Industry Overview

The information technology (IT) software and electronics cluster supports business activities in all other sectors of the economy with a variety of products and services, ranging from virus protection and other security programs for computers to electronics products and components. Technology and electronics industries are high-knowledge, human capital-based industries that are expanding globally and are expected to continue growing. The IT-software and electronics cluster includes companies involved in off-the-shelf software products, custom computer programming, computer facilities management, computer systems design, and data processing services. Additionally, businesses engaged in design, manufacture, wholesale, and repair of electronic equipment including computer peripheral equipment, semiconductors, electronic components, audio and video recording equipment, and magnetic and optical recording media are included. Companies in the IT-software and electronics industry also provide network solutions, web-based applications, and operating systems, in addition to manufacturing optical instruments and lenses, and navigational, measuring, electromedical, and control instruments.

The IT-software and electronics cluster in the Denver South region[1] expanded for the ninth-consecutive year in 2019, adding over 8,880 jobs since 2010. Between 2018 and 2019, employment in the IT-software and electronics cluster rose 5.4 percent, which was one-and-a-half times more than the U.S. growth rate of 3.4 percent. IT-software and electronics employment in the Denver South region is more than two times more concentrated than the U.S., with nearly 22,320 workers in approximately 1,130 companies. Over the past five years, employment in the region grew 32.3 percent, compared with the U.S. growth rate of 18.6 percent. Workers in this cluster also earned an average of $112,830, approximately double the average private-sector worker in the region. Nearly 24 percent of all IT-software and electronics employment in the nine-county Metro Denver and Northern Colorado region[2] is located in Denver South.

The Denver South region is a hub of innovation and entrepreneurial activity. CBRE named Denver the nation's 10th-largest tech market with tech companies leasing more than 2 million square feet in the region in 2018. According to JLL, Denver attracted highly skilled labor at the fastest rate in the country based on growth in the population 25 years and over with a bachelor's degree or higher. Denver ranked eighth out of the top 30 U.S. cities with the highest startup activity, according to MSN and Business.org named Denver the 10th-best city for entrepreneurs and startups. Denver ranked No. 9 and Boulder ranked No 14 among CompTIA's "Best Places for IT Pros to Live and Work" and Denver is among the top cities where companies are planning to expand their technology teams, according to Robert Half. Denver ranked among the top 10 metropolitan areas for high-growth

IT-Software & Electronics Facts - 2019

32.3%	Total growth between 2014-2019
5.4%	Employment growth between 2018-2019
22,320	Employees
6.5%	Employment concentration
9 Yrs.	Consecutive employment growth since 2010

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[1] The Denver South region consists of zip codes 80111, 80112, 80124, 80126, 80129, 80130, 80134, and 80237.
[2] The nine-county Metro Denver and Northern Colorado region consists of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, and Weld Counties.

company density, according to the Brookings Institution. According to CompTIA's *Cyberstates 2019* report, Metro Denver ranked as the No. 16 metro area in the U.S. for total tech jobs and No. 12 for most jobs added in the past year. The tech sector contributed $30.6 billion, or 15.4 percent to the region's economy. The Consumer Electronic Show scoreboard ranked Colorado first of states doing the most to promote innovation. Colorado received its highest ranking for entrepreneurial activity, receiving an A+.

Denver South is home to a wide array of IT-software and electronics companies. From data security and fraud prevention, to the design and manufacture of smart devices, companies in Denver South offer a range of IT-software and electronics products and services to individual and corporate consumers both locally and globally. Companies with major operations in the region include Arrow Electronics, IBM Corp., IHS Markit, Oracle, Zillow, Cognizant, Keysight Technologies, Inc., and others. In fact, Centennial is Zillow's second-largest employment hub outside of Seattle. Additionally, Arapahoe County-based Arrow Electronics was recognized as Colorado's top *Fortune 500* company. The company is the world's largest distributor of components and enterprise computing systems.

Companies in the Denver South region are using technology to improve products and solutions. For example, Denver Tech Center-based Waystar (formerly Recondo Technology) is developing software solutions to automate payments in the healthcare industry. The company's technology is currently being used by more than 900 hospitals, improving communication between providers, patients, and payers to improve revenue cycle efficiency. NICE Actimize is a leader in autonomous financial crime management technology. The company recently announced the launch of CDD-X, a Know Your Customer/Customer Due Diligence (KYC/CDD) solution designed to provide more accurate fraud detection and customer risk scoring. The technology reduces customer review times by 70 percent, exponentially reducing operational costs to companies.

The increasing number of startups and expanding companies in the Denver South region have led to significant venture capital and investments to accelerate growth. These entrepreneurs are also well supported by early-stage mentorship, accelerators, and industry expertise. Rockies Venture Club (RVC) is growing its local presence to launch a chapter of the statewide angel investor network in the Denver South region. RVC has over 215 investor members and invests in 20 to 25 companies annually across Colorado. Several trends including more out-of-state venture capital coming into the area and more firms located outside Colorado are opening satellite offices along the Front Range. In 2019, 19 IT-software companies in the greater Metro Denver region received $175 million in venture capital investments, the second-highest year since 2005.

The Denver South region also provides a strong supply pipeline to support the IT-software and electronics workforce with several coding schools, coding bootcamps, and programs. Greenwood Village's Skill Distillery is a 16-week coding school and software bootcamp aimed at training web developers and software programmers. Nearby, Denver's Turing School of Software & Design is a seven-month, full-time program for people who want to become professional developers and General Assembly's Denver campus offers web development and user experience design, business fundamentals, digital marketing, data science, and product management. Additionally, Galvanize offers full-time and part-time bootcamps, in addition to online preparation courses and partnerships in multiple disciplines. Bootcamps cover full-stack JavaScript including AngulaJS, Node.js, Express.js, Python, SQL, and Hadoop, among others.

Several incubators, accelerators, and coworking spaces in the Denver South region support the IT-software and electronics cluster and support cross-industry collaboration. Existing coworking options include Enterprise Coworking and Serendipity Labs in Greenwood Village. Thrive Workplace Centennial signed a lease to operate 22,000 square feet of coworking space at 9200 E. Mineral Ave. The organization plans to open at least one more space in the Denver South region. Rally Workspace in Highlands Ranch offers collaborative-style coworking options to freelancers, small businesses, satellite workers, and other professionals. Denver South region is in close

proximity to super connectors such as TechStars, Foundry Group, Access Ventures, and others support growing capital investment and startup activity in the region.

2019 Industry Highlights

Notable company announcements and expansions in the Denver South region included:

- Centennial-based Arrow Electronics celebrated the opening of its new Open Lab, an innovation center where the public and private sector can develop and test smart technologies before deploying them. Arrow Electronics joined the Smart Cities Alliance in 2017, as an advisor for the group, in order to assist municipalities in making their cities smarter. Arrow employees will be on-site in the lab to help assist in development and testing.
- Pax8, a cloud distribution technology company, will expand its business in Colorado and create 1,800 new jobs. The company, based in Greenwood Village, plans to add sales, partner support, engineering, and human resources positions over the next eight years.
- Zoom Video Communications, which makes video and audio conferencing software for businesses, is expanding its Denver Tech Center office. The company, which currently employs about 300 people, expects to double its headcount within two years. Staff work in a variety of roles, including human resources, finance, marketing, and legal.
- Denver Tech Center-based Quisitive Technology Solutions Inc. announced its status as a Microsoft Government Cloud Provider for Azure Government. With this designation, Quisitive is certified to sell, service, and support the Azure Government cloud platform at federal, state, municipal, and tribal governments.
- Arrow Electronics and Freelancer.com launched the world's largest electronics and electrical engineering services marketplace, revolutionizing how hardware products are designed and manufactured. The new platform ArrowPlus allows *Fortune* 500 companies and innovative technology creators to design and build hardware products through access to over half a million skilled electronic and electrical engineers.
-

Companies in the Denver South region's IT-software and electronics cluster received significant venture capital and investments to accelerate growth and expand product offerings.

- Centennial-based BillingPlatform raised $10 million in Series B funding. The money will be used to continue product development, customer success programs, and go-to-market efforts.
- Engrain, a real estate-tech firm specializing in interactive mapping technology, raised $1 million in seed funding and is pursuing between $5 million and $10 million in Series A funding with plans to hire more people in their Denver Tech Center office. The company currently employs 65 people in the area and is expecting to expand their software capabilities to retail markets and emergency dispatch services.
- Douglas County-based CSG International invested $1.9 million to restructure and improve efficiencies within the company. The restructuring program is aimed at improving productivity, while reducing complexities around how CSG manages their business.
-

IT-software and electronics companies in the Denver South region announced several mergers and acquisitions in 2019.

- Navint Partners, a consulting and technology firm that helps recurring revenue companies drive growth and operational efficiency, acquired Greenwood Village-based Statêra. The deal is designed to bring

together advisory and process innovation with deep Salesforce CPQ (Configure, Price, Quote) & Billing implementation capability to help clients modernize their lead-to-revenue operations.

- Denver-based Recondo Technology was acquired by Louisville, KY-based Waystar. The two companies' goals and technologies complement one another, making the acquisition advantageous. Recondo brings additional artificial intelligence and machine learning technologies to Waystar's broad portfolio of solutions.

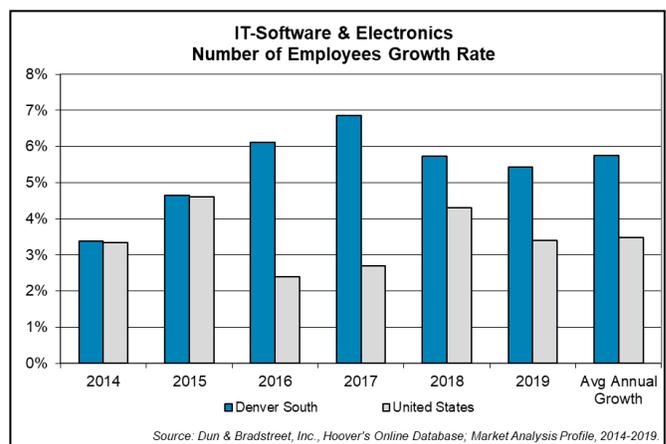Several companies in the Denver South region received notable awards and honors in 2019:

- Douglas County-based software provider Evolving Systems Inc. and its client Orange Belgium won the prestigious Customer Experience prize at the 21st Annual World Communication Awards. The award is one of the most revered marks of achievement in the industry.
- Arrow Electronics made *Fortune*'s annual list of the "World's Most Admired Companies." The company ranked first in the category of "Wholesalers: Electronics and Office Equipment."
- Centennial-based Fast Enterprises was named to numerous company lists in 2019. *Fortune* named the company to its 2019 "Best Workplaces for Millennials" list and *Workforce* 100 ranked the company among its 2019 Workforce 100 list in the human resources-related area.
- Quisitive Technology Solutions Inc. won the 2019 Microsoft Country Partner of the Year Award for the United States. The company was honored among a global field of top Microsoft partners for demonstrating excellence in innovation and implementation of customer solutions based on Microsoft technology.
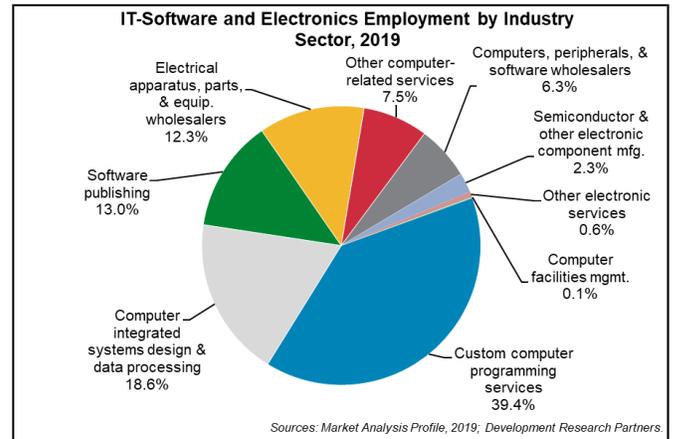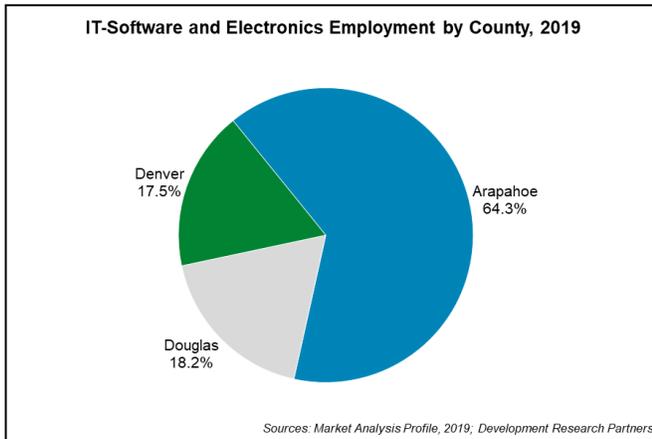
IT-Software and Electronics Economic Profile

The IT-software and electronics cluster consists of 27, six-digit North American Industry Classification System (NAICS) codes including software reproduction, software publishers, custom computer programming, data processing and hosting, computer facilities management services, computer systems design services, design, manufacture, wholesale, and repair of electronic equipment such as computer peripheral equipment, semiconductors, electronic components, and magnetic and optical recording media manufacturing. Electronics repair shops and electronics stores are also included.

IT Software & Electronics Employment and Company Profile, 2019	Denver South	United States
Direct employment, 2019	22,320	5,005,890
Number of direct companies, 2019	1,130	342,990
One-year direct employment growth, 2018-2019	5.4%	3.4%
Five-year direct employment growth, 2014-2019	32.3%	18.6%
Avg. annual direct employment growth, 2014-2019	5.8%	3.5%
Direct employment concentration	6.5%	3.0%

Sources: Dun & Bradstreet, Inc., Hoover's Online Database; Market Analysis Profile, 2014-2019; Development Research Partners.

Source: Dun & Bradstreet, Inc., Hoover's Online Database; Market Analysis Profile, 2014-2019.

IT-Software and Electronics Employment by County, 2019

- Arapahoe 64.3%
- Denver 17.5%
- Douglas 18.2%

Sources: Market Analysis Profile, 2019; Development Research Partners.

IT-Software and Electronics Employment by Industry Sector, 2019

- Electrical apparatus, parts, & equip. wholesalers 12.3%
- Other computer-related services 7.5%
- Computers, peripherals, & software wholesalers 6.3%
- Semiconductor & other electronic component mfg. 2.3%
- Software publishing 13.0%
- Other electronic services 0.6%
- Computer facilities mgmt. 0.1%
- Computer integrated systems design & data processing 18.6%
- Custom computer programming services 39.4%

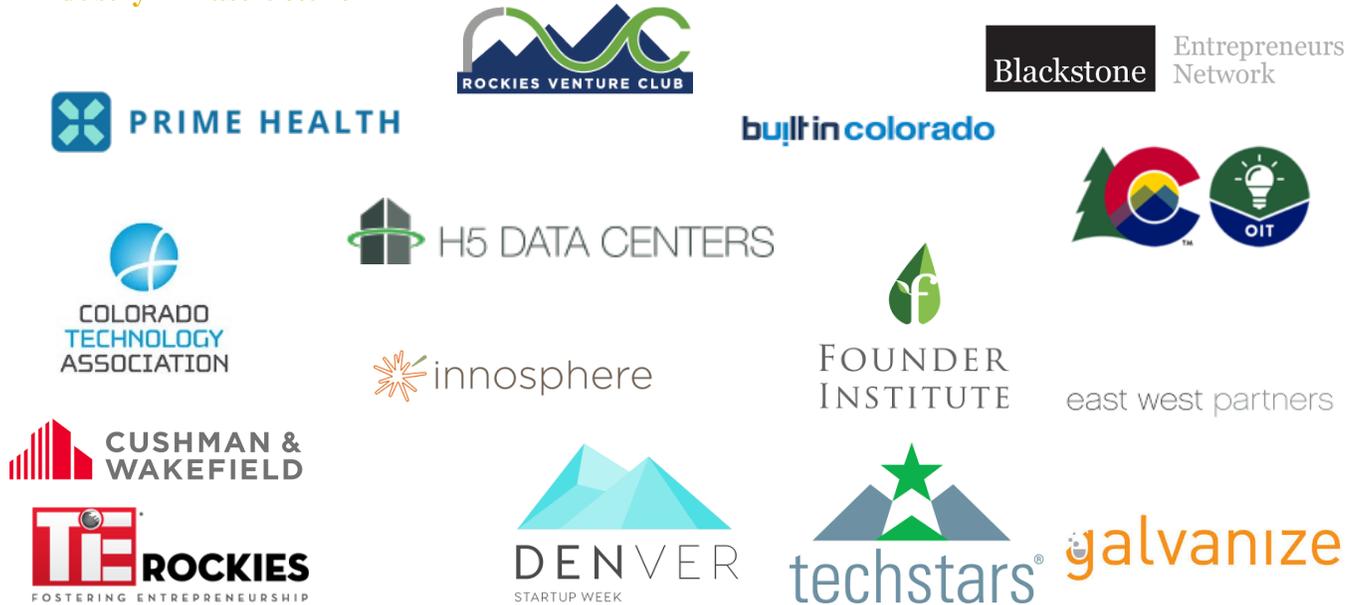Sources: Market Analysis Profile, 2019; Development Research Partners.

Major IT-Software and Electronics Companies

- Arrow Electronics
  www.arrow.com
- Beeline
  www.beeline.com
- Businessolver
  www.businessolver.com
- Cisco Systems, Inc.
  www.cisco.com
- Cognizant
  www.cognizant.com
- CSG International
  www.csgi.com
- Fast Enterprises
  www.fastenterprises.com
- Flexential
  www.flexential.com
- IBM Corp.
  www.ibm.com
- IHS Markit
  www.ihsmarkit.com
- Keysight Technologies Inc.
  www.keysight.com
- Microsoft Corp.
  www.microsoft.com
- NICE Actimize
  www.niceactimize.com

- Oracle Corporation
  www.oracle.com
- Pax8
  www.pax8.com
- QC Data LLC
  www.qcdata.com
- SAP
  www.sap.com
- Sapiens International
  www.sapiens.com
- Statêra, Inc.
  www.statera.com
- Tata Consultancy
  www.tcs.com
- Travelport
  www.travelport.com
- Trustwave
  www.trustwave.com
- Waystar (formerly Recondo Technology)
  www.waystar.com
- Zillow Group Inc.
  www.zillow.com
- Zoom Video Communications
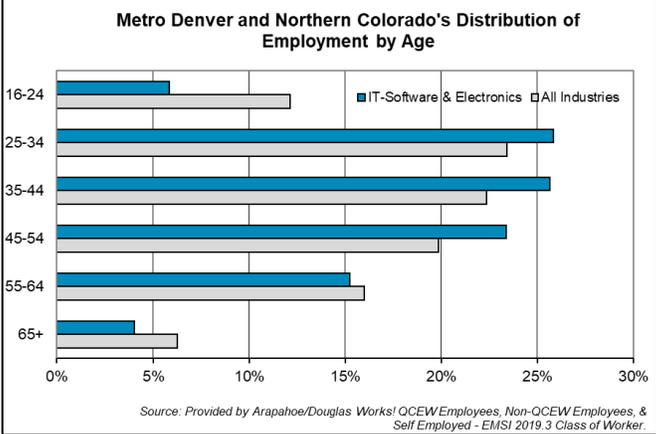 www.zoom.us

Industry Infrastructure

IT-Software and Electronics Workforce Profile

With 62.5 percent of the adult population having a bachelor's degree or higher, the Denver South region provides a highly educated labor base with industry specific skills and talent. The region also has a high concentration of IT-software and electronics talent. According to *Cyberstates*, IT services and custom software services, and packaged software development were among Metro Denver's top-five leading tech industry sectors by employment in 2019. Additionally, the Denver-Aurora-Lakewood metropolitan statistical area (MSA) had the highest employment levels among the top 10 MSAs in the nation in 2019 for electronics engineers (except computer) and electrical and electronics repairers. Several nearby programs are highly ranked for IT-software and electronics. The University of Colorado Boulder's computer engineering and electrical engineering graduate programs ranked among the top 20 nationally by *U.S. News & World Report*'s Graduate Program Rankings 2021.

Age Distribution

Compared with the age distribution across all industries in the region (65.6 percent), the cluster has a larger share of employees that are between the ages of 25 and 54 years old (74.9 percent). The largest age group in the region are between the ages of 25 and 34 years old.

Metro Denver & Northern Colorado's Educational Programs with Largest Number of IT-Software & Electronics-related Graduates
- Accounting
- Business Administration & Management, General
- Business/Commerce, General
- Computer & Information Sciences, General
- Computer Science
- Computer Systems Networking & Telecommunications
- Finance, General
- Information Technology
- Management Information Systems, General
- Marketing/Marketing Management, General

Metro Denver and Northern Colorado's Distribution of Employment by Age

Source: Provided by Arapahoe/Douglas Works! QCEW Employees, Non-QCEW Employees, & Self Employed - EMSI 2019.3 Class of Worker.

Wages

The 2018 average annual salary for workers in the IT-software and electronics cluster was $112,830 in the nine-county region, compared with the national average of $117,320. Total payroll reached over $9.9 billion in 2018.

Occupation & Salary Profile

The Occupation & Salary Profile below includes the 10 largest IT-software/electronics occupations in the region. For these 10 largest occupations, the chart details the total number of workers employed in that occupation across all industries, the number of available applicants that would like to be working in that occupation, the number of recent graduates that are qualified for that occupation, and the median and sample percentile annual salaries.

Metro Denver and Northern Colorado IT-Software & Electronics Occupation & Salary Profile, 2019

10 Largest IT-Software & Electronics Occupations in Metro Denver and Northern Colorado	Total Working Across All Industries (2019)	Number of Available Applicants (2019)	Number of Graduates (2018)	Median Salary	10th Percentile Salary	25th Percentile Salary	75th Percentile Salary	90th Percentile Salary
1. Software developers, applications	27,310	720	1,368	$104,774	$62,917	$81,992	$130,715	$157,967
2. Computer occupations, all other	14,232	375	1,490	$101,491	$57,989	$76,445	$126,349	$153,949
3. Computer user support specialists	13,354	369	1,114	$57,828	$36,187	$45,023	$75,242	$96,500
4. Sales representatives, services, all other	26,169	690	17	$60,245	$28,140	$40,735	$91,120	$137,063
5. Software developers, systems software	9,079	240	1,511	$117,148	$79,219	$94,253	$145,575	$177,703
6. Sales representatives, wholesale & mfg. except technical & scientific products	4,906	135	7	$86,449	$44,118	$60,349	$123,699	$161,447
7. Computer systems analysts	7,977	220	1,533	$93,020	$58,357	$72,582	$116,676	$138,308
8. Retail salespersons	62,292	1,710	13	$25,508	$21,311	$22,875	$31,956	$46,607
9. Customer service representatives	35,851	946	0	$35,784	$23,673	$28,138	$46,314	$59,133
10. Network & computer systems administrators	9,179	242	662	$83,602	$53,380	$66,941	$104,466	$125,602

Notes: The number of available applicants is a point-in-time measurement of the number of people who have registered in Colorado's workforce development system's statewide database, Connecting Colorado, as being able and available to work in a particular occupation. Results should be interpreted with caution since registration in Connecting Colorado is self-reported. In addition, the skills rubric may assign up to four occupation codes for each registrant. Therefore, the number of available applicants could be inflated. *Source: Provided by Arapahoe/Douglas Works!; QCEW Employees, Non-QCEW Employees, & Self Employed - EMSI 2019.3 Class of Worker.*

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