TECHNOLOGY LABOR MARKET REPORT

2018

THE COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE

Working together to support and develop regional talent.

work systems
The Portland Metro Workforce Development Board

workforce
SOUTHWEST WASHINGTON

Clackamas Workforce Partnership

REPORT SUMMARY

In 2016, the Columbia-Willamette Workforce Collaborative (CWWC) published its first data report about the Software/IT industry. This report introduced the community to Software/IT as a high growth industry in the Portland-Vancouver metro area, and led the collaborative to building a workforce plan, TechTown, which launched in June 2017.

Unlike the other CWWC designated sectors, Software/IT is unique in that three-fourths of technology occupations lay outside of the industry, which means that there are more software developers, network administrators, and data analysts working for hospitals, school districts, and financial institutions than there are working for tech companies. Consequently, this report will provide data on both the Software/IT industry and Technology occupations. Combined, these will be referred to as the Tech sector. Since the 2016 report (which included data from 2013, 2014, and 2015), growth in the Software/IT industry has continued to climb, reaching 26,500 individuals as of 2017. For all occupations in the industry, there were over 2,000 online job postings each month in 2017, and 4,600 monthly postings for Technology occupations across all industries. The overall economy is expected to grow at 13 percent over the next decade while the Software/IT industry is expected to double that pace at a rate of 25 percent, adding 6,500 jobs. Technology occupations will grow 18 percent, adding 8,300 jobs. To keep pace with the high-demand of these occupations, over 6,000 tech-related occupations were granted H-1B visas in 2017.

Software/IT firms continue to have notable concentrations in software publishing for the region, at a rate that is 160% higher than the national average. Technology occupations are 16% more concentrated locally than throughout the country. High wage salaries are particularly appealing in both the Software/IT industry (average $116,000) and among Technology occupations (average $90,000).

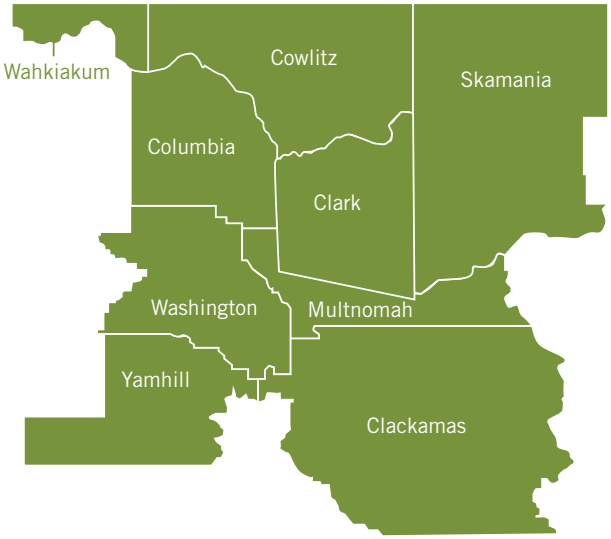
Under the guidance of local companies, the three-point workforce plan that emerged focused on cultivating a diverse, homegrown talent pipeline, and a more inclusive work environment. The strategies included in the plan seek to attract and cultivate more local, under-represented candidates; develop tools and resources to increase access to information and training to help under-represented populations pursue tech careers; and develop and share industry working models which increase hiring, retention and advancement of women and people of color.

The CWWC works with employers and industry experts throughout the two-year plan, utilizing their skills and abilities to educate influencers with data-driven outlooks for careers in Technology, to target outreach and cultivate partnerships with diverse communities and organizations, foster inclusive working environments, and facilitate partnership between employers and curriculum development. Meeting with employers quarterly allows the collaborative to regularly engage the industry to ensure that workforce development strategies adapt as the industry changes. The 2018 report shows continued fast-paced growth for the industry and indicates that workforce development efforts are helping to support the success of the industry. The Columbia-Willamette Workforce Collaborative will be there to support regional employers, partners, industry experts, job seekers, and youth along the way.

Cover photo: #WOCinTech Chat

ABOUT THE COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE

The Columbia-Willamette Workforce Collaborative (Collaborative) is a partnership between Clackamas Workforce Partnership, Workforce Southwest Washington and Worksystems: the three Workforce Development Boards covering the Portland-Vancouver Metropolitan Area. The Collaborative delivers a unified approach to serving industry, supporting economic development, and guiding public workforce training investments to better address the needs of our combined labor shed. We know that people are willing to travel throughout the region for the best opportunities and that employers need the most qualified workers regardless of where they live. By working together, we can cultivate our regional talent pool and build the foundation for a strong economy.

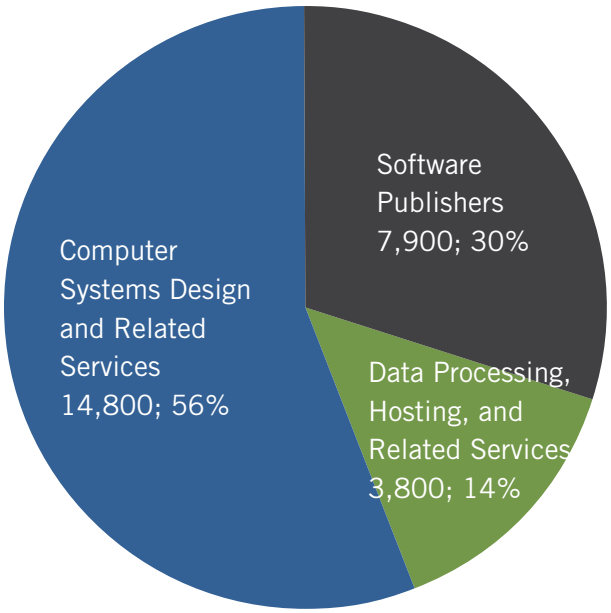


ABOUT THIS REPORT

The Collaborative is focused on aligning and investing resources to support the workforce needs of four sectors: Advanced Manufacturing, Health Care, Technology, and Construction. Sectors are chosen based on factors such as their economic significance to the region, current number of openings and job growth projections, average wages that support self-sufficiency, and career ladder opportunities across the skill continuum. By examining labor market intelligence (such as the data contained in this report) and vetting the information with business partners, we are able to better understand industry trends, identify current and emergent workforce needs, and develop customized solutions for each sector.

OVERVIEW

SOFTWARE/IT EMPLOYMENT BY SUBINDUSTRY PORTLAND-VANCOUVER METRO AREA, 2017



Source: EMSI

With 26,500 jobs and a payroll of $3.1 billion, the Software/IT industry accounts for 2.3 percent of the greater Portland region's private-sector employment and 4.7 percent of payroll.

The Software/IT industry includes software publishers, computer systems design, and data processing services. This includes companies that develop and publish packaged software; develop customized software; and design computer systems to meet the needs of a customer. Data centers, internet service providers, and web hosting companies are also part of this industry.

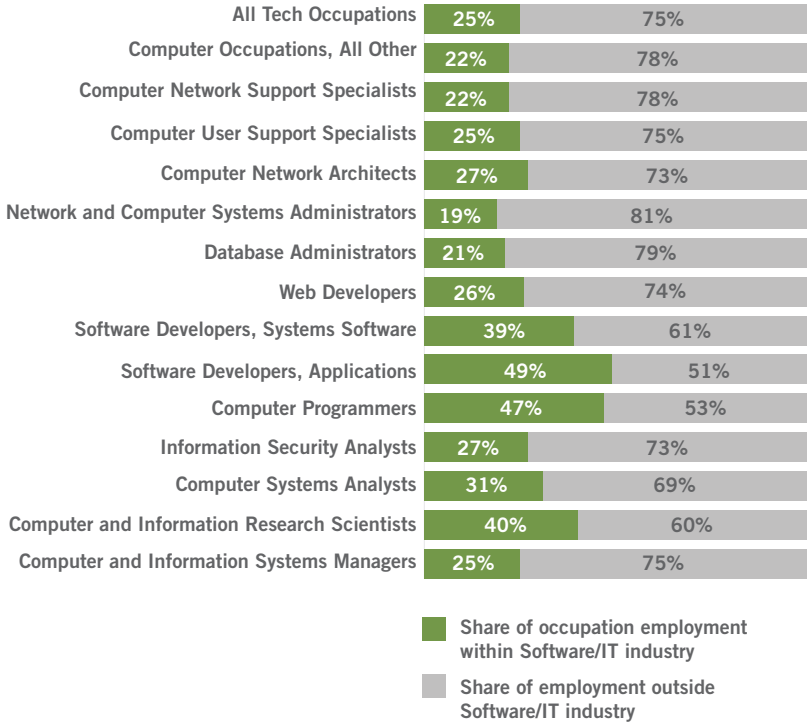
Nearly six in ten of the industry's workforce consists of the computer-related occupations found in the table, including computer analysts, programmers, and software developers. These 14 Technology occupations account for nearly 46,800 jobs across all industries.

TECHNOLOGY OCCUPATIONS, PORTLAND-VANCOUVER METRO AREA, 2017

Occupation	2017 Jobs - All Industries	Employed in Tech Sector	Share of Tech Sector Employment	Share of Occupation Employment Found in Tech Sector	Median Hourly Earnings
Computer and Information Systems Managers	4,183	1,044	3.9%	25%	$59.31
Computer and Information Research Scientists	252	101	0.4%	40%	$71.19
Computer Systems Analysts	4,555	1,398	5.3%	31%	$41.83
Information Security Analysts	639	173	0.7%	27%	$44.76
Computer Programmers	2,789	1,301	4.9%	47%	$38.78
Software Developers, Applications	11,288	5,579	21.1%	49%	$48.32
Software Developers, Systems Software	3,463	1,350	5.1%	39%	$48.21
Web Developers	2,516	661	2.5%	26%	$29.41
Database Administrators	895	185	0.7%	21%	$39.94
Network and Computer Systems Administrators	2,580	497	1.9%	19%	$37.52
Computer Network Architects	1,033	283	1.1%	27%	$55.47
Computer User Support Specialists	6,800	1,719	6.5%	25%	$24.04
Computer Network Support Specialists	1,574	340	1.3%	22%	$28.12
Computer Occupations, All Other	4,218	942	3.6%	22%	$39.14
Total	**46,785**	**15,574**	**59%**	**25%**	**$40.74**

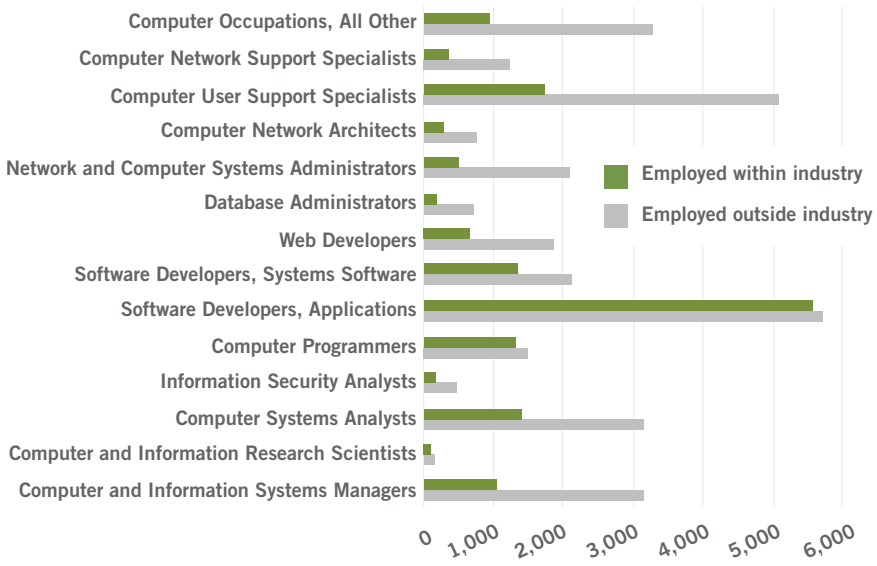
Source: EMSI

TECHNOLOGY OCCUPATIONS SHARE OF EMPLOYMENT WITHIN INDUSTRY VS. OUTSIDE OF INDUSTRY PORTLAND-VANCOUVER METRO AREA, 2017



Source: EMSI

TECHNOLOGY OCCUPATIONS EMPLOYMENT WITHIN INDUSTRY VS. OUTSIDE OF INDUSTRY PORTLAND-VANCOUVER METRO AREA, 2017



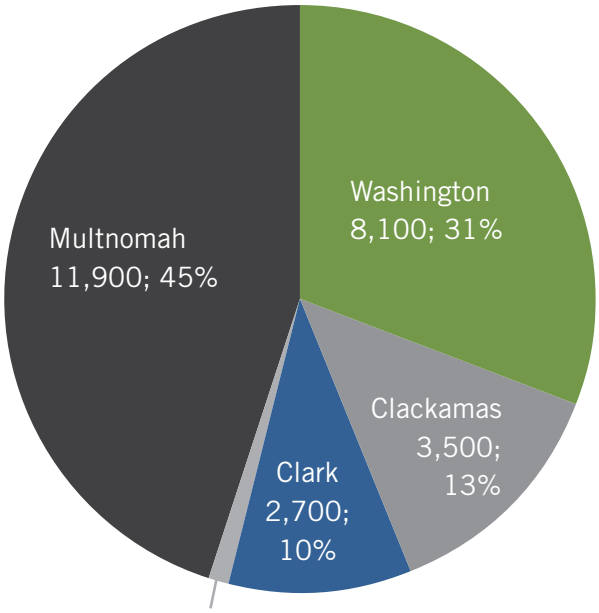
Source: EMSI

Despite making up most of the jobs found in the Software/IT industry, none of the 14 Technology occupations have a majority of their employment within the Software/IT industry. Since an array of companies in every industry use some form of computer technology in their day-to-day operations, just 25 percent of those employed in Technology occupations are found in the Software/IT industry. The most common industries outside the Software/IT industry that tend to employ the additional 75 percent of workers found in these occupations include holding companies, manufacturing, and finance & insurance.

The industry's largest occupation—software developers for applications—nearly splits even, however, a 51 percent share of these workers are employed outside the Software/IT industry. Nearly every other Technology occupation tends to have a substantial share of employment outside the industry, often more than double the amount employed within the industry.

Consequently, this report will provide data on both the Software/IT industry and Technology occupations. The term "Tech sector" throughout this report indicates that the data or information pertains to both.

SOFTWARE/IT INDUSTRY EMPLOYMENT BY COUNTY
PORTLAND-VANCOUVER METRO AREA, 2017



Remainder* 300; 1%

**Columbia, Cowlitz, Skamania, Yamhill, Wahkiakum counties*

Source: EMSI

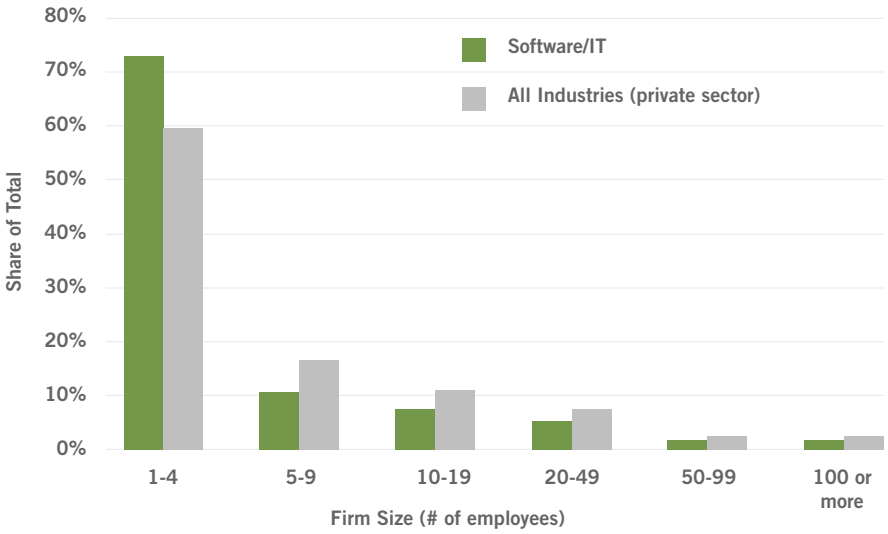
Multnomah and Washington counties hold a disproportionate share of the region's Software/IT industry employment (76 percent). Employment tends to cluster in downtown Portland and along Highways 26 and 217. The two-county share of employment, however, has decreased by four percentage points compared to 2015.

Multnomah County experienced a four-figure increase in employment since 2015, representing a 10 percent rise. Clark County experienced the largest percentage-based growth, with nearly 750 Software/IT jobs added since 2015 constituting a 38 percent growth.

The county share of employment for Technology occupations is roughly equivalent.

FIRM CHARACTERISTICS

FIRMS BY SIZE CLASS: SOFTWARE/IT
PORTLAND-VANCOUVER METRO AREA



Source: Oregon Employment Department, Washington Employment Security Department

More than three in four Software/IT industry firms employ fewer than five workers. Despite the skew, larger firms (50+ employees) account for over 56 percent of the total employment.

MAJOR EMPLOYERS

Act-On	Fiserv, Inc.	Oracle
Autodesk	Gravitate	Puppet
AWS Elemental	Jama Software	Sage
Columbia Ultimate	Janrain	Salesforce
Computers Made Easy Inc.	Jenkon	Smarsh
Dealer Spike	Jive Software	Synopsys, Inc.
Digimarc Corporation	Local Net	Tripwire, Inc.
DiscoverOrg	Mentor Graphics	Urban Airship
EarthLink Business	Navex Global	Viewpoint Construction Software
Electric Lightwave	New Relic	
	On Line Support Inc.	

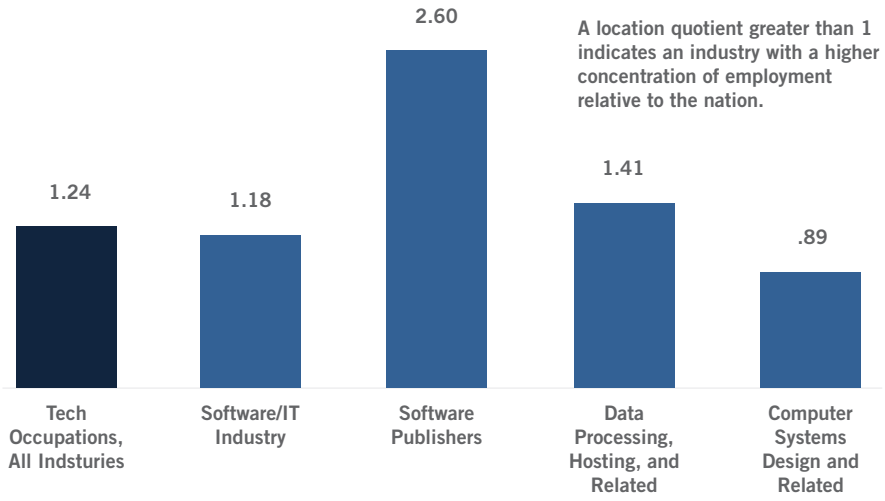
Source: Portland Business Journal

Acquisitions, mergers, and spin-offs define the Software/IT industry. Consequently, the major employers in the region tend to change frequently. For example, industry titan Amazon acquired Elemental Technologies in late 2015 for nearly $300 million. In early 2017, Elemental Technologies changed its name to AWS Elemental to better reflect the acquisition by Amazon.

The amount of venture capital investment flowing into a region is often a good indicator of the strength of start-ups in the region. Oregon firms most recently received nearly $350 million in 2017 in venture investment, representing the state's best level of investment in several years. American startup companies received $84 billion from venture capitalists in 2017, however, meaning that Oregon firms received less than one-half percent of the total national investment.

CONCENTRATION

LOCATION QUOTIENTS
TECHNOLOGY OCCUPATIONS, SOFTWARE/IT INDUSTRY, AND SUBINDUSTRIES
PORTLAND-VANCOUVER METRO AREA: 2017

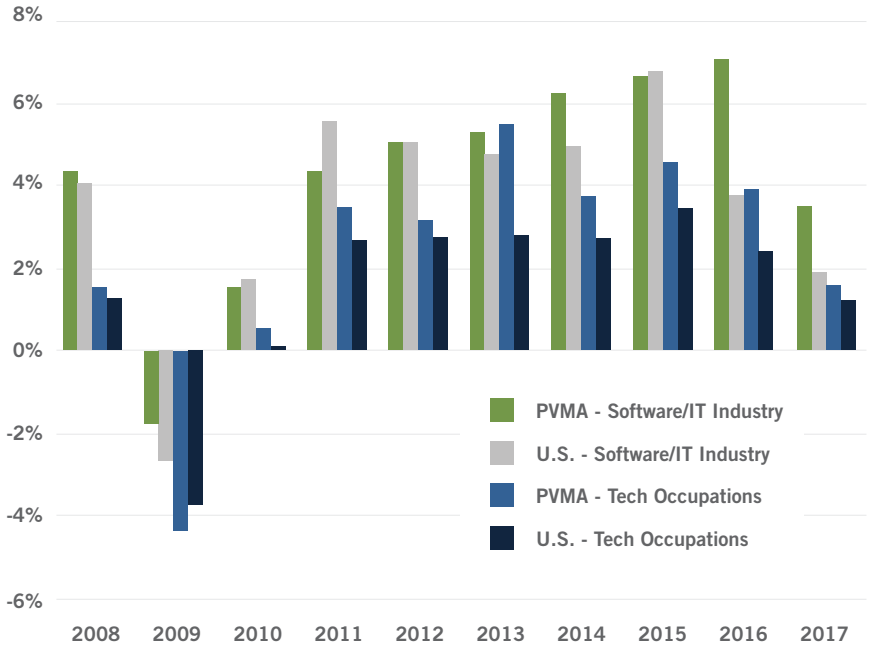


Source: EMSI

Location quotients are used to measure an industry's or occupation's employment concentration in an area. A number greater than one indicates a higher concentration of employment relative to the nation. The Portland-Vancouver metro area is a net exporter of Software/IT industry goods and services, most notably in software. Additionally, Technology occupations are 24% more concentrated in the region relative to the U.S average.

EMPLOYMENT TRENDS

TECH SECTOR ANNUAL GROWTH RATES
PORTLAND-VANCOUVER METRO AREA VS. UNITED STATES



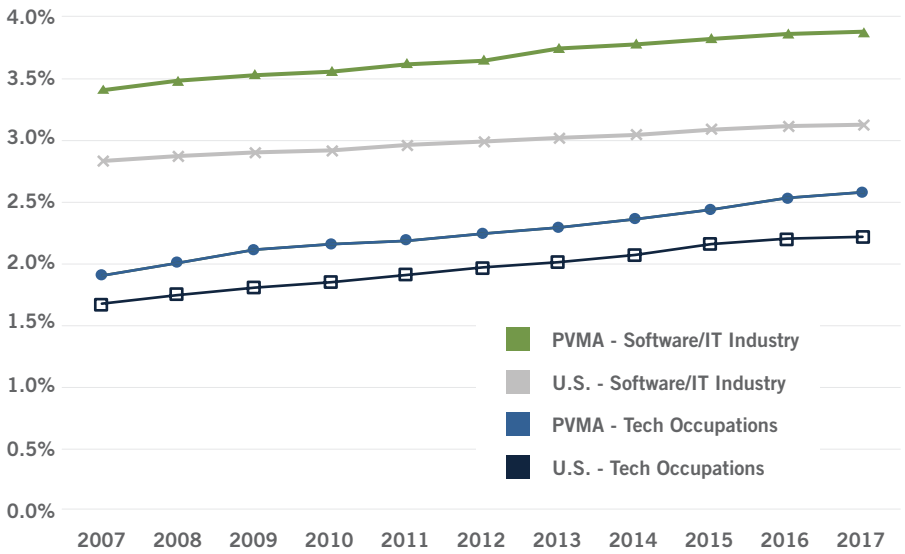
Source: EMSI

Job growth in the region's Software/IT industry has outperformed the nation in most years over the last decade. Growth for Technology occupations in the region has outpaced their national counterparts in all years except 2009 (Great Recession).

Compared to other industries, the Software/IT industry emerged relatively unscathed from the Great Recession, losing less than two percent of jobs in 2009.

Most recently, the region's Software/IT industry nearly doubled U.S. growth in both 2016 and 2017. While growth for Technology occupations has slowed relative to recent years, it remains above national growth.

TECH SECTOR SHARE OF EMPLOYMENT
PORTLAND-VANCOUVER METRO AREA AND U.S.

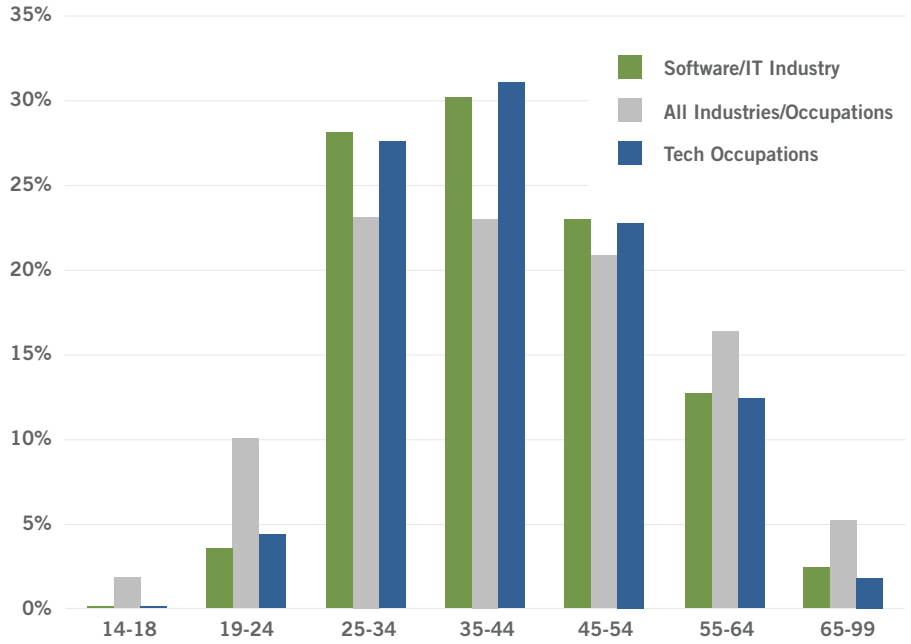


Source: EMSI

Proportionally, the Tech sector represents a larger share of the region's economy compared to the nation. Technology occupations now represent nearly four percent of total employment while the Software/IT industry employs 2.6 percent of region's workforce.

CHARACTERISTICS OF THE WORKFORCE

TECH SECTOR EMPLOYMENT BY AGE
PORTLAND-VANCOUVER METRO AREA, 2017

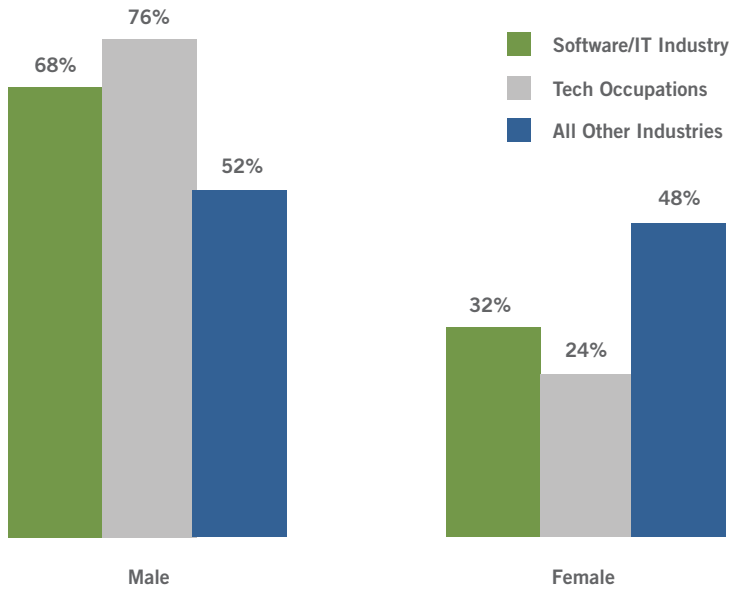


Source: EMSI

Overall, the workers in the Tech sector trend young. Nearly 60 percent of tech workers are aged 25 to 44, compared to 46 percent across all industries.

The younger workforce reflects the sector's relative newcomer status along with its rapid growth and technical skills requirements. The technical skill requirements and high levels of educations generally needed, however, create employment barriers for younger workers. Consequently, the share of tech workers under the age of 25 is just half the proportion across all industries.

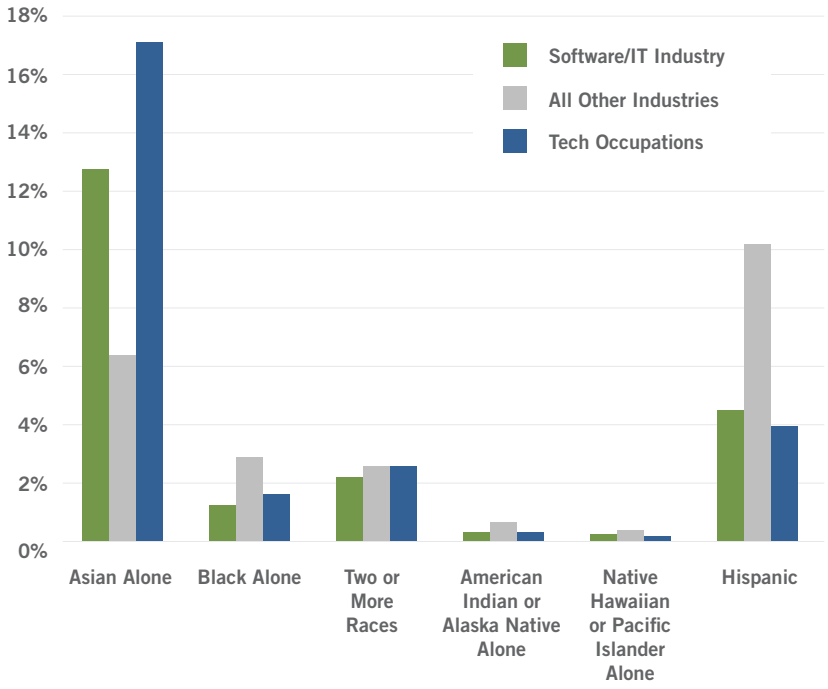
TECH SECTOR EMPLOYMENT BY GENDER
PORTLAND-VANCOUVER METRO AREA, 2017



Source: EMSI

Males comprise a strong majority of the Technology workforce, more so in the occupation group than the industry. These shares remain consistent with levels seen in 2015.

TECH SECTOR EMPLOYMENT BY RACE (NONWHITE) AND ETHNICITY
PORTLAND-VANCOUVER METRO AREA, 2017



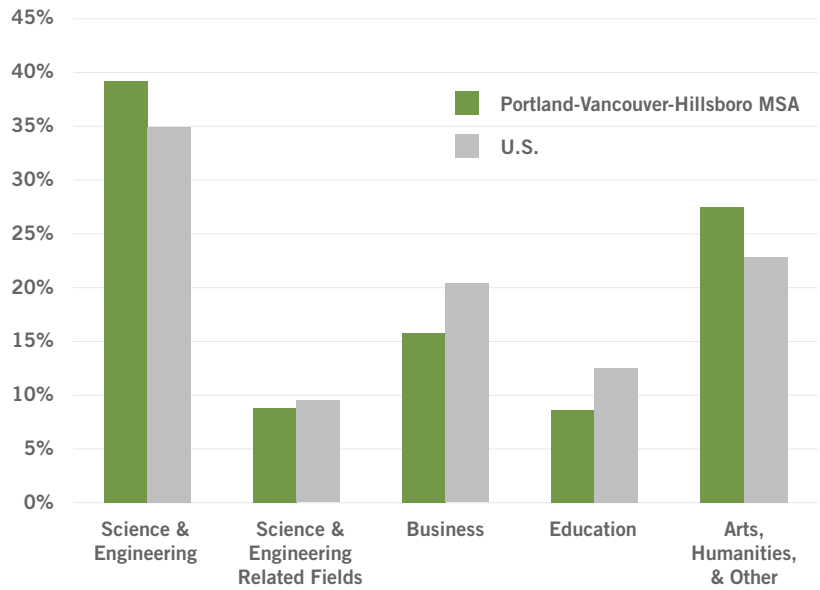
Source: EMSI

Whites make up the vast majority of the both the Software/IT industry and occupation group workforce (79 and 74 percent, respectively). Asians comprise more than double the share of tech workers compared to the proportion working in all industries.

Non-Asian people of color have less than half their representation found throughout the Tech sector.

Numerous programs have sprung in recent years with missions focused on addressing the underrepresentation of women and communities of color in Technology.

POPULATION (25+) BY FIELD OF BACHELOR'S DEGREE
PORTLAND-VANCOUVER-HILLSBORO MSA AND U.S., 2016



Source: U.S. Census Bureau

Nearly 660,000 of the region's residents over the age of 25 hold a Bachelor's degree or higher. Half of these degrees are in Science, Engineering, and Related Fields.

Residents of the Portland-Vancouver-Hillsboro MSA are more likely to hold a degree in Science and Engineering compared to the nation.

TECHNOLOGY OCCUPATIONS (ALL INDUSTRIES): PORTLAND-VANCOUVER METRO AREA

Occupation	2017 Employment	2027 Employment	Estimated Annual Openings	Estimated Annual Growth Openings
Computer and Information Systems Managers	4,183	5,008	417	83
Computer and Information Research Scientists	252	291	22	4
Computer Systems Analysts	4,555	5,823	457	127
Information Security Analysts	639	808	65	17
Computer Programmers	2,789	2,835	186	5
Software Developers, Applications	11,288	13,198	969	191
Software Developers, Systems Software	3,463	4,005	291	54
Web Developers	2,516	3,108	256	59
Database Administrators	895	1,054	79	16
Network and Computer Systems Administrators	2,580	3,022	218	44
Computer Network Architects	1,033	1,224	91	19
Computer User Support Specialists	6,800	7,159	588	36
Computer Network Support Specialists	1,574	1,647	134	7
Computer Occupations, All Other	4,218	4,571	328	35
Total	**46,785**	**53,753**	**4,101**	**697**

An estimated 270 different occupations make up the total workforce of the Software/IT industry. Three in five industry jobs are employed within the 14 Technology occupations.

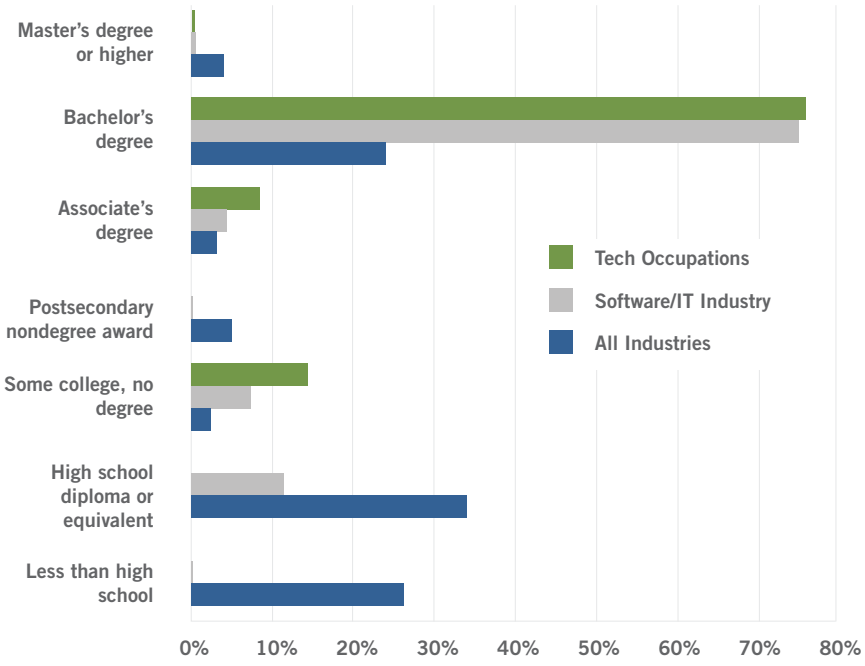
TECHNOLOGY OCCUPATIONS: PORTLAND-VANCOUVER METRO AREA

Occupation	2017 Industry Employment	% of Industry Employment	2017 Median Wage	% of Median Wage for All Occupations	Location Quotient	Typical Entry Level Education
Software Developers, Applications	5,579	21.1%	$48.32	245%	1.67	Bachelor's degree
Computer User Support Specialists	1,719	6.5%	$24.04	122%	1.20	Some college, no degree
Computer Systems Analysts	1,398	5.3%	$41.83	212%	0.94	Bachelor's degree
Software Developers, Systems Software	1,350	5.1%	$48.21	244%	1.00	Bachelor's degree
Computer Programmers	1,301	4.9%	$38.78	197%	1.24	Bachelor's degree
Computer and Information Systems Managers	1,044	3.9%	$59.31	301%	1.38	Bachelor's degree
Computer Occupations, All Other	942	3.6%	$39.14	198%	1.86	Bachelor's degree
General and Operations Managers	666	2.5%	$43.17	219%	1.16	Bachelor's degree
Web Developers	661	2.5%	$29.41	149%	2.23	Associate's degree
Sales Representatives, Services, All Other	629	2.4%	$22.88	116%	0.88	High school diploma or equivalent
Customer Service Representatives	618	2.3%	$16.59	84%	0.85	High school diploma or equivalent
Computer Hardware Engineers	606	2.3%	$61.92	314%	5.87	Bachelor's degree
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	524	2.0%	$34.07	173%	1.05	Bachelor's degree
Network and Computer Systems Administrators	497	1.9%	$37.52	190%	0.81	Bachelor's degree
Market Research Analysts and Marketing Specialists	443	1.7%	$30.10	153%	1.04	Bachelor's degree
Total	**17,978**	**68%**				

Source: EMSI

EDUCATIONAL REQUIREMENTS

TECHNOLOGY EMPLOYMENT BY TYPICAL ENTRY-LEVEL EDUCATION
PORTLAND-VANCOUVER METRO AREA, 2017



Source: EMSI

Innovating, designing, coding, and supporting the wide array of dynamic and complex Technology products requires a well-educated and highly-skilled workforce. Three quarters of the jobs found in the Tech sector typically require a Bachelor's degree.

All of the Technology occupations typically require some form of post-secondary education.

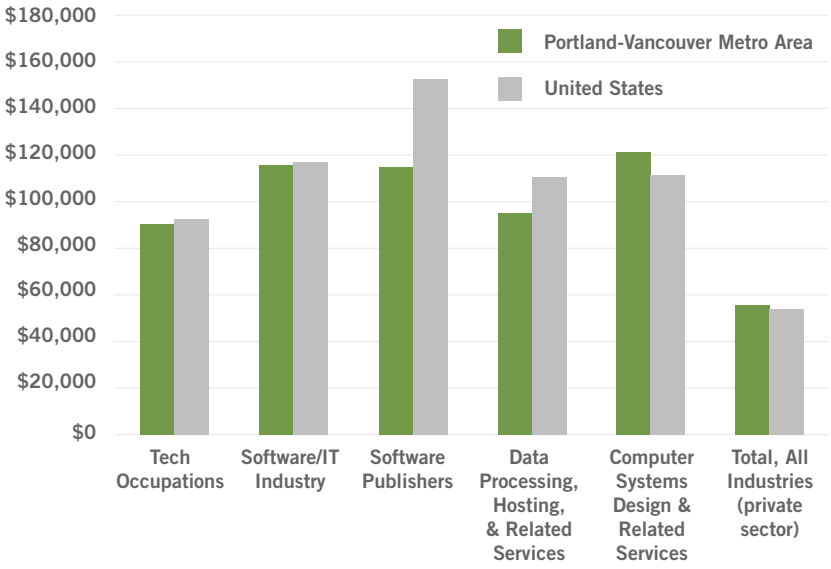
TRAINING AND DEGREE GRADUATE COMPLETER DATA FOR TECHNOLOGY-RELATED PROGRAMS, PORTLAND-VANCOUVER METRO AREA

		Type of Credential Granted					
Training*	2016 Completers	Award less than 2 years	Assoc.	Bachelor's	Postbac. Certificate	Master's	Doctorate
Computer Science	202	-	8	150	-	40	4
Computer Programming, Specific Applications	173	104	69	-	-	-	-
Web Page, Digital/Multimedia and Information Resources Design	107	60	32	15	-	-	-
Management Information Systems, General	82	66	-	16	-	-	-
Computer and Information Systems Security/Information Assurance	73	41	32	-	-	-	-
Computer Systems Networking and Telecommunications	63	18	45	-	-	-	-
Bioinformatics	44	-	-	2	19	21	2
Network and System Administration/ Administrator	30	-	30	-	-	-	-
Information Technology	26	8	7	11	-	-	-
System, Networking, and LAN/WAN Management/Manager	24	24	-	-	-	-	-
Computer Engineering, General	21	-	-	15	-	3	3
Operations Management and Supervision	18	14	4	-	-	-	-
Computer Support Specialist	17	17	-	-	-	-	-
Web/Multimedia Management and Webmaster	16	5	11	-	-	-	-
Medical Informatics	10	-	10	-	-	-	-
Computer and Information Sciences, General	9	-	3	6	-	-	-
Computer Programming/Programmer, General	9	3	-	6	-	-	-
Data Modeling/Warehousing and Database Administration	9	3	3	-	3	-	-
Mathematics and Computer Science	6	-	-	6	-	-	-
Information Science/Studies	5	-	-	5	-	-	-
Computer Graphics	5	-	-	5	-	-	-
TOTALS	**949**	**363**	**254**	**237**	**22**	**64**	**9**

Source: EMSI

This data does not include code school or academy graduates in the region.

ANNUAL AVERAGE WAGES FOR TECHNOLOGY OCCUPATIONS, SOFTWARE/IT INDUSTRY, AND SUBINDUSTRIES: PORTLAND-VANCOUVER METRO AREA AND U.S., 2017



Source: EMSI

Compared to all industries, the Tech sector offers high paying jobs. When comparing to their national counterparts, however, the average wages in the region tend to be lower. The only exception is the Computer systems design & related services industry, with an average wage of nearly $122,000 which equates to nine percent higher than the U.S.

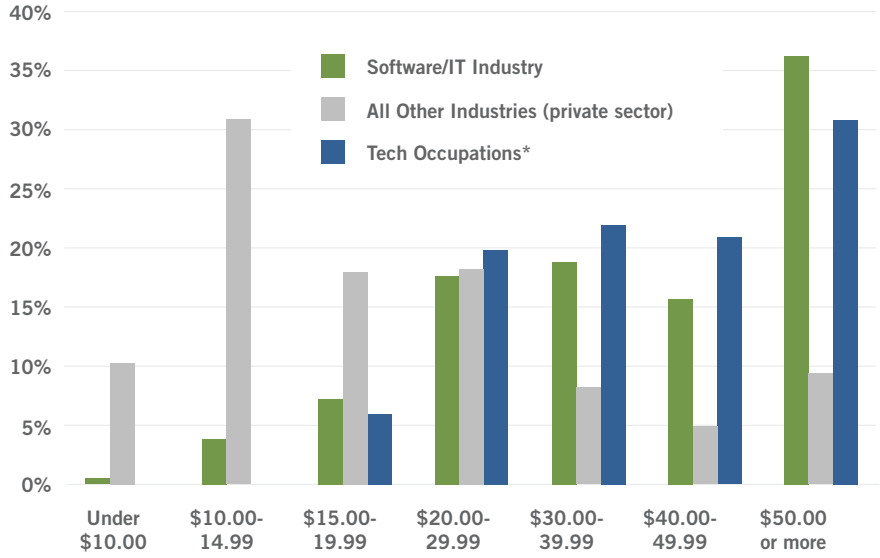
Combining all industries, average wages in Software/IT are nearly equivalent to U.S. averages (99 percent). Comparatively, average wages in the industry were just 93 percent of the U.S. average in 2015.

TECH SECTOR AVERAGE ANNUAL WAGES, 2017

	Portland-Vancouver Metro Area	United States
Tech Occupations	$90,210	$92,581
Software/IT Industry	$115,940	$117,088
Software Publishers	$114,857	$152,850
Data Processing, Hosting, & Related Services	$95,359	$110,796
Computer Systems Design & Related Services	$121,803	$111,566
Average Annual Wage, All Industries (private sector)	**$56,061**	**$54,520**

Source: EMSI

TECH SECTOR
SHARE OF EMPLOYMENT BY HOURLY WAGE
OREGON, 2016



In Oregon, the median wage in the Software/IT industry is $41.08, nearly two-and-a-half times that of all industries ($17.32).

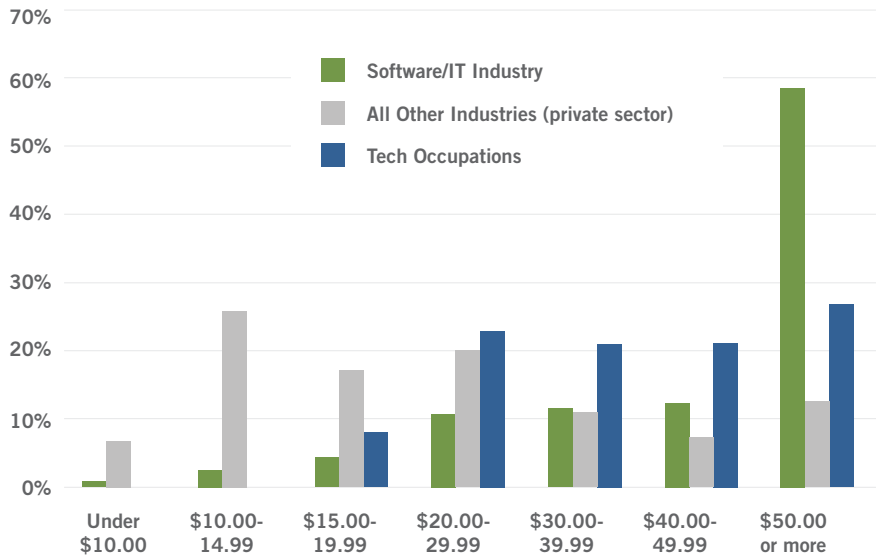
Seven in ten Software/IT industry workers and three-quarters of those employed in Technology occupations earn at least $30 per hour, compared to one in four across all industries.

More than half of Tech sector workers earn at least $40 per hour.

** Occupation data specific to Oregon portion of Portland-Vancouver Metro Area*

Source: Oregon Employment Dept.; Unemployment Insurance Wage Records, EMSI

TECH SECTOR
SHARE OF EMPLOYMENT BY HOURLY WAGE
WASHINGTON, 2016



In Washington statewide, nearly six in ten of workers in the Software/IT industry earns $50 hourly or more compared to just one in ten across all other industries. Employment in King County (Seattle) represents 86 percent of the industry in Washington, skewing the data for the remainder of the state.

Nearly half of those employed in Technology occupations in the Washington portion of the Portland-Vancouver Metro Area earn $40 or more hourly.

** Occupation data specific to Washington portion of Portland-Vancouver Metro Area*

Source: Washington Employment Security Department

TURNOVER

TURNOVER RATE IN SOFTWARE/IT INDUSTRY
PORTLAND-VANCOUVER METRO AREA, 2016

Total, Software/IT Industry	7.7%
Software Publishers	7.4%
Data Processing, Hosting, and Related Services	5.4%
Computer Systems Design and Related Services	9.3%
Total, All Private Sector Industries	**9.8%**

excludes Skamania County

4 quarter average ending 3Q2016

Source: Oregon Employment Dept. analysis of U.S. Census Bureau (LEHD) data

Turnover Rate: The rate at which stable jobs (full-quarter employment) begin and end. Refers to the change in the workforce due to employee separations and hiring.

The definitions of a separation is made at the establishment/ employer level.

TOP TECH-RELATED OCCUPATIONAL VACANCIES
PORTLAND TRI-COUNTY, 2017

	2017 Vacancies, All Industries
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	254
Software Developers, Applications	248
Computer Occupations, All Other	124
Computer User Support Specialists	94
Network and Computer Systems Administrators	8

Tri-County: Clackamas, Multnomah, Washington counties

NOTE: Information not available for SW Washington

Source: Oregon Employment Department, 2017 Job Vacancy Survey

Turnover refers to the change in the workforce due to employee separations and hiring. The Software/IT industry experiences a lower turnover than that for all industries (private sector). Additionally, turnover has decreased half a percentage point since 2014.

Workers in data processing are more likely to stay at their current jobs while workers in computer systems design tend to move between companies and industries more frequently.

The Portland region has lower turnover than Austin, Denver, San Francisco, Minneapolis, Salt Lake, and San Jose. The Washington portion of the region has higher rates of turnover than the Oregon portion.

REGISTERED JOBSEEKERS
TECHNOLOGY: PORTLAND METRO AREA (OREGON PORTION)
FEBRUARY 2018

Occupation	Jobseekers [1]
Computer Occupations, All Other	1,522
Computer User Support Specialists	1,086
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	787
Computer Systems Analysts	712
Software Developers, Applications	688
Network and Computer Systems Administrators	605
Web Developers	595
Computer Programmers	549
Computer and Information Systems Managers	477
Software Developers, Systems Software	413

[1] Data represents job seekers registered with The Oregon Employment Department, iMatchSkills. Active status: February 2018. Data are self-reported. Job seekers can include more than one occupation in their profile and are therefor counted more than once in the data. The unique count of job seekers for the above list of occupations is 3,642.

NOTE: Information not available for SW Washington

Portland Metro Area (Oregon portion): Clackamas, Columbia, Multnomah, Washington, Yamhill counties

Source: Oregon Employment Department

There are several ways to depict the current supply of workers. Unemployment Insurance (UI) claimants are a subset of jobseekers and does not include those unemployed workers who don't qualify for, or have exhausted, benefits. Persons registered with the Oregon Employment Department are both employed and unemployed jobseekers including but not limited to those receiving unemployment benefits. This is a much larger pool of workers than UI claimants.

Note that this is not a complete picture of supply as many Tech sector jobs are filled via migration.

UNEMPLOYMENT INSURANCE CLAIMANTS
SOUTHWEST WASHINGTON
JANUARY 2018

Occupation	Claimants[1]
Computer and Information Systems Managers	16
Computer Systems Analysts	15
Software Developers, Applications	14
Computer User Support Specialists	14
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	10
Software Developers, Systems Software	8
Network and Computer Systems Administrators	8
Computer Programmers	3
Web Developers	3
Computer Occupations, All Other	3

[1] Data represents claimants registered with The Washington Employment Security Department (active status, January 2018).

Southwest Washington: Clark, Cowlitz, Wahkiakum, Skamania counties

Source: Washington Employment Security Department

In Southwest Washington, there were just 94 unemployed workers claiming unemployment insurance in the Technology sector's ten largest occupations (January 2018). Over 5,000 Southwest Washington workers are employed in these jobs across all industries; 1,600 are employed within the Software/IT industry.

CURRENT DEMAND

TECHNOLOGY OCCUPATIONS: FREQUENCY OF ONLINE JOB POSTINGS
PORTLAND-VANCOUVER METRO AREA, 2017 MONTHLY AVERAGE

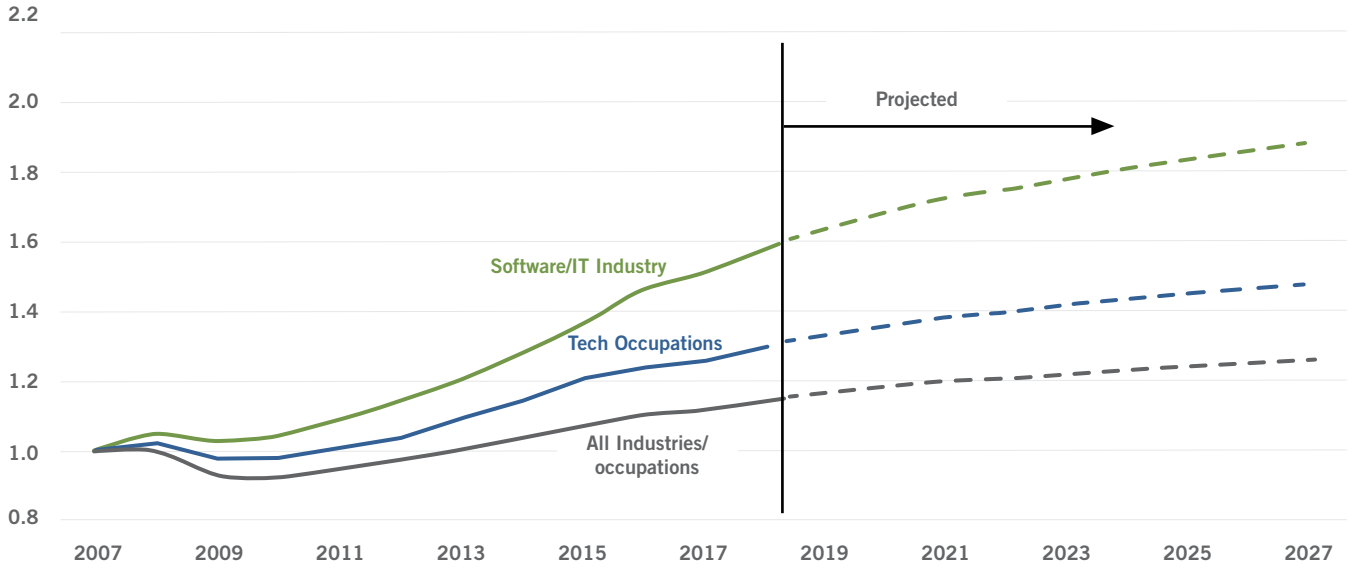
Occupation	Average monthly online job postings, Software/IT industry, 2017	Average monthly online job postings, all industries, 2017
Software Developers, Applications	278	1,155
Computer Occupations, All Other	233	967
IT Project Managers	103	389
Computer Systems Engineers/Architects	86	288
Software Quality Assurance Engineers and Testers	42	245
Business Intelligence Analysts	2	22
Geographic Information Systems Technicians	<1	6
Document Management Specialists	-	2
Search Marketing Strategists	<1	15
Computer Systems Analysts	88	454
Computer Systems Analysts	87	435
Informatics Nurse Specialists	<1	19
Web Developers	75	298
Computer User Support Specialists	74	512
Network and Computer Systems Administrators	67	399
Computer and Information Systems Managers	66	210
Information Security Analysts	41	178
Software Developers, Systems Software	16	185
Database Administrators	15	73
Computer Programmers	14	78
Computer and Information Research Scientists	5	44
Computer Network Architects	4	32
Computer Network Support Specialists	<1	4
All Occupations in Sector	**2,182**	

12-month average, Jan-Dec 2017

Source: EMSI

LONG-TERM DEMAND

HISTORICAL & PROJECTED GROWTH
PORTLAND-VANCOUVER METRO AREA
2007 INDEXED TO 1



Source: EMSI

Technological innovation and mounting demand will continue to fuel strong growth in the Tech sector. Software functionality continues to dig deeper into every aspect of commercial and consumer life, indicating the likelihood of the strong growth trend continuing across the sector. Additionally, expanding technology budgets in firms across all industries will drive growth in Technology occupations.

Between 2017 and 2027, the Software/IT industry is projected to add more than 6,500 jobs for a growth rate of 25 percent—more than double compared to the overall economy (13 percent). The Technology occupation group will also sustain higher-than-average growth with an estimated 8,300 jobs added over the next decade (18 percent).

Multnomah County will experience the most numeric growth with more than half of the new jobs. Clark County will grow the fastest—the estimated 1,200 jobs added over the next decade would represent a 45% increase.

OCCUPATIONS ADDING THE LARGEST NUMBER OF JOBS: SOFTWARE/IT INDUSTRY
PORTLAND-VANCOUVER METRO AREA

Occupation	2017	2027	Growth	Percent Growth	Share of Sector Growth	Projected Annual Growth Openings
Software Developers, Applications	5,579	6,964	1,385	25%	21%	139
Computer Systems Analysts	1,398	1,953	555	40%	9%	56
Computer User Support Specialists	1,719	2,240	521	30%	8%	52
Software Developers, Systems Software	1,350	1,765	415	31%	6%	42
Computer and Information Systems Managers	1,044	1,358	314	30%	5%	31
Web Developers	661	857	196	30%	3%	20
Network and Computer Systems Administrators	497	690	193	39%	3%	19
General and Operations Managers	666	830	164	25%	3%	16
Sales Representatives, Services, All Other	578	739	161	28%	2%	16
Computer Occupations, All Other	942	1,100	158	17%	2%	16
Customer Service Representatives	618	765	147	24%	2%	15
Market Research Analysts and Marketing Specialists	443	590	147	33%	2%	15
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	500	620	120	24%	2%	12
Management Analysts	396	513	117	30%	2%	12
Computer Network Architects	283	380	97	34%	1%	10
Computer Hardware Engineers	606	702	96	16%	1%	10
Computer Network Support Specialists	340	435	95	28%	1%	10
Business Operations Specialists, All Other	414	499	85	21%	1%	9
Information Security Analysts	173	255	82	47%	1%	8
Accountants and Auditors	278	354	76	27%	1%	8
Total Sector	**25,956**	**32,446**	**6,503**	**25%**		**650**

Source: EMSI

The top five occupations will represent half of the sector's growth over the next decade. Eight of the twenty occupations listed above are not directly computer related, however, some will likely still require technical understanding of technology in some capacity such as sales representatives, managers, and analysts.

IMPORTING TALENT

H-1B VISAS FOR TECHNOLOGY-RELATED OCCUPATIONS
PORTLAND-VANCOUVER METRO AREA, 2017

Occupation	# of Certified H-1B Visas
Computer Systems Analysts	1,882
Software Developers, Systems Software	1,258
Software Developers, Applications	932
Computer Occupations, All Other	928
Computer Programmer	708
Web Developers	146
Network and Computer Systems Administrators	111
Computer and Information Systems Managers	107
Computer and Information Research Scientists	72
Information Security Analysts	49
Database Administrators	24
Computer User Support Specialists	5
Computer Network Architects	2
Computer Network Support Specialists	1

Source: Department of Labor

Oregon remains an attractive place for Technology employment. Employed workers in computer-related occupations account for five percent of total net migration to the state.

Technology talent also comes from the H-1B Visa program, which allows employers to temporarily employ foreign workers in specialty occupations including engineering, math, and medicine. Jobs filled by H-1B Visa workers typically require a Bachelor's degree or higher.

Nearly 9,600 H-1B visas were certified in the Portland region in 2017. Two in three of issued visas went towards jobs within the Technology occupations group. The top five Technology occupations listed represent 92 percent of visas issued for the group.

H-1B VISAS FOR TECHNOLOGY-RELATED OCCUPATIONS
PORTLAND-VANCOUVER METRO AREA, 2017

City	H-1B Visas	Share of Total
Hillsboro	2,221	36%
Portland	1,878	30%
Beaverton	1,190	19%
Wilsonville	336	5%
Vancouver	291	5%
Lake Oswego	126	2%
All other cities	184	3%

Source: Department of Labor

Eighty-five percent of certified visas were filed by companies in just three cities—Hillsboro, Portland, and Beaverton.

A small handful of large employers drive most of the demand for H-1B visas in the region. The top six employers in terms of certified visas represent half of the visas issued for Technology occupations in the Portland region.

THE COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE

work systems
The Portland Metro Workforce Development Board

workforce
SOUTHWEST WASHINGTON

Clackamas Workforce Partnership

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