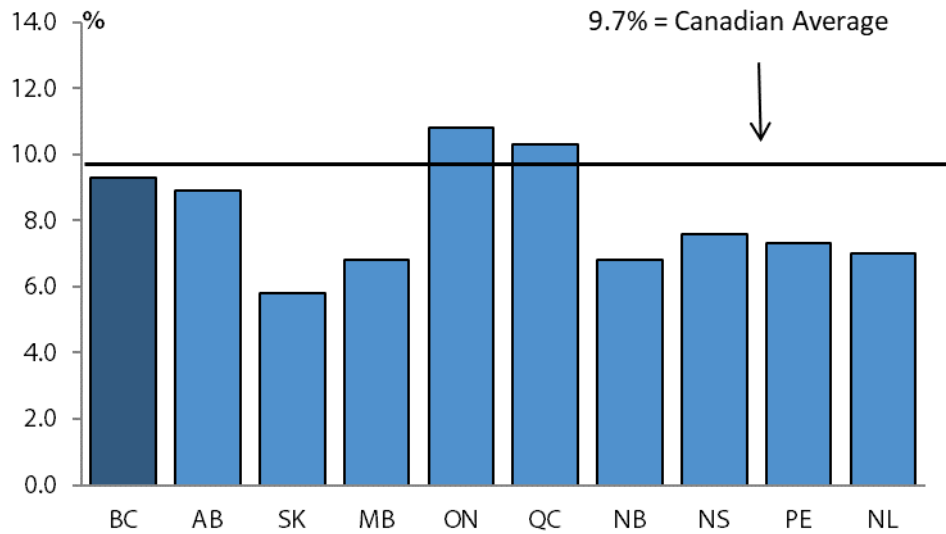
	High technology sector (144,120)	Non-high technology sector (2,161,565)
High technology occupations (130,335)	59,225	71,110
Non-high technology occupations (2,175,355)	84,900	2,090,455

Note: Diagram not to scale; figures do not add to total due to rounding

Source: BC Stats and Statistics Canada

Although B.C.'s ratio (9.3%) of high technology employment was slightly below the national average (9.7%) in 2016, it was higher than every province outside central Canada. Ontario (10.8%) and Quebec (10.3%) had the highest proportion of high technology employment to total employment, while Saskatchewan had the smallest (5.8%).

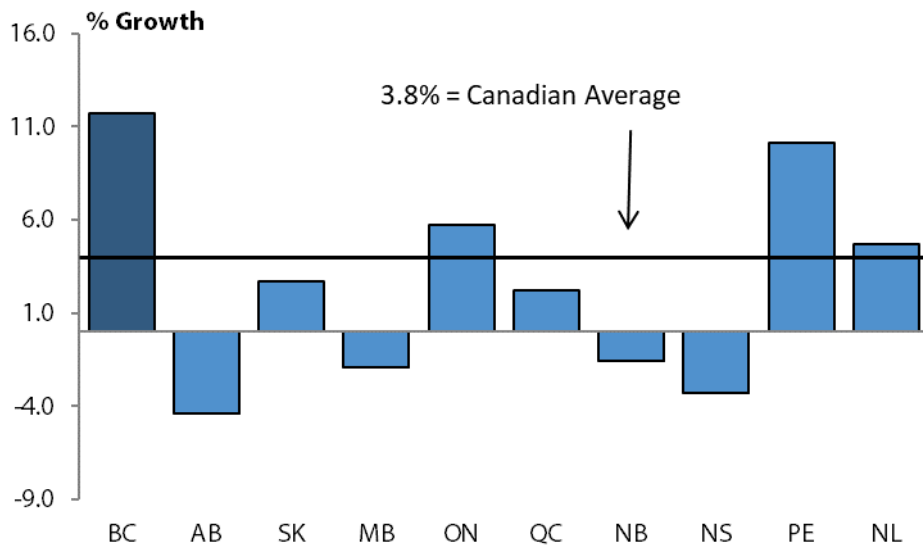
**FIGURE 3: OVERALL HIGH TECHNOLOGY EMPLOYMENT AS A PERCENT OF TOTAL EMPLOYMENT, 2016**



Source: BC Stats and Statistics Canada

Between 2011 and 2016, overall high technology employment growth was considerable. At 11.7%, British Columbia's employment growth for high technology occupations was the highest in the country and far exceeded the national average (+3.8%).<sup>1</sup>

**FIGURE 4: OVERALL HIGH TECHNOLOGY EMPLOYMENT GROWTH, 2011-2016**



Source: BC Stats and Statistics Canada

<sup>1</sup> Note that changes between 2011 and 2016 should be viewed with caution. See [Appendix A: Sources and Methodology](#).

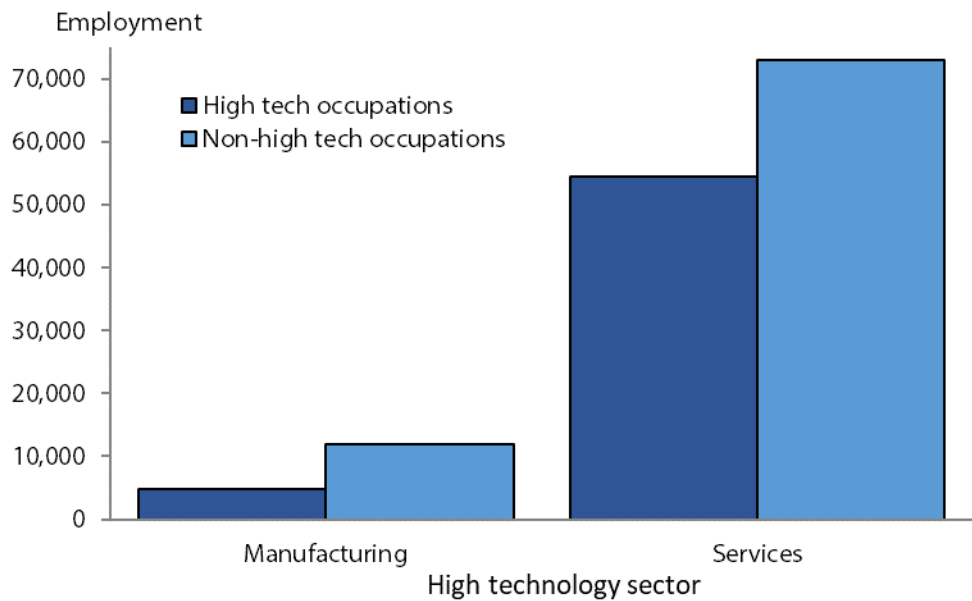
More high technology employment data, including a provincial breakdown, are available in Appendix B: Data Tables.

## 2.1. Employment in the High Technology Sector

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Within the high technology sector (Cube 1 and 3 from Figure 1), there is considerable variation in how intensively workers with high technology occupations are used. To illustrate the extent of this variation, the high technology sector is broken down into two subsectors: manufacturing and services. Figure 5 shows that the high technology service subsector has a much higher dependency on workers with high technology occupations than the high technology manufacturing subsector. Since the high technology service subsector is bigger than the high technology manufacturing subsector, this means that the majority of workers with high technology occupations work for the high technology service subsector.

FIGURE 5: EMPLOYMENT DISTRIBUTION, BY HIGH TECHNOLOGY SUBSECTORS AND MAJOR OCCUPATION CATEGORIES



Source: BC Stats and Statistics Canada

The high technology service sector contains businesses such as engineering firms where professionals offer their skilled services. These businesses consist of the professionals themselves and relatively few support workers. In contrast, high technology manufacturing



industries have production and shipping functions Manufacturing does not differ much, regardless of subsector (high technology or other) A welder who assembles satellite parts is doing basically the same thing as a welder who builds bicycles. Since high technology manufacturing companies need to do a considerable amount of work that is not high technology-oriented, they support a lower percentage of workers with high technology occupations.

Due to the limitations of available data, the extent to which the high technology manufacturing sector appears to have more non-high technology workers is skewed. There are more component industries that are not strictly high technology in the high technology manufacturing sector than there are in the high technology service sector. This partially explains the high technology manufacturing subsector's higher number of workers with non-high technology occupations. Although this problem accounts for some of the variation between the usage rates of high technology occupation workers, the difference is too large to be explained by this fact alone.

Between 2011 and 2016, the distribution of high technology workers among sectors was similar, and employment growth rates were also comparable. However, within the high technology sector itself, employment growth among high technology occupations was notably greater for manufacturing industries (+20.6%) than for services industries (+8.0%).

**FIGURE 6: EMPLOYMENT DISTRIBUTION, BY SECTOR AND MAJOR OCCUPATION CATEGORIES, 2016**

	HIGH TECHNOLOGY SECTOR			NON-HIGH TECHNOLOGY SECTOR	GRAND TOTAL
	MANUFACTURING	SERVICES	TOTAL		
HIGH TECHNOLOGY OCCUPATIONS	4,720	54,495	59,225	71,110	130,335
NON-HIGH TECHNOLOGY OCCUPATIONS	11,895	73,005	84,900	2,090,455	2,175,355
TOTAL	16,615	127,500	144,125	2,161,565	2,305,690

**FIGURE 7: EMPLOYMENT DISTRIBUTION, BY SECTOR AND MAJOR OCCUPATION CATEGORIES, 2011**

	HIGH TECHNOLOGY SECTOR			NON-HIGH TECHNOLOGY SECTOR	GRAND TOTAL
	MANUFACTURING	SERVICES	TOTAL		
HIGH TECHNOLOGY OCCUPATIONS	3,915	50,460	54,405	64,950	119,355
NON-HIGH TECHNOLOGY OCCUPATIONS	10,310	63,060	73,380	1,978,735	2,052,115
TOTAL	14,225	113,520	127,785	2,043,685	2,171,470

Source: BC Stats and Statistics Canada

## 2.1.1. High Technology Occupations

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This section is concerned with high technology occupations in the high technology sector (cube 1 from Figure 1).

Over 40% of the high technology occupation workers in the high technology sector are in computer systems design and related services. When this category is combined with the other industries in the high technology service subsector, more than 90% of high technology occupation jobs are accounted for. The remaining high technology jobs are scattered across businesses in the high technology manufacturing subsector.

The high technology service subsector consists mostly of businesses that provide skills and expertise to other businesses. For example, engineering firms work for construction companies. Consumers do not go to engineers and buy plans directly. In effect, the role of the high technology service subsector is to help other companies and businesses get their jobs done more efficiently.

**FIGURE 8: HIGH TECHNOLOGY OCCUPATION EMPLOYMENT DISTRIBUTION, BY HIGH TECHNOLOGY INDUSTRIES**

HIGH TECHNOLOGY INDUSTRY GROUPS	EMPLOYMENT, 2016	% OF TOTAL	% CHANGE 2011/2016
<b>HIGH TECHNOLOGY MANUFACTURING</b>	<b>4,720</b>	<b>8.0</b>	<b>20.6</b>
PHARMACEUTICAL AND MEDICINE MANUFACTURING	575	1.0	105.4
COMMERCIAL AND SERVICE INDUSTRY MACHINERY MANUFACTURING	140	0.2	27.3
COMPUTER AND PERIPHERAL EQUIPMENT MANUFACTURING	335	0.6	-17.3
COMMUNICATIONS EQUIPMENT MANUFACTURING	395	0.7	-3.7
AUDIO AND VIDEO EQUIPMENT MANUFACTURING	25	0.0	N/A
SEMICONDUCTOR AND OTHER ELECTRONIC COMPONENT MANUFACTURING	675	1.1	36.4
NAVIGATIONAL, MEASURING, MEDICAL AND CONTROL INSTRUMENTS MANUFACTURING	1,030	1.7	13.8
MANUFACTURING AND REPRODUCING MAGNETIC AND OPTICAL MEDIA	35	0.1	-12.5
ELECTRICAL EQUIPMENT MANUFACTURING	210	0.4	40.0
OTHER ELECTRICAL EQUIPMENT AND COMPONENT MANUFACTURING	445	0.8	-11.0
AEROSPACE PRODUCT AND PARTS MANUFACTURING	580	1.0	28.9
MEDICAL EQUIPMENT AND SUPPLIES MANUFACTURING	275	0.5	61.8
<b>HIGH TECHNOLOGY SERVICES</b>	<b>54,495</b>	<b>92.0</b>	<b>8.0</b>
SOFTWARE PUBLISHERS	3,615	6.1	-7.2

HIGH TECHNOLOGY INDUSTRY GROUPS	EMPLOYMENT, 2016	% OF TOTAL	% CHANGE 2011/2016
MOTION PICTURE AND VIDEO INDUSTRIES	1,305	2.2	108.8
PAY AND SPECIALTY TELEVISION	25	0.0	N/A
WIRED TELECOMMUNICATIONS CARRIERS	3,010	5.1	-18.6
WIRELESS TELECOMMUNICATIONS CARRIERS (EXCEPT SATELLITE)	1,035	1.7	130.0
SATELLITE TELECOMMUNICATIONS	60	0.1	-42.9
OTHER TELECOMMUNICATIONS	355	0.6	-16.5
DATA PROCESSING, HOSTING, AND RELATED SERVICES	910	1.5	48.0
ARCHITECTURAL, ENGINEERING AND RELATED SERVICES	15,510	26.2	-4.9
COMPUTER SYSTEMS DESIGN AND RELATED SERVICES	24,815	41.9	23.3
SCIENTIFIC RESEARCH AND DEVELOPMENT SERVICES	3,855	6.5	-8.5
<b>TOTAL</b>	<b>59,225</b>	<b>100.0</b>	<b>8.9</b>

Source: BC Stats and Statistics Canada

N/A = unable to calculate due to suppressed data

High technology occupations make up nearly three quarters (74%) of all occupations in the high technology sector. Computer programmers and interactive media developers comprise the largest share of high technology occupations in the high technology sector (16%), followed by information systems analysts and consultants (12%) and software engineers and designers (12%).

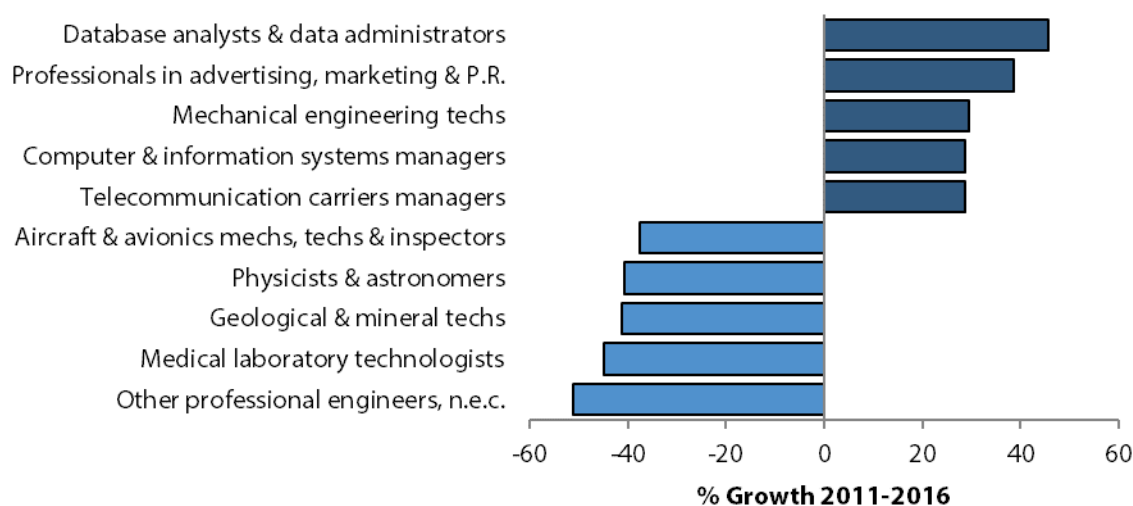
**FIGURE 9: HIGH TECHNOLOGY WORKERS IN THE HIGH-TECHNOLOGY SECTOR, BY TOP TEN OCCUPATIONS, 2016**

HIGH TECHNOLOGY OCCUPATION CATEGORY	EMPLOYMENT	% OF TOTAL
COMPUTER PROGRAMMERS AND INTERACTIVE MEDIA DEVELOPERS	9,460	16.0
INFORMATION SYSTEMS ANALYSTS AND CONSULTANTS	7,250	12.2
SOFTWARE ENGINEERS AND DESIGNERS	6,845	11.6
CIVIL ENGINEERS	4,150	7.0
COMPUTER AND INFORMATION SYSTEMS MANAGERS	3,650	6.2
ELECTRICAL AND ELECTRONICS ENGINEERS	3,005	5.1
WEB DESIGNERS AND DEVELOPERS	2,730	4.6
COMPUTER NETWORK TECHNICIANS	2,710	4.6
MECHANICAL ENGINEERS	2,455	4.1
COMPUTER ENGINEERS (EXCEPT SOFTWARE ENGINEERS AND DESIGNERS)	1,490	2.5
<b>TOTAL</b>	<b>59,225</b>	<b>73.9</b>

Source: BC Stats and Statistics Canada

From 2011 to 2016, employment across B.C.'s high technology occupations in the high technology sector expanded by 8.9%. Growth was most pronounced among database analysts and data administrators (+45.7%).

**FIGURE 10: TOP AND BOTTOM FIVE HIGH-TECH OCCUPATIONS IN TERMS OF EMPLOYMENT GROWTH IN THE HIGH TECHNOLOGY SECTOR, B.C., 2011-2016**



Source: BC Stats and Statistics Canada

## 2.1.2. Non-High Technology Occupations

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This section reflects non-high technology workers within the high technology sector (Cube 3 of Figure 1).

The high technology sector employs more workers with non-high technology occupations than workers with high technology occupations. However, there is substantial variation in the distribution of workers with non-high technology occupations across industries within the high technology sector. The industries in the high technology service subsector use a much lower concentration of workers with non-high technology occupations than industries in the high technology manufacturing subsector.

In 2016, motion picture and video industries (22%) and architectural, engineering and related services (22%) were the largest employers of non-high technology workers.

Between 2011 and 2016, employment of non-high technology workers increased notably in motion picture and video industries (+72.0%) but remained relatively unchanged for architectural, engineering and related services (-0.1%). Other notable increases in employment numbers were recorded in pharmaceutical and medicine manufacturing

(+64.3%) and computer systems design and related services (+39.3%), while a substantial decline was seen in scientific research and development services (-32.1%).

**FIGURE 11: DISTRIBUTION OF NON-HIGH TECHNOLOGY WORKERS IN THE HIGH TECHNOLOGY SECTOR**

HIGH TECHNOLOGY INDUSTRIES	EMPLOYMENT, 2016	% OF TOTAL	% CHANGE 2011/2016
<b>HIGH TECHNOLOGY MANUFACTURING</b>	<b>11,895</b>	<b>14.0</b>	<b>15.4</b>
PHARMACEUTICAL AND MEDICINE MANUFACTURING	1,750	2.1	64.3
COMMERCIAL AND SERVICE INDUSTRY MACHINERY MANUFACTURING	645	0.8	9.3
COMPUTER AND PERIPHERAL EQUIPMENT MANUFACTURING	510	0.6	-21.5
COMMUNICATIONS EQUIPMENT MANUFACTURING	560	0.7	-18.8
AUDIO AND VIDEO EQUIPMENT MANUFACTURING	115	0.1	53.3
SEMICONDUCTOR AND OTHER ELECTRONIC COMPONENT MANUFACTURING	1,130	1.3	1.8
NAVIGATIONAL, MEASURING, MEDICAL AND CONTROL INSTRUMENTS MANUFACTURING	1,695	2.0	30.4
MANUFACTURING AND REPRODUCING MAGNETIC AND OPTICAL MEDIA	100	0.1	-20.0
ELECTRICAL EQUIPMENT MANUFACTURING	620	0.7	37.8
OTHER ELECTRICAL EQUIPMENT AND COMPONENT MANUFACTURING	895	1.1	-13.1
AEROSPACE PRODUCT AND PARTS MANUFACTURING	1,840	2.2	26.9
MEDICAL EQUIPMENT AND SUPPLIES MANUFACTURING	2,035	2.4	14.6
<b>HIGH TECHNOLOGY SERVICES</b>	<b>73,005</b>	<b>86.0</b>	<b>15.8</b>
SOFTWARE PUBLISHERS	3,060	3.6	17.5
MOTION PICTURE AND VIDEO INDUSTRIES	18,625	21.9	72.0
PAY AND SPECIALTY TELEVISION	105	0.1	162.5
WIRED TELECOMMUNICATIONS CARRIERS	10,815	12.7	-3.8
WIRELESS TELECOMMUNICATIONS CARRIERS (EXCEPT SATELLITE)	1,780	2.1	-16.4
SATELLITE TELECOMMUNICATIONS	195	0.2	-20.4
OTHER TELECOMMUNICATIONS	710	0.8	14.5
DATA PROCESSING, HOSTING, AND RELATED SERVICES	985	1.2	3.1
ARCHITECTURAL, ENGINEERING AND RELATED SERVICES	18,425	21.7	-0.1
COMPUTER SYSTEMS DESIGN AND RELATED SERVICES	14,585	17.2	39.3
SCIENTIFIC RESEARCH AND DEVELOPMENT SERVICES	3,720	4.4	-32.1
<b>TOTAL</b>	<b>84,900</b>	<b>100.0</b>	<b>15.4</b>

Source: BC Stats and Statistics Canada

In 2016, other customer and information services representatives (4%), wholesale technical sales specialists (4%) and graphic designers and illustrators (4%) comprised the largest shares of non-high technology occupations in the high technology sector. Of the top ten non-tech

occupations in the high technology sector in 2016, support occupations in motion pictures, broadcasting, photography and the performing arts saw the most substantial employment boost since 2011.

**FIGURE 12: NON-HIGH TECHNOLOGY WORKERS IN THE HIGH-TECHNOLOGY SECTOR, BY TOP TEN OCCUPATIONS, 2016**

NON-HIGH TECHNOLOGY OCCUPATION CATEGORY	EMPLOYMENT	% OF TOTAL	% CHANGE 2011/2016
OTHER CUSTOMER AND INFORMATION SERVICES REPRESENTATIVES	3,755	4.4	12.3
TECHNICAL SALES SPECIALISTS - WHOLESALE TRADE	3,020	3.6	41.5
GRAPHIC DESIGNERS AND ILLUSTRATORS	2,990	3.5	86.9
ARCHITECTS	2,710	3.2	11.1
SENIOR MANAGERS - FINANCIAL, COMMUNICATIONS AND OTHER BUSINESS SERVICES	2,665	3.1	54.9
PRODUCERS, DIRECTORS, CHOREOGRAPHERS AND RELATED OCCUPATIONS	2,510	3.0	18.4
OTHER TECHNICAL AND CO-ORDINATING OCCS IN MOTION PICTURES, BROADCASTING AND THE PERFORMING ARTS	2,360	2.8	128.0
USER SUPPORT TECHNICIANS	2,345	2.8	-10.8
SUPPORT OCCUPATIONS IN MOTION PICTURES, BROADCASTING, PHOTOGRAPHY AND THE PERFORMING ARTS	2,330	2.7	157.5
ADMINISTRATIVE OFFICERS	2,120	2.5	8.2
<b>TOTAL</b>	<b>84,900</b>	<b>31.6</b>	<b>15.7</b>

Source: BC Stats and Statistics Canada

More high technology sector employment data are available in [Appendix B: Data Tables](#).

## 2.2. Employment Outside the High Technology Sector

### 2.2.1. High Technology Occupations

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This section, as illustrated in Block 2 of Figure 1, represents workers with high technology occupations outside of the high technology sector.

Sixty percent of workers with high technology occupations work in industries outside of the high technology sector. Although the number of workers with high technology occupations is higher outside of the high technology sector, their percentage of the workforce is much smaller. The reason there are more workers with high technology occupations outside of the high technology sector is simply because the rest of the economy is so much bigger that even its scant use of high technology workers adds up to more than the total in the high technology sector.

Figure 13 shows that the largest industry employers of high technology workers in the non-high technology sector are management, scientific and technical consulting services (7%) and hospitals (6%). Universities and all three levels of government (federal, provincial, and municipal) are also in the top ten. Governments need technology specialists to help deliver their services and carry out research.

**FIGURE 13: DISTRIBUTION OF HIGH TECHNOLOGY WORKERS ACROSS THE NON-HIGH TECHNOLOGY SECTOR, TOP TEN INDUSTRIES, 2016**

NON-HIGH TECHNOLOGY INDUSTRIES	EMPLOYMENT	% OF TOTAL
MANAGEMENT, SCIENTIFIC AND TECHNICAL CONSULTING SERVICES	5,180	7.3
HOSPITALS	3,895	5.5
UNIVERSITIES	3,020	4.2
LOCAL, MUNICIPAL AND REGIONAL PUBLIC ADMINISTRATION	2,995	4.2
OTHER FEDERAL GOVERNMENT PUBLIC ADMINISTRATION	2,990	4.2
PROVINCIAL AND TERRITORIAL PUBLIC ADMINISTRATION	2,970	4.2
ELECTRIC POWER GENERATION, TRANSMISSION AND	2,340	3.3

NON-HIGH TECHNOLOGY INDUSTRIES	EMPLOYMENT	% OF TOTAL
DISTRIBUTION		
ADVERTISING, PUBLIC RELATIONS, AND RELATED SERVICES	1,835	2.6
MEDICAL AND DIAGNOSTIC LABORATORIES	1,720	2.4
DEPOSITORY CREDIT INTERMEDIATION	1,555	2.2
<b>TOTAL NON-HIGH TECHNOLOGY INDUSTRIES</b>	<b>71,110</b>	<b>40.1</b>

Source: BC Stats and Statistics Canada

Many of the most prevalent high technology jobs in the non-high technology sector are focused on implementing technology as opposed to developing it. Figure 14 shows that professional occupations in advertising, marketing and public relations is the top high technology occupation group outside the high technology sector. The next three biggest occupation groups include workers who work with computers and information systems.

**FIGURE 14: EMPLOYMENT HIGH TECHNOLOGY WORKERS BY TOP TEN OCCUPATIONS IN THE NON-HIGH TECHNOLOGY SECTOR**

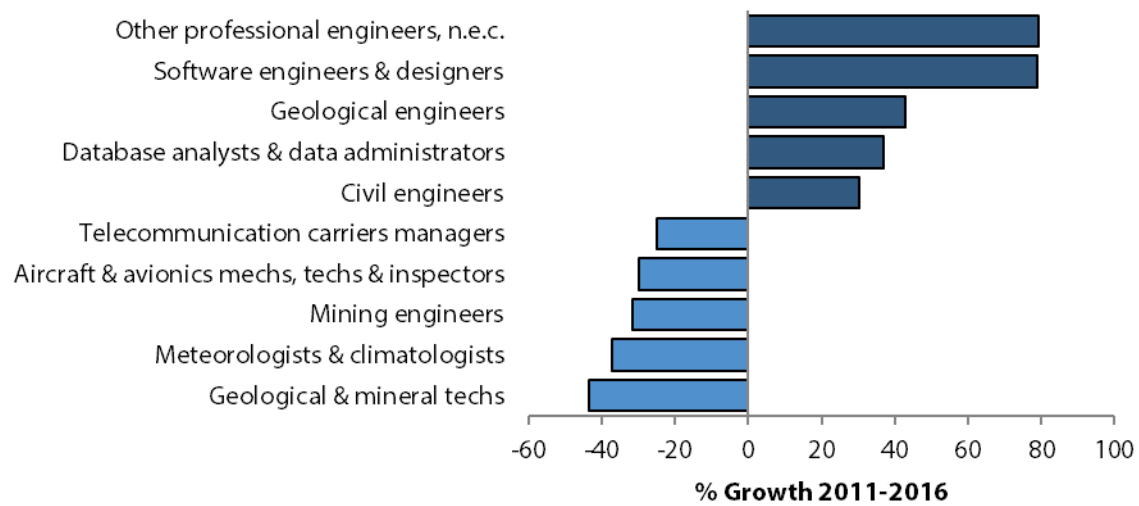
HIGH TECHNOLOGY OCCUPATIONS	EMPLOYMENT	% OF TOTAL
PROFESSIONAL OCCUPATIONS IN ADVERTISING, MARKETING AND PUBLIC RELATIONS	10,175	14.3
INFORMATION SYSTEMS ANALYSTS AND CONSULTANTS	8,435	11.9
COMPUTER NETWORK TECHNICIANS	4,275	6.0
COMPUTER AND INFORMATION SYSTEMS MANAGERS	3,825	5.4
CIVIL ENGINEERS	3,445	4.8
COMPUTER PROGRAMMERS AND INTERACTIVE MEDIA DEVELOPERS	3,380	4.8
ELECTRICAL AND ELECTRONICS ENGINEERING TECHNOLOGISTS AND TECHNICIANS	3,355	4.7
BIOLOGISTS AND RELATED SCIENTISTS	3,020	4.2
MECHANICAL ENGINEERS	2,760	3.9
MEDICAL LABORATORY TECHNOLOGISTS	2,655	3.7
<b>TOTAL</b>	<b>71,110</b>	<b>63.7</b>

Source: BC Stats and Statistics Canada

Employment across B.C.'s high technology occupations outside the high technology sector grew by 9.5% between 2011 and 2016. Growth was most pronounced among the "other" professional engineers (+79.0%) and software engineers and designers (+78.7%). Conversely, the largest decline was seen among geological and mineral technologists and technicians (-43.5%).



**FIGURE 15: TOP AND BOTTOM FIVE HIGH-TECHNOLOGY OCCUPATIONS IN TERMS OF EMPLOYMENT GROWTH OUTSIDE THE HIGH TECHNOLOGY SECTOR, B.C., 2011-2016**



Source: BC Stats and Statistics Canada

More non-high technology sector employment data are available in Appendix B: Data Tables.

### 3. Conclusion

British Columbia's high technology workers have a significant presence in the province's economy. In 2016, nearly one-in-ten of the province's workers were part of high technology either because of the industry they work in or their occupation. Furthermore, these numbers do not include present-day occupations that involve some use of high technology. Although these numbers are not available, it is possible that even more occupations now use technology to some degree, further demonstrating the importance of technology throughout sectors and occupations.

Although the high technology sector has a higher concentration of workers with high technology occupations than non-high technology sectors, there are actually more workers with high technology occupations outside of the high technology sector. In fact, sixty percent of workers with high technology occupations work in industries outside the high technology sector.

In recent years, employment among high technology occupations has seen considerable growth in both the high technology and non-high technology sectors. Between 2011 and 2016, B.C.'s overall high technology employment growth was 11.7%, the highest in the country and far exceeding the national average (+3.8%). Employment across B.C.'s high technology occupations outside the high technology sector grew by 9.5% between 2011 and 2016. The high technology sector recorded a comparable 8.9% growth in employment of high technology occupations over the same period.

While it is generally acknowledged that the high technology sector is important to B.C.'s economic growth, the types of occupations found in the sector as well as occupation structure is less known. By establishing a definition of high technology occupations, it becomes more feasible to monitor the impacts high technology has on B.C.'s economy.

## 4. Appendix A: Sources and Methodology

### 4.1. Defining High Technology Occupations

There is currently no widely-accepted definition for high technology occupations. The definition developed for the purpose of this report is based on commonalities among a number of existing definitions. BC Stats has defined high technology occupations in terms of the National Occupation Classification (NOC) system.

Occupations that were selected require a scientific knowledge base to perform their main duties, are unrelated to primary industries, and involve the use of high technology equipment. Simultaneously, the selection process is guided by our understanding of what is generally accepted as being high technology. For example, while their jobs require a science knowledge base, medical doctors are not considered to be high technology because their primary duties are associated with treating people.

The definition of high technology occupations used here will inevitably include some low-technology jobs. Conversely, some non-high technology occupations will include high technology jobs. These are unavoidable uncertainties that are a part of any high technology study using an existing occupational coding structure. An advantage to our methodology is that it can accommodate changes to our basic understanding of what high technology is. The term high technology implies technology that is more advanced than existing technology. Since technology is changing, being adopted and then discarded so quickly, what is considered advanced technology today may not be considered advanced technology tomorrow. Our definition based on NOC can easily be adapted to incorporate updated definitions of high technology.

The following table represents the results of the above selection process, and the definition of high technology occupations used in this study.

NOC	OCCUPATION DESCRIPTION
0131	Telecommunication carriers managers
0211	Engineering managers
0212	Architecture and science managers
0213	Computer and information systems managers
1123	Professional occupations in advertising, marketing and public relations
2111	Physicists and Astronomers
2112	Chemists
2113	Geoscientists and oceanographers
2114	Meteorologists and climatologists
2121	Biologists and Related Scientists
2131	Civil engineers
2132	Mechanical engineers
2133	Electrical and Electronics Engineers
2134	Chemical Engineers
2141	Industrial and manufacturing engineers
2142	Metallurgical and materials engineers
2143	Mining Engineers
2144	Geological Engineers
2145	Petroleum Engineers
2146	Aerospace Engineers
2147	Computer Engineers (Except Software Engineers and Designers)
2148	Other professional engineers, n.e.c.
2171	Information Systems Analysts and Consultants
2172	Database Analysts and Data Administrators
2173	Software Engineers and Designers
2174	Computer Programmers and Interactive Media Developers
2175	Web Designers and Developers
2211	Chemical Technologists and Technicians
2212	Geological and Mineral Technologists and Technicians
2221	Biological Technologists and Technicians
2231	Civil engineering technologists and technicians
2232	Mechanical engineering technologists and technicians
2233	Industrial engineering and manufacturing technologists and technicians
2241	Electrical and Electronics Engineering Technologists and Technicians
2244	Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors
2255	Technical occupations in geomatics and meteorology
2281	Computer network technicians
3211	Medical Laboratory Technologists
3215	Medical Radiation Technologists

### 4.1.1. National Occupation Classification (NOC) System

The National Occupation Classification system is a three-tiered nested system of occupational groups. Within this structure, an occupation is defined as a collection of jobs grouped under one common title due to the similarities in the work performed. Each occupational group is therefore unique, yet the groups can be related to each other by similarities in the kind of work performed in each group. A job involves all the tasks a worker carries out to complete his or her duties. NOC captures the range of occupational activity in Canada systematically using two criteria: skill level and skill type.

Skill level is the amount and type of education and training required to enter an occupation and perform the duties of the occupation. Experience, complexity and responsibilities typical to an occupation are considered and compared to other occupations to determine the skill level of an occupation. There are four skill levels in NOC reflecting four commonly accepted entry routes for employment. They range from skills acquired from on-the-job training to a university degree.

Skill type is broadly defined as the type of work performed. NOC identifies 10 broad occupational groups based on skill types. These have been listed above under the heading of “Defining high technology occupations”.

The highest level within NOC contains two-digit codes. The first digit indicates the skill type category; the second digit indicates the skill level category. Each major group with two-digit codes is composed of one or more minor groups with three-digit codes. Minor groups are in turn composed of unit groups with four-digit codes. The first three digits indicate the higher level groups to which the unit group belongs. Reporting in this study is by four-digit codes.

## 4.2. Defining the High Technology Sector

BC Stats has developed a definition of the high technology sector in terms of the North American Industry Classification System (NAICS). The table below describes the NAICS-based definition of the High Technology Sector in B.C. This is the most recent definition developed to describe B.C.’s high technology sector. More detail on the industries and why they are included can be found in the Profile of the British Columbia High Technology Sector, which is available at: [www.bcstats.gov.bc.ca](http://www.bcstats.gov.bc.ca)

NAICS	INDUSTRY DESCRIPTION
Manufacturing Industries	
325189	Other Basic Inorganic Chemicals
325410	Pharmaceutical and Medicine
333310	Commercial and Service Industry
334110	Computer and Peripheral
334210	Telephone Apparatus
334220	Radio, Television Broadcasting & Wireless Communications Equipment
334290	Other Communications Equipment
334310	Audio and Video Equipment
334410	Semiconductor and Other Electronic Components
334511	Navigational and Guidance Instruments
334512	Measuring, Medical and Controlling Devices
334610	Manufacturing and Reproducing Magnetic and Optical Media
335315	Switchgear and Switchboard, and Relay and Industrial Control Apparatus
335920	Communication and Energy Wire and Cable
335990	All Other Electrical Equipment and Component
336410	Aerospace Products and Parts
339110	Medical Equipment and Supplies
Service Industries	
511211	Software Publishers (Except Video Game Publishers)
511212	Video Game Publishers
512110	Motion Picture and Video Production
512190	Post-Production and Other Motion Picture and Video Industries
515210	Pay and Specialty Television
517310	Wired and Wireless Telecommunications Carriers (Except Satellite)
517410	Satellite Telecommunications
517911	Telecommunications Resellers
517919	All Other Telecommunications
518210	Data Processing, Hosting and Related Services
519130	Internet Broadcasting, and Web Search Portals
541330	Engineering
541360	Geophysical Surveying and Mapping Services
541370	Surveying and Mapping (Except Geophysical) Services
541380	Testing Laboratories
541514	Computer Systems Design and Related (Except Video Game Design and Development)
541515	Video Game Design and Development Services
541620	Environmental Consulting
541690	Other Scientific and Technical Consulting
541710	Research and Development in Physical, Engineering and Life Sciences
541720	Research and Development in the Social Sciences and Humanities

### **4.2.1. North American Industry Classification System (NAICS)**

The source for the industry-based definition of the high technology sector data is the North American Industry Classification System. NAICS is a system of classifying industries developed in cooperation between Statistics Canada, the United States Office of Management and Budget and the Instituto Nacional de Estadística, Geografía e Informática of Mexico.

### **4.2.2. Census and National Household Survey**

2016 data for this study are from Statistics Canada's 2016 Census. Because detailed census data collection did not occur in 2011, the analysis will use data from the 2011 National Household Survey (NHS). Note that the NHS was a voluntary survey; therefore, it may be subject to respondent bias, such that changes between the two periods should be viewed with caution.

Tables generated for analyses in this study are based on an industry-by-occupation cross-tabulation of employment. Employment is a count of those who work for pay or are self-employed.

Because Statistics Canada adheres to strict rules of confidentiality, data for this study has been subjected to a rounding process. In cases where few individuals (1 to 9) are found in a particular occupation and industry, their employment count is rounded up to 10, or down to 0. All levels of data are tabulated first, then rounded at that level before aggregation of data to broader levels. Consequently, data for a particular occupation or industry group may not sum up across the different levels of occupation or industry classification.

## 5. Appendix B: Data Tables

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**TABLE 1. HIGH TECHNOLOGY EMPLOYMENT DISTRIBUTION BY OCCUPATION CATEGORIES AND SECTOR, PROVINCES, 2011 AND 2016**

	2011			2016		
PROVINCE	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL
<b>British Columbia</b>						
High Technology Occupations	54,405	64,950	119,355	59,225	71,110	130,335
Non-High Technology Occupations	73,380	1,978,735	2,052,115	84,900	2,090,455	2,175,355
<b>Total</b>	<b>127,785</b>	<b>2,043,685</b>	<b>2,171,470</b>	<b>144,120</b>	<b>2,161,565</b>	<b>2,305,690</b>
<b>Alberta</b>						
High Technology Occupations	50,675	82,650	133,325	44,180	85,695	129,875
Non-High Technology Occupations	60,910	1,798,985	1,859,895	55,820	1,910,410	1,966,235
<b>Total</b>	<b>111,590</b>	<b>1,881,635</b>	<b>1,993,220</b>	<b>100,000</b>	<b>1,996,105</b>	<b>2,096,105</b>
<b>Saskatchewan</b>						
High Technology Occupations	7,200	12,840	20,035	6,985	14,695	21,680
Non-High Technology Occupations	10,910	498,145	509,060	10,105	512,310	522,410
<b>Total</b>	<b>18,110</b>	<b>510,985</b>	<b>529,100</b>	<b>17,085</b>	<b>527,005</b>	<b>544,095</b>
<b>Manitoba</b>						
High Technology Occupations	8,205	18,125	26,335	7,920	18,560	26,480
Non-High Technology Occupations	16,190	554,765	570,955	15,245	575,740	590,985
<b>Total</b>	<b>24,395</b>	<b>572,890</b>	<b>597,285</b>	<b>23,165</b>	<b>594,305</b>	<b>617,465</b>
<b>Ontario</b>						
High Technology Occupations	172,915	268,805	441,720	186,415	284,670	471,085
Non-High Technology Occupations	231,340	5,623,945	5,855,280	240,400	5,900,665	6,141,065
<b>Total</b>	<b>404,255</b>	<b>5,892,750</b>	<b>6,297,005</b>	<b>426,815</b>	<b>6,185,335</b>	<b>6,612,150</b>
<b>Quebec</b>						
High Technology Occupations	102,835	135,450	238,285	104,570	144,545	249,115
Non-High Technology Occupations	161,205	3,480,940	3,642,140	159,080	3,541,135	3,700,215
<b>Total</b>	<b>264,035</b>	<b>3,616,385</b>	<b>3,880,420</b>	<b>263,650</b>	<b>3,685,680</b>	<b>3,949,330</b>
<b>New Brunswick</b>						
High Technology Occupations	4,990	10,835	15,825	5,305	10,725	16,025
Non-High Technology Occupations	7,450	328,660	336,115	6,870	316,155	323,020
<b>Total</b>	<b>12,440</b>	<b>339,500</b>	<b>351,935</b>	<b>12,165</b>	<b>326,880</b>	<b>339,045</b>

PROVINCE	2011			2016		
	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL
<b>Nova Scotia</b>						
High Technology Occupations	7,970	13,670	21,635	8,195	13,245	21,440
Non-High Technology Occupations	11,955	402,305	414,255	11,030	394,840	405,870
<b>Total</b>	<b>19,925</b>	<b>415,970</b>	<b>435,895</b>	<b>19,225</b>	<b>408,085</b>	<b>427,310</b>
<b>Prince Edward Island</b>						
High Technology Occupations	1,115	1,635	2,750	1,260	1,875	3,130
Non-High Technology Occupations	1,750	64,130	65,885	1,825	63,160	64,985
<b>Total</b>	<b>2,865</b>	<b>65,765</b>	<b>68,635</b>	<b>3,080</b>	<b>65,035</b>	<b>68,115</b>
<b>Newfoundland and Labrador</b>						
High Technology Occupations	2,905	7,225	10,135	3,165	7,775	10,945
Non-High Technology Occupations	4,365	204,130	208,495	4,230	201,530	205,760
<b>Total</b>	<b>7,275</b>	<b>211,355</b>	<b>218,630</b>	<b>7,395</b>	<b>209,310</b>	<b>216,705</b>
<b>Canada</b>						
High Technology Occupations	413,680	618,070	1,031,755	427,665	654,840	1,082,505
Non-High Technology Occupations	580,450	14,982,830	15,563,280	590,400	15,557,135	16,147,530
<b>Total</b>	<b>994,130</b>	<b>15,600,905</b>	<b>16,595,035</b>	<b>1,018,060</b>	<b>16,211,975</b>	<b>17,230,035</b>

Source: BC Stats and Statistics Canada  
Numbers may not add due to rounding  
Note: Canadian totals include the Territories

**TABLE 2. HIGH TECHNOLOGY EMPLOYMENT GROWTH BY OCCUPATION CATEGORIES AND SECTOR, PROVINCES, 2011 TO 2016**

PROVINCE	% CHANGE 2011/2016		
	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL
<b>British Columbia</b>			
High Technology Occupations	8.9	9.5	9.2
Non-High Technology Occupations	15.7	5.6	6.0
<b>Total</b>	<b>12.8</b>	<b>5.8</b>	<b>6.2</b>
<b>Alberta</b>			
High Technology Occupations	-12.8	3.7	-2.6
Non-High Technology Occupations	-8.4	6.2	5.7
<b>Total</b>	<b>-10.4</b>	<b>6.1</b>	<b>5.2</b>

PROVINCE	% CHANGE 2011/2016		
	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL
<b>Saskatchewan</b>			
High Technology Occupations	-3.0	14.4	8.2
Non-High Technology Occupations	-7.4	2.8	2.6
<b>Total</b>	<b>-5.7</b>	<b>3.1</b>	<b>2.8</b>
<b>Manitoba</b>			
High Technology Occupations	-3.5	2.4	0.6
Non-High Technology Occupations	-5.8	3.8	3.5
<b>Total</b>	<b>-5.0</b>	<b>3.7</b>	<b>3.4</b>
<b>Ontario</b>			
High Technology Occupations	7.8	5.9	6.6
Non-High Technology Occupations	3.9	4.9	4.9
<b>Total</b>	<b>5.6</b>	<b>5.0</b>	<b>5.0</b>
<b>Quebec</b>			
High Technology Occupations	1.7	6.7	4.5
Non-High Technology Occupations	-1.3	1.7	1.6
<b>Total</b>	<b>-0.1</b>	<b>1.9</b>	<b>1.8</b>
<b>New Brunswick</b>			
High Technology Occupations	6.3	-1.0	1.3
Non-High Technology Occupations	-7.8	-3.8	-3.9
<b>Total</b>	<b>-2.2</b>	<b>-3.7</b>	<b>-3.7</b>
<b>Nova Scotia</b>			
High Technology Occupations	2.8	-3.1	-0.9
Non-High Technology Occupations	-7.7	-1.9	-2.0
<b>Total</b>	<b>-3.5</b>	<b>-1.9</b>	<b>-2.0</b>
<b>Prince Edward Island</b>			
High Technology Occupations	13.0	14.7	13.8
Non-High Technology Occupations	4.3	-1.5	-1.4
<b>Total</b>	<b>7.5</b>	<b>-1.1</b>	<b>-0.8</b>
<b>Newfoundland and Labrador</b>			
High Technology Occupations	9.0	7.6	8.0
Non-High Technology Occupations	-3.1	-1.3	-1.3
<b>Total</b>	<b>1.6</b>	<b>-1.0</b>	<b>-0.9</b>
<b>Canada</b>			
High Technology Occupations	3.4	5.9	4.9
Non-High Technology Occupations	1.7	3.8	3.8
<b>Total</b>	<b>2.4</b>	<b>3.9</b>	<b>3.8</b>

Source: BC Stats and Statistics Canada

Note: Canadian totals include the Territories

**TABLE 3. EMPLOYMENT DISTRIBUTION IN THE HIGH TECHNOLOGY SECTOR, BY INDUSTRY AND MAJOR OCCUPATION CATEGORY, B.C., 2011 AND 2016**

	OCCUPATION CATEGORY, 2011			OCCUPATION CATEGORY, 2016		
High Technology Industries	High Technology	Non-High Technology	Total	High Technology	Non-High Technology	Total
<b>High Technology Manufacturing</b>	<b>3,915</b>	<b>10,310</b>	<b>12,305</b>	<b>4,720</b>	<b>11,895</b>	<b>14,295</b>
Pharmaceutical and medicine manufacturing	280	1,065	1,340	575	1,750	2,315
Commercial and service industry machinery manufacturing	110	590	695	140	645	790
Computer and peripheral equipment manufacturing	405	650	1,060	335	510	845
Communications equipment manufacturing	410	690	1,100	395	560	955
Audio and video equipment manufacturing	N/A	75	100	25	115	145
Semiconductor and other electronic component manufacturing	495	1,110	1,610	675	1,130	1,800
Navigational, measuring, medical and control instruments manufacturing	905	1,300	2,205	1,030	1,695	2,725
Manufacturing and reproducing magnetic and optical media	40	125	165	35	100	135
Electrical equipment manufacturing	150	450	605	210	620	830
Other electrical equipment and component manufacturing	500	1,030	1,525	445	895	1,340
Aerospace product and parts manufacturing	450	1,450	1,900	580	1,840	2,415
Medical equipment and supplies manufacturing	170	1,775	1,945	275	2,035	2,315
<b>High Technology Services</b>	<b>50,460</b>	<b>63,060</b>	<b>113,550</b>	<b>54,495</b>	<b>73,005</b>	<b>127,520</b>
Software publishers	3,895	2,605	6,505	3,615	3,060	6,675
Motion picture and video industries	625	10,830	11,455	1,305	18,625	19,930
Pay and specialty television	N/A	40	50	25	105	130
Wired telecommunications carriers	3,700	11,240	14,940	3,010	10,815	13,825
Wireless telecommunications carriers (except satellite)	450	2,130	2,585	1,035	1,780	2,815
Satellite telecommunications	105	245	350	60	195	260
Other telecommunications	425	620	1,045	355	710	1,070
Data processing, hosting, and related services	615	955	1,575	910	985	1,895
Architectural, engineering and related services	16,305	18,450	34,760	15,510	18,425	33,940
Computer systems design and related services	20,125	10,470	30,595	24,815	14,585	39,400
Scientific research and development services	4,215	5,475	9,690	3,855	3,720	7,580
<b>Total High Technology</b>	<b>54,405</b>	<b>73,380</b>	<b>127,785</b>	<b>59,225</b>	<b>84,900</b>	<b>144,120</b>

Source: BC Stats and Statistics Canada  
Numbers may not add due to rounding  
N/A = suppressed data

**TABLE 4. EMPLOYMENT DISTRIBUTION BY HIGH TECHNOLOGY OCCUPATION CATEGORIES AND SECTOR, B.C.**

HIGH TECHNOLOGY OCCUPATIONS	2011			2016		
	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL
Telecommunication carriers managers	1,050	140	1,190	1,435	105	1,540
Engineering managers	960	1,090	2,045	1,130	1,210	2,335
Architecture and science managers	390	580	970	485	575	1,070
Computer and information systems managers	2,620	3,185	5,805	3,650	3,825	7,475
Professional occupations in advertising, marketing and public relations	865	8,685	9,545	1,275	10,175	11,445
Physicists and astronomers	270	215	485	160	245	405
Chemists	635	655	1,285	570	585	1,155
Geoscientists and oceanographers	705	1,225	1,935	550	1,185	1,735
Meteorologists and climatologists	N/A	215	215	20	135	160
Biologists and related scientists	810	2,725	3,530	885	3,020	3,915
Civil engineers	4,455	2,645	7,100	4,150	3,445	7,595
Mechanical engineers	2,320	2,270	4,590	2,455	2,760	5,210
Electrical and electronics engineers	2,720	1,945	4,665	3,005	2,265	5,275
Chemical engineers	445	495	940	405	555	960
Industrial and manufacturing engineers	515	555	1,070	505	590	1,095
Metallurgical and materials engineers	110	165	265	140	200	340
Mining engineers	250	650	910	220	445	670
Geological engineers	565	140	695	695	200	895
Petroleum engineers	65	150	215	60	135	200
Aerospace engineers	110	135	240	135	145	280
Computer engineers (except software engineers and designers)	1,805	825	2,630	1,490	805	2,295
Other professional engineers, n.e.c.	745	310	1,055	365	555	915
Information systems analysts and consultants	6,575	6,925	13,500	7,250	8,435	15,680
Database analysts and data administrators	495	1,005	1,500	805	1,375	2,185
Software engineers and designers	5,305	1,270	6,580	6,845	2,270	9,115
Computer programmers and interactive media developers	7,970	3,675	11,645	9,460	3,380	12,840
Web designers and developers	2,355	1,505	3,855	2,730	1,655	4,385
Chemical technologists and technicians	1,135	1,660	2,795	800	1,325	2,120

HIGH TECHNOLOGY OCCUPATIONS	2011			2016		
	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL
Geological and mineral technologists and technicians	485	955	1,445	285	540	825
Biological technologists and technicians	395	1,265	1,655	365	1,160	1,520
Civil engineering technologists and technicians	1,390	1,090	2,485	1,020	1,385	2,405
Mechanical engineering technologists and technicians	425	1,440	1,865	625	1,125	1,755
Industrial engineering and manufacturing technologists and technicians	495	875	1,365	525	990	1,520
Electrical and electronics engineering technologists and technicians	1,385	3,120	4,510	1,345	3,355	4,700
Aircraft instrument, electrical and avionics mechanics, technicians and inspectors	160	950	1,110	100	665	765
Technical occupations in geomatics and meteorology	505	975	1,475	460	1,110	1,565
Computer network technicians	2,765	4,540	7,305	2,710	4,275	6,990
Medical laboratory technologists	145	2,595	2,745	80	2,655	2,740
Medical radiation technologists	15	2,135	2,150	15	2,245	2,260
<b>Total High Technology Occupations</b>	<b>54,405</b>	<b>64,950</b>	<b>119,355</b>	<b>59,225</b>	<b>71,110</b>	<b>130,335</b>

Source: BC Stats and Statistics Canada  
Numbers may not add due to rounding  
N/A = suppressed data

**TABLE 5. EMPLOYMENT GROWTH RATES BY HIGH TECHNOLOGY OCCUPATION CATEGORIES AND SECTOR, B.C.**

HIGH TECHNOLOGY OCCUPATIONS	% CHANGE 2011/ 2016		
	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL
Telecommunication carriers managers	36.7	-25.0	29.4
Engineering managers	17.7	11.0	14.2
Architecture and science managers	24.4	-0.9	10.3
Computer and information systems managers	39.3	20.1	28.8
Professional occupations in advertising, marketing and public relations	47.4	17.2	19.9
Physicists and astronomers	-40.7	14.0	-16.5
Chemists	-10.2	-10.7	-10.1
Geoscientists and oceanographers	-22.0	-3.3	-10.3
Meteorologists and climatologists	N/A	-37.2	-25.6
Biologists and related scientists	9.3	10.8	10.9
Civil engineers	-6.8	30.2	7.0

HIGH TECHNOLOGY OCCUPATIONS	% CHANGE 2011/ 2016		
	HIGH TECHNOLOGY SECTOR	NON-HIGH TECHNOLOGY SECTOR	TOTAL
Mechanical engineers	5.8	21.6	13.5
Electrical and electronics engineers	10.5	16.5	13.1
Chemical engineers	-9.0	12.1	2.1
Industrial and manufacturing engineers	-1.9	6.3	2.3
Metallurgical and materials engineers	27.3	21.2	28.3
Mining engineers	-12.0	-31.5	-26.4
Geological engineers	23.0	42.9	28.8
Petroleum engineers	-7.7	-10.0	-7.0
Aerospace engineers	22.7	7.4	16.7
Computer engineers (except software engineers and designers)	-17.5	-2.4	-12.7
Other professional engineers, n.e.c.	-51.0	79.0	-13.3
Information systems analysts and consultants	10.3	21.8	16.1
Database analysts and data administrators	62.6	36.8	45.7
Software engineers and designers	29.0	78.7	38.5
Computer programmers and interactive media developers	18.7	-8.0	10.3
Web designers and developers	15.9	10.0	13.7
Chemical technologists and technicians	-29.5	-20.2	-24.2
Geological and mineral technologists and technicians	-41.2	-43.5	-42.9
Biological technologists and technicians	-7.6	-8.3	-8.2
Civil engineering technologists and technicians	-26.6	27.1	-3.2
Mechanical engineering technologists and technicians	47.1	-21.9	-5.9
Industrial engineering and manufacturing technologists and technicians	6.1	13.1	11.4
Electrical and electronics engineering technologists and technicians	-2.9	7.5	4.2
Aircraft instrument, electrical and avionics mechanics, technicians and inspectors	-37.5	-30.0	-31.1
Technical occupations in geomatics and meteorology	-8.9	13.8	6.1
Computer network technicians	-2.0	-5.8	-4.3
Medical laboratory technologists	-44.8	2.3	-0.2
Medical radiation technologists	0.0	5.2	5.1
<b>Total High Technology Occupations</b>	<b>8.9</b>	<b>9.5</b>	<b>9.2</b>

Source: BC Stats and Statistics Canada

Numbers may not add due to rounding

N/A = unable to calculate due to suppressed data

**TABLE 6. EMPLOYMENT IN THE HIGH TECHNOLOGY SECTOR BY TOP TEN NON-HIGH TECHNOLOGY OCCUPATIONS**

2016		
Non-High Technology Occupations	Employment	% of Total
Other customer and information services representatives	3,755	4.4
Technical sales specialists - wholesale trade	3,020	3.6
Graphic designers and illustrators	2,990	3.5
Architects	2,710	3.2
Senior managers - financial, communications and other business services	2,665	3.1
Producers, directors, choreographers and related occupations	2,510	3.0
Other technical and co-ordinating occs in motion pictures, broadcasting and the performing arts	2,360	2.8
User support technicians	2,345	2.8
Support occupations in motion pictures, broadcasting, photography and the performing arts	2,330	2.7
Administrative officers	2,120	2.5
<b>Total Non-High Technology Occupations</b>	<b>84,900</b>	<b>31.6</b>
2011		
Non-High Technology Occupations	Employment	% of Total
Other customer and information services representatives	3,345	4.6
User support technicians	2,630	3.6
Architects	2,440	3.3
Telecommunications installation and repair workers	2,190	3.0
Drafting technologists and technicians	2,180	3.0
Technical sales specialists - wholesale trade	2,135	2.9
Producers, directors, choreographers and related occupations	2,120	2.9
Administrative officers	1,960	2.7
Telecommunications line and cable workers	1,755	2.4
Senior managers - financial, communications and other business services	1,720	2.3
<b>Total Non-High Technology Occupations</b>	<b>73,380</b>	<b>30.6</b>

Source: BC Stats and Statistics Canada  
Numbers may not add due to rounding



**TABLE 7. EMPLOYMENT OF HIGH TECHNOLOGY WORKERS BY TOP TEN NON-HIGH TECHNOLOGY INDUSTRIES**

2016		
Non-High Technology Industries	Employment	% of Total
Management, scientific and technical consulting services	5,180	7.3
Hospitals	3,895	5.5
Universities	3,020	4.2
Local, municipal and regional public administration	2,995	4.2
Other federal government public administration	2,990	4.2
Provincial and territorial public administration	2,970	4.2
Electric power generation, transmission and distribution	2,340	3.3
Advertising, public relations, and related services	1,835	2.6
Medical and diagnostic laboratories	1,720	2.4
Depository credit intermediation	1,555	2.2
<b>Total Non-High Technology Industries</b>	<b>71,110</b>	<b>40.1</b>
2011		
Non-High Technology Industries	Employment	% of Total
Hospitals	4,110	6.3
Management, scientific and technical consulting services	3,750	5.8
Provincial and territorial public administration	3,395	5.2
Other federal services	3,390	5.2
Local, municipal and regional public administration	2,725	4.2
Universities	2,680	4.1
Electric power generation, transmission and distribution	2,355	3.6
Advertising, public relations, and related services	1,790	2.8
Depository credit intermediation	1,495	2.3
Medical and diagnostic laboratories	1,465	2.3
<b>Total Non-High Technology Industries</b>	<b>64,950</b>	<b>41.8</b>

Source: BC Stats and Statistics Canada  
Numbers may not add due to rounding

**TABLE 8 EMPLOYMENT OF HIGH TECHNOLOGY WORKERS BY TOP TEN OCCUPATIONS IN THE NON-HIGH TECHNOLOGY SECTOR**

2016		
High Technology Occupations	Employment	% of Total
Professional occupations in advertising, marketing and public relations	10,175	14.3
Information systems analysts and consultants	8,435	11.9
Computer network technicians	4,275	6.0
Computer and information systems managers	3,825	5.4
Civil engineers	3,445	4.8
Computer programmers and interactive media developers	3,380	4.8
Electrical and electronics engineering technologists and technicians	3,355	4.7
Biologists and related scientists	3,020	4.2
Mechanical engineers	2,760	3.9
Medical laboratory technologists	2,655	3.7
<b>Total High Technology Occupations</b>	<b>71,110</b>	<b>63.7</b>
2011		
High Technology Occupations	Employment	% of Total
Professional occupations in advertising, marketing and public relations	8,685	13.4
Information systems analysts and consultants	6,925	10.7
Computer network technicians	4,540	7.0
Computer programmers and interactive media developers	3,675	5.7
Computer and information systems managers	3,185	4.9
Electrical and electronics engineering technologists and technicians	3,120	4.8
Biologists and related scientists	2,725	4.2
Civil engineers	2,645	4.1
Medical laboratory technologists	2,595	4.0
Mechanical engineers	2,270	3.5
<b>Total High Technology Occupations</b>	<b>64,950</b>	<b>62.1</b>

Source: BC Stats and Statistics Canada  
Numbers may not add due to rounding



BCStats

BC Stats is the provincial government's leader in statistical and economic research, information and analysis essential for evidence-based decision-making. The goal is to increase overall business intelligence—information decision makers can use. For more information, please contact Executive Director Elizabeth Vickery at [elizabeth.vickery@gov.bc.ca](mailto:elizabeth.vickery@gov.bc.ca).

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