Occupations in Information Technology

American Community Survey Reports

By Julia Beckhusen
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INTRODUCTION

The number of men and women in computer occupations, informally known as information technology (IT) occupations, rose from 450,000 in 1970 to 4.6 million in 2014 (Figure 1). The increase of IT workers reflects the growth in computer use at home and at the workplace since the introduction of the personal computer in the mid-1970s. Between 1976 and 1984, the number of personal computer sales increased from 40,000 to over 6 million (Reimer, 2005). In 1984, 8.2 percent of households had a computer (File, 2013). This number has increased steadily to 85.0 percent in 2014.[1]

IT occupations span a number of professions, from computer research scientists and programmers to Web developers and computer support specialists. The U.S. Census Bureau first classified IT occupations in 1970. The initial 3 occupation categories grew to 12 by 2010 (Table 1).[2] The expansion in categories reflects the increase in employment in these occupations since 1970. The Bureau of Labor Statistics (BLS) projects that employment in computer and mathematical occupations will increase by 18.0 percent between 2012 and 2022 (Richards, 2013). Only 4 of the total 22 occupation groups were projected to grow faster.

This report explores the history of IT occupations between 1970 and 2014, focusing on the growth and evolution of IT occupations. The analysis includes estimates from the 1970, 1980, 1990, and 2000 censuses, and the 2010 and 2014 American Community Surveys (ACS). Additionally, this report provides a detailed description of demographic and employment characteristics of workers in the 12 IT occupations in 2014.

IT OCCUPATIONS SINCE 1970

The Census Bureau first identified IT occupations in the 1970 census. In that year, 450,000 IT workers made up 0.6 percent of the labor force (Figure 1). In these early years, computers were large, expensive mainframes mostly used by governments, research laboratories, and manufacturing firms. The market for personal computers used in businesses and at home developed in the mid-1970s (Ceruzzi, 2010). The number of personal computer sales grew from around 40,000 in 1976 to over 1 million in 1980 (Reimer, 2005). As the market expanded, so did the demand for IT workers—as evidenced by the 74.0 percent increase to 781,000 workers in 1980 (0.8 percent of the labor force).

Between the mid-1970s and 1990, the computer quickly moved from a specialty device to a commonplace machine in homes and businesses alike (Ceruzzi, 2010). By 1990, annual personal computer sales had

[1] Data on household computer use obtained from American FactFinder table DP02. In DP02, computer is defined as a desktop, laptop, handheld computer, or other computer (e.g., tablet). File (2013) uses data from the 1984 Current Population Survey, which defined computers as having "typewriter-like keyboards" and excluded "handheld computers" (Kominski, 1988).

[2] The Census Bureau has based its occupation code lists on the Standard Occupational Classification (SOC) Manual since the manual was implemented in 1980. The SOC manual is available at <www.bls.gov/soc>. Between 1850, when it first collected occupation data, and 1980, the Census Bureau had created and maintained its own occupation classification.

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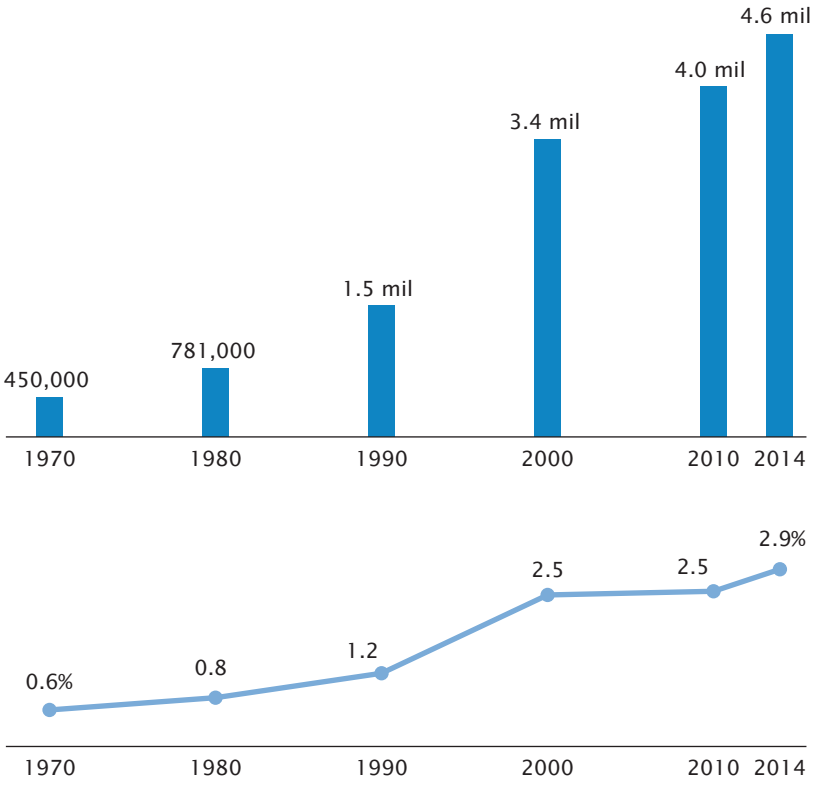
reached nearly 20 million units (up from 6 million in 1984). Technology firms took advantage of the growing market by developing new hardware and software (Reimer, 2005). The demand for IT workers grew steadily, and in 1990, they amounted to 1.5 million workers (1.2 percent of the labor force) (Figure 1).

The technology boom of the 1990s led to a steep increase in IT workers. The number of IT workers more than doubled to 3.4 million between 1990 and 2000 (2.5 percent of the labor force) (Figure 1). Careers involving computers expanded into new areas. In 2000, the Census Bureau expanded the number of IT occupations to eight. After the steep rise at the end of the 20th century, the technology bubble burst in 2000, causing the demand for IT workers to increase at a slower pace than in previous decades. When the Census Bureau updated its classification of occupations in 2010, the number of IT occupations rose from 8 to 12 categories. By 2014, 4.6 million IT workers accounted for 2.9 percent of the labor force (Figure 1).

Figure 1.
Information Technology (IT) Workers, Total and Percentage of Civilian Labor Force: 1970 to 2014[1]
(Civilian labor force, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*



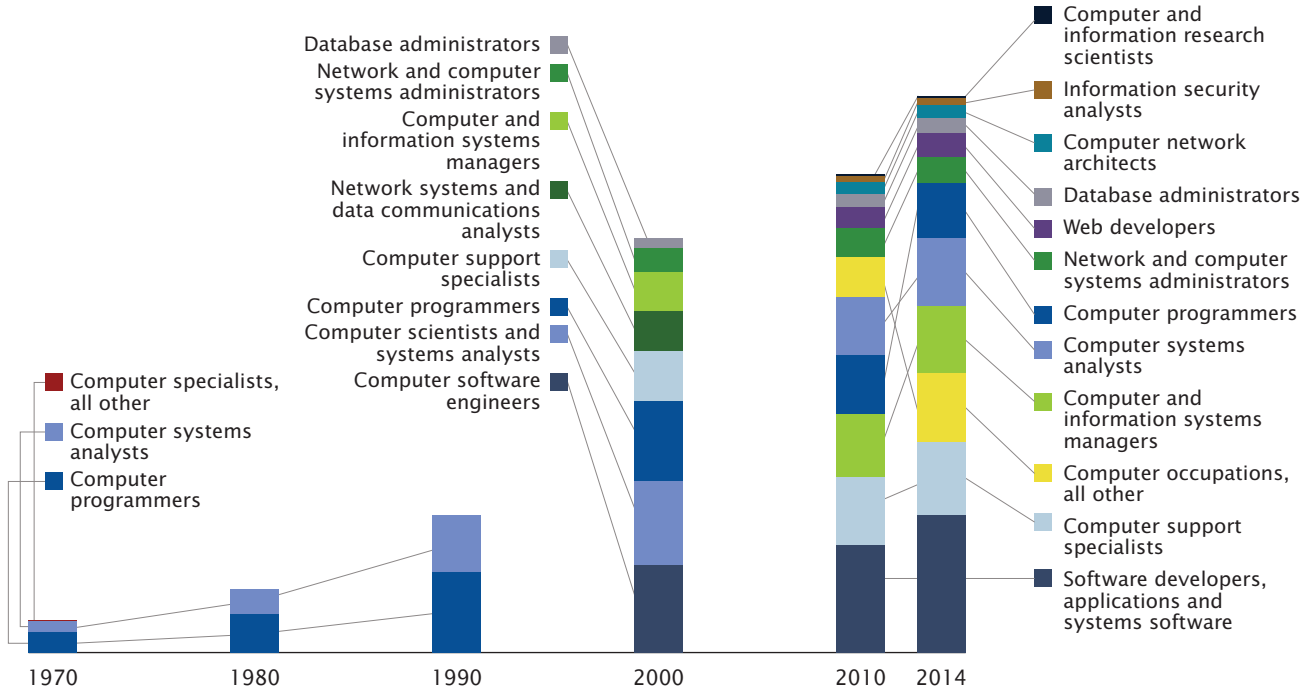
[1] The data for IT workers from 1970 to 2000 were converted to the 2010 Census Occupation Code List to make them comparable across time.

Source: U.S. Census Bureau, Equal Employment Opportunity Supplementary Reports from the 1970, 1980, 1990, 2000 censuses and 2010 and 2014 American Community Surveys.

Figure 2.

Growth of Detailed Information Technology (IT) Occupations: 1970 to 2014

(Civilian labor force, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*



Source: U.S. Census Bureau, Equal Employment Opportunity Supplementary Reports from the 1970, 1980, 1990, 2000 censuses and 2010 and 2014 American Community Surveys.

Comparing IT occupations over time

Between 1970 and the present, the growth and variety of computers and the Internet are reflected in the evolution of IT occupation classifications. The Census Bureau classified 3 IT occupations in 1970 and 12 in 2010 (Figure 2).[3] During this period, many IT occupations were "born," but a few also "evolved" into new occupations. For example, between 1990 and 2000, the occupation computer support specialists was "born," while the occupation computer systems analysts and scientists "evolved" and split into eight new occupations. Each new classification system captured the changes to IT occupations. The Census Bureau updates its occupation code list every 10 years and any occupation data released uses the most recent list.[4]

From one occupational classification system to the next, IT occupations split, merged, or remained the same (Figure 4). In addition, some non-IT occupations split into IT occupations. These changes created occupation categories that had limited comparability between survey years. For example, three IT occupations reduced to two in 1980. The 1980 classification system merged computer specialists, all other with computer systems analysts. This merge makes decennial census data on computer systems analysts incomparable between 1970 and 1980 without extra work (adding the number of computer specialists, all other with the number computer systems analysts in 1970 creates a comparable number to the number of computer systems analysts in 1980). The change in IT occupations between 1970 and 1980 was simple relative to changes in later years—e.g., between 1990 and 2000, two detailed IT occupations split into eight. Figure 4 displays the complexity of changes between classification systems.[5]

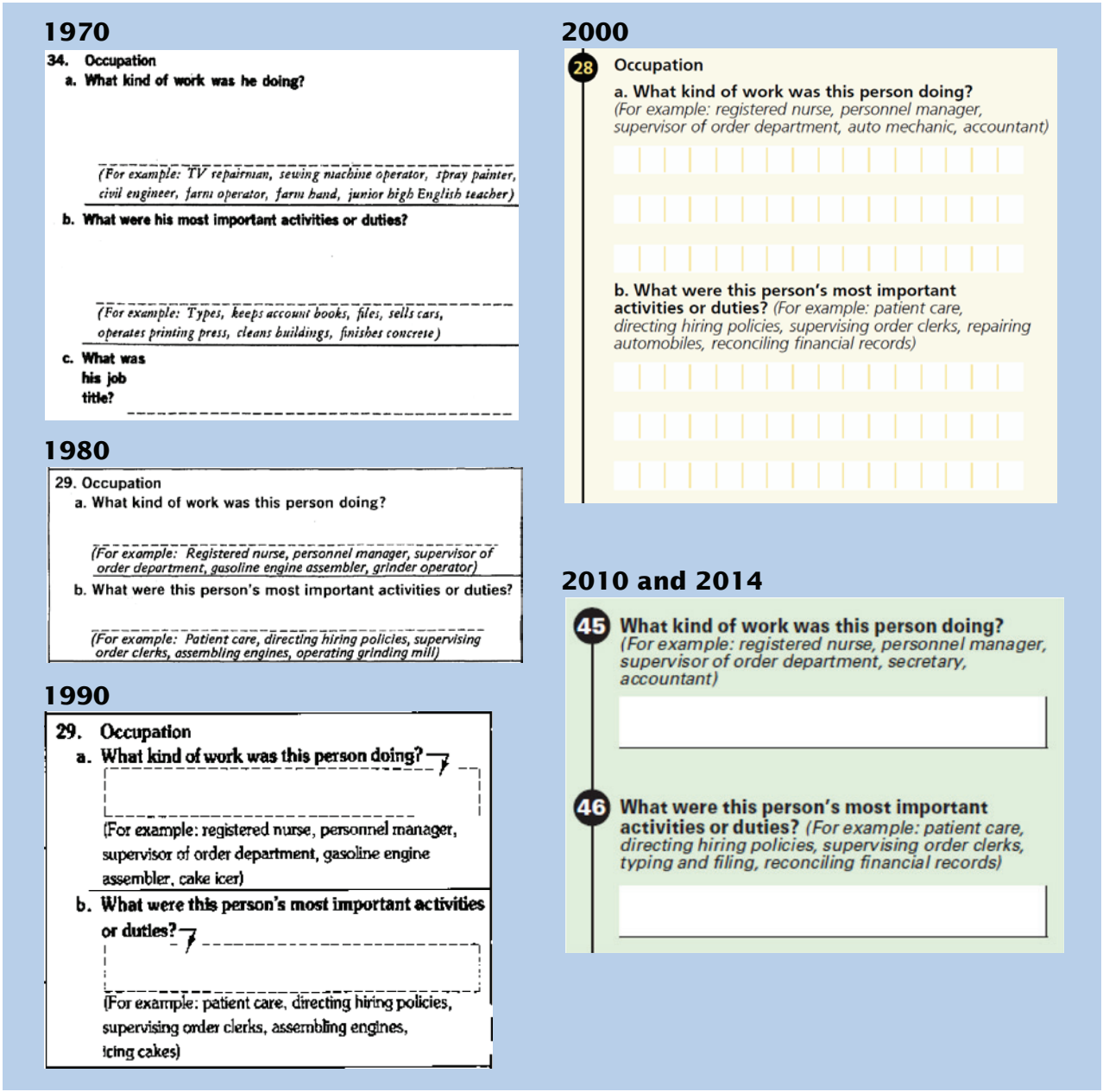
[3] Although respondents from each survey answered similar questions regarding their occupation (see Figure 3), the occupation code their answers generated depended on the classification system used in that survey. For more information on how write-in responses are coded, see <www.census.gov /people/io/about/occupation.html>.

[4] Occupation data from the ACS, between 2005 and 2009, used the 2000 Census Occupation Code List. Starting in 2010, data from the ACS use the 2010 Census Occupation Code List.

[5] These complex changes are not specific to IT occupations. Most occupations have undergone some sort of change since their "birth" in the classification system.

Figure 3.

Write-In Questions on Occupation From the 1970, 1980, 1990, and 2000 Decennial Census Long Form and the 2010/2014 American Community Survey



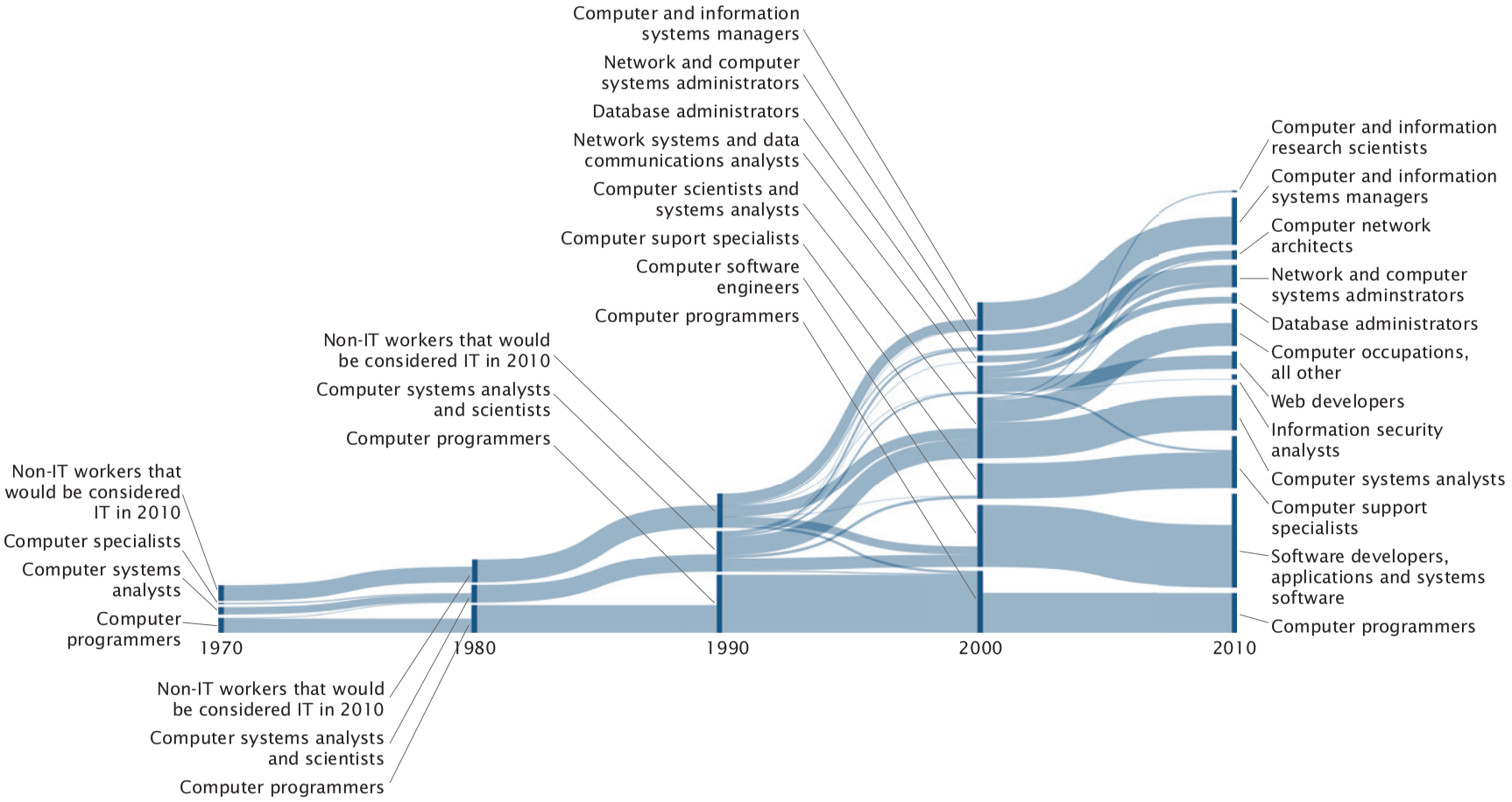
In order to compare data on IT occupations between survey years, the older occupation coding systems must be converted to the newer system. For occupations that changed, a conversion rate (supplied by the Census Bureau) is applied.[6] Figure 4 shows the conversions for IT occupations between classification systems. For example, between 2000 and 2010, the 2000 occupation code of network systems and data communications analysts split into five new occupations. The conversions show that nearly half of the 2000 occupation became Web developers and about one-quarter became computer network architects. Two percent of another 2000 code, computer scientists and systems analysts, also became computer network

[6] More information on conversion rates—how they are created and how they should be applied—can be found in various technical papers, see <www.census.gov/people/io/publications/technical_papers.html>.

Figure 4.

The Growth and Increasing Complexity of Information Technology (IT) Occupations: 1970 to 2010

(Civilian labor force, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2010.pdf)*

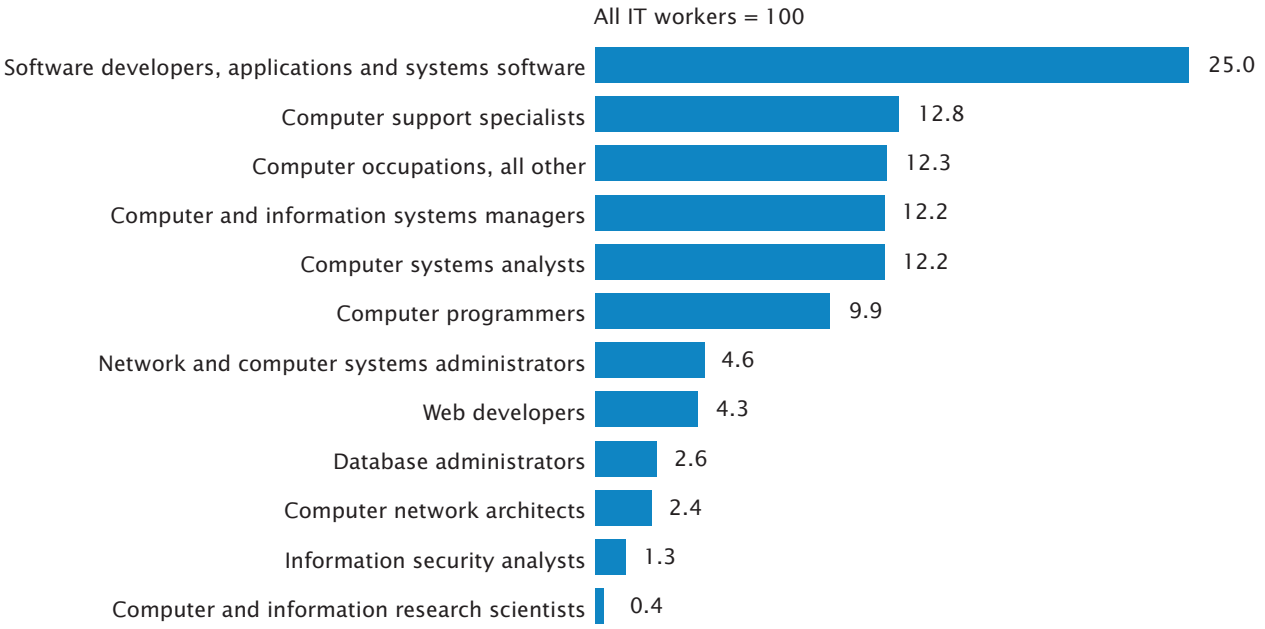


Source: U.S. Census Bureau, Equal Employment Opportunity Supplementary Reports from the 1970, 1980, 1990, 2000 censuses and 2010 American Community Survey.

Figure 5.

Distribution of Information Technology (IT) Workers Among Detailed Occupations: 2014

(In percent. Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf*)



Source: U.S. Census Bureau, 2014 American Community Survey.

architects in 2010.[7] The complexity of changes between the 2000 and 2010 classification systems make comparing data on certain occupations an intricate task. The data for IT workers in Figures 1 and 7 were converted to the 2010 Census Occupation Code List to make them comparable across time.

CHARACTERISTICS OF IT WORKERS IN 2014

The evolution of IT occupation classifications indicates how diverse this job area has become. IT occupations no longer focus on simply the hardware and software of the machines, but also the infrastructure of networks and the development and maintenance of the Internet and World Wide Web (BLS, 2010) (see Table 1). Exploring the characteristics of these workers brings to light the varying duties, skillsets, and earnings of these occupations.

In 2014, over three-quarters of employed IT workers were concentrated in half of the detailed occupations (Figure 5). Software developers, applications and system software was the largest computer occupation with 1.1 million workers (25 percent of IT workers). The next two largest groups of IT workers were computer support specialists and computer occupations, all other, at 12.8 percent and 12.3 percent, respectively.[8] Computer and information research scientists was the smallest IT occupation, with 15,580 workers (0.35 percent of all IT workers).

[7] In order to compare the number of computer network architects between 2000 and 2010, the number of computer network architects in 2000 would need to be computed. This is done by multiplying the number of network systems and data communications analysts in 2000 by 0.26 and the number of computer scientists and systems analysts by 0.02. Adding those together provides the number of computer network architects in 2000, which can then be compared with the 2010 number.

[8] The percentage of computer support specialists (12.8 percent) is significantly higher than the percentage of computer occupations, all other (12.3 percent). However, the percentage of computer occupations, all other is not significantly different from the percentage of computer and information systems managers (12.2 percent) or computer systems analysts (12.2 percent).

Table 1.

Descriptions of the 12 Distinct Census Information Technology Occupations

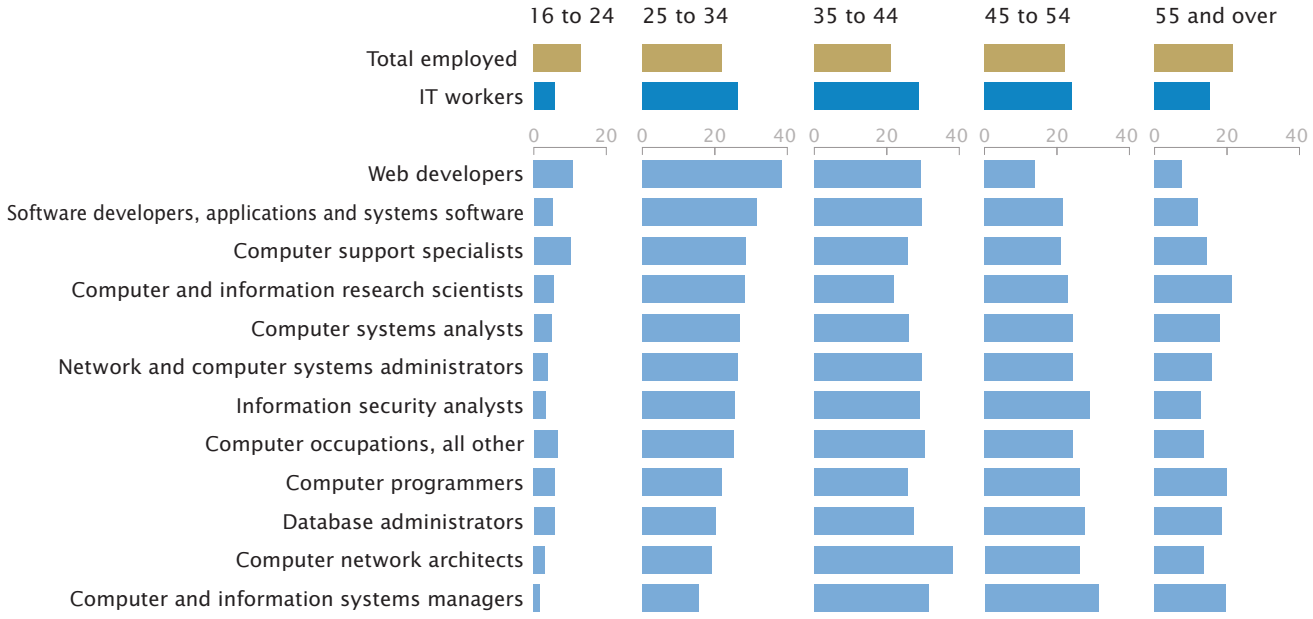
(Adapted from the 2010 Standard Occupational Classification Manual available at *www.bls.gov/soc*)

Occupation	Description	Illustrative example
Computer and information systems managers	Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.	Chief Technology Officer, Information Technology Systems Director, Management Information Systems Director
Computer and Information research scientists	Conduct research into fundamental computer and information science as theorists, designers, or inventors. Develop solutions to problems in the field of computer hardware and software.	Programming Methodology and Languages Researcher, Control System Computer Scientist, Computational Theory Scientist
Computer systems analysts	Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.	Systems Architect, Information Systems Analyst, Applications Analyst, Data Processing Systems Analyst
Information security analysts	Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.	Computer Security Specialist, Network Security Analyst, Internet Security Specialist
Computer programmers	Create, modify, and test the code, forms, and script that allow computer applications to run. Work from specifications drawn up by software developers or other individuals. May assist software developers by analyzing user needs and designing software solutions. May develop and write computer programs to store, locate, and retrieve specific documents, data, and information.	Systems Programmer, Computer Language Coder, Applications Programmer
Software developers, applications and systems software	Research, design, develop, and test computer applications software and operating systems-level software. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency.	Computer Applications Engineer, Database Developer, Software Applications Engineer, Embedded Systems Software Developer, Computer Systems Software Architect
Web developers	Design, create, and modify Web sites. Analyze user needs to implement Web site content, graphics, performance, and capacity. May integrate Web sites with other computer applications. May convert written, graphic, audio, and video components to compatible Web formats by using software designed to facilitate the creation of Web and multimedia content.	Web Designer, Internet Developer, Intranet Developer
Computer support specialists	Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person or via telephone, or electronically. Analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system.	Desktop Support Specialist, Help Desk Technician, End-User Support Specialist, Network Technician, Network Diagnostic Support Specialist
Database administrators	Administer, test, and implement computer databases, applying knowledge of database management systems. Coordinate changes to computer databases. May plan, coordinate, and implement security measures to safeguard computer databases.	Database Security Administrator, Database Management System Specialist
Network and computer systems administrators	Install, configure, and support an organization's LAN, WAN, and Internet systems or a segment of a network system. Monitor network to ensure network availability to all system users and may perform necessary maintenance to support network availability. May monitor and test Web site performance to ensure Web sites operate correctly and without interruption. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software.	Wide Area Network Administrator, Network Security Administrator, Network Coordinator
Computer network architects	Design and implement computer and information networks, such as LAN, WAN, intranets, extranets, and other data communications networks. Perform network modeling, analysis, and planning. May also design network and computer security measures. May research and recommend network and data communications hardware and software.	Network Developer, Network Designer, Computer Network Engineer
Computer occupations, all other	All computer occupations not listed separately.	Computer Laboratory Technician

Figure 6.

Distribution of Information Technology (IT) Workers by Age: 2014

(In percent. Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*



Source: U.S. Census Bureau, 2014 American Community Survey.

Demographics and Employment

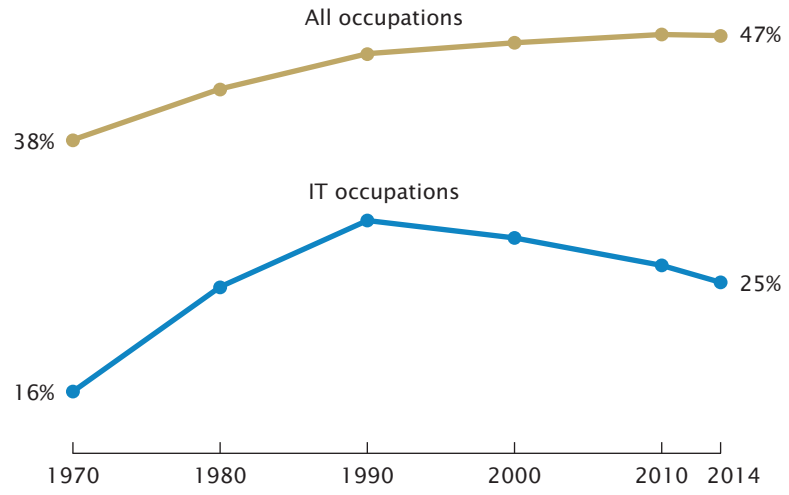
IT workers are more concentrated between ages 25 and 44 compared with all workers (Figure 6). Over half of employed IT workers fall within this age range, with 26.0 percent between ages 25 and 34, and 29.0 percent between ages 35 and 44. Across the detailed IT occupations, Web developers were some of the youngest with 38.0 percent between ages 25 and 34, and 11.0 percent between ages 16 to 24.[9] Among the next youngest were computer support specialists and software developers, applications and system software. Computer and information research scientists, computer programmers, and computer and information systems managers were some of the oldest IT workers, with around 20 percent over 54 years. These age distributions follow the age of the occupations. The more established IT occupations tend to have a larger share of workers over age 55 (see Figure 2)—computer and information research scientists, computer

[9] The percentage of Web developers between the ages of 16 and 24 is not statistically different than the percentage of computer support specialists in the same age group.

Figure 7.

Percentage of Women in Information Technology (IT) Occupations and All Occupations: 1970 to 2014[1]

(U.S. civilian labor force, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*



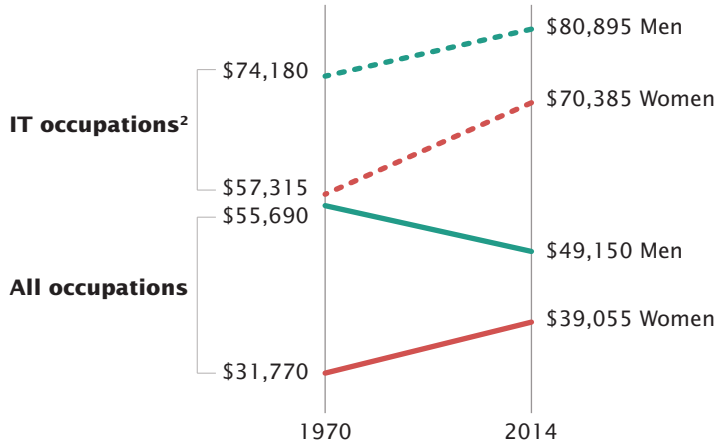
[1] The data for IT workers from 1970 to 2000 were converted to the 2010 Census Occupation Code List to make them comparable across time.

Source: U.S. Census Bureau, Equal Employment Opportunity Supplementary Reports from the 1970, 1980, 1990, 2000 censuses and 2010 and 2014 American Community Surveys.

Figure 8.

Median Earnings for Full-Time, Year-Round Information Technology (IT) Workers in 2014 Inflation-Adjusted Dollars: 1970 and 2014

(Civilian employed, full-time[1], year-round, 16 years and over, with earnings. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*



[1] In 1970, full-time was defined as working 35 or more hours per week; in 2014, full-time was defined as working 34 or more hours per week.
[2] Nonmanagerial IT occupations.

Source: U.S. Census Bureau, 1970 Census of Population Subject Reports and 2014 American Community Survey.

systems analysts, and computer programmers.

Since the Census Bureau started classifying computer occupations, the majority of workers in IT have been men. Over the last 4 decades, the percentage of women in IT has consistently been lower than the percentage of women in all occupations (Figure 7). The proportion of women in all occupations has slowly increased over time, from 38.0 percent in 1970 to 47.0 percent in 2014. In contrast, the proportion of women in IT occupations has actually decreased from 31.0 percent in 1990 to 25.0 percent in 2014.

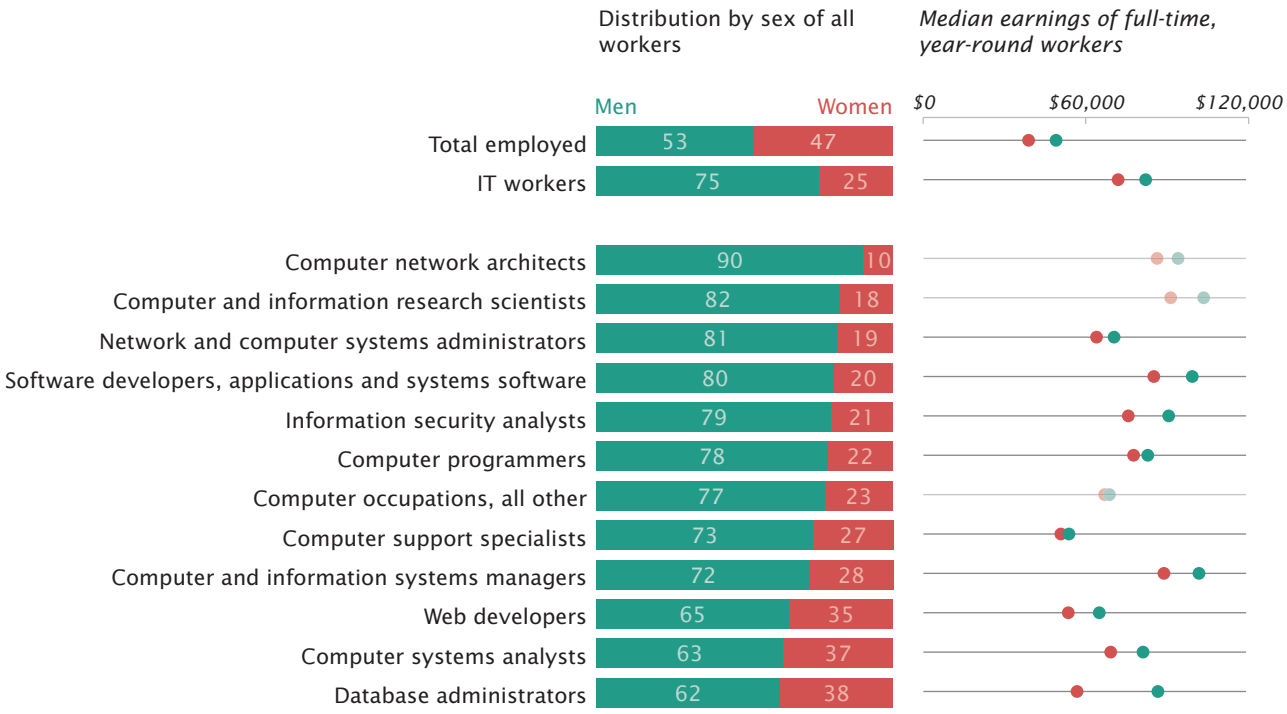
Following the disparity in the number of women in IT since 1970 are the historic median earnings of women in IT (Figure 8). In 1970, among full-time, year-round, nonmanagerial IT workers, men's median earnings were $74,180, compared with $57,315 for women.[10] However, IT men and women both earned more than men and women in all occupations. Between 1970 and 2014, median earnings increased for IT workers—for both men and women. This was in stark contrast to all workers, where the median earnings of men fell from $55,690 to $49,150, while

[10] The median earnings in 1970 have been converted to 2014 inflation-adjusted dollars.

Figure 9.

Distribution by Sex for All Information Technology (IT) Workers and Median Earnings, by Sex of Full-Time, Year-Round IT Workers: 2014[1]

(In percent. Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf*)



[1] A shaded line signifies that the median earnings for male and female are *not* statistically different at the 90 percent level.
Source: U.S. Census Bureau, 2014 American Community Survey.

the median earnings of women rose from $31,770 to $39,055.

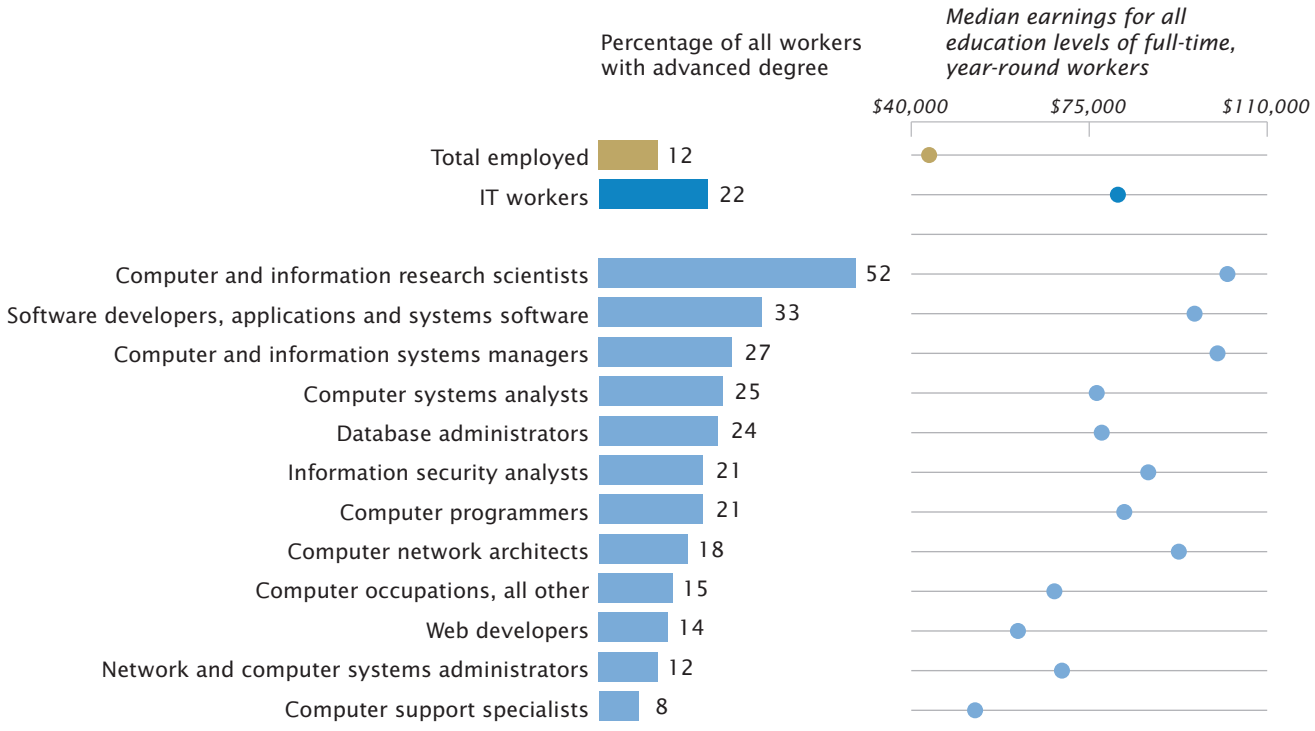
In 2014, even when broken out into the detailed occupations, men and women employed in IT still had higher median earnings than men and women in all occupations (Figure 9). However, a wage gap existed between employed men and women in a majority of the detailed IT occupations. Among the highest gaps was that of database administrators. Interestingly, this occupation had among the highest percentages of women among the detailed IT occupations. Other IT occupations with large wage gaps included software developers, applications and system software, and information security analysts.

The highest earning IT occupations in 2014 were computer and information research scientists, software developers, applications and system software, computer and information systems managers, and computer network architects, each

Figure 10.

Percentage of All Information Technology (IT) Workers With an Advanced Degree[1] and Median Earnings of Full-Time, Year-Round IT Workers: 2014

(Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*



[1] An advanced degree is defined as having at least a Master's degree.

Source: U.S. Census Bureau, 2014 American Community Survey.

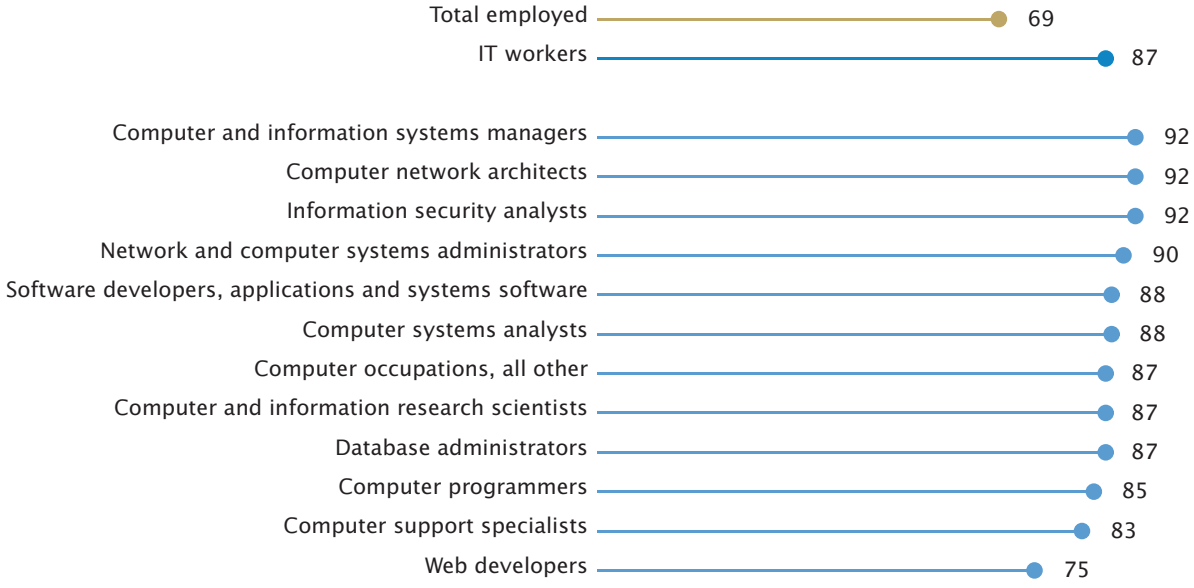
with median earnings of $90,000 or more (Figure 10). Not surprisingly, workers in these occupations also had high percentages of advanced degrees. For instance, 52.0 percent of computer and information research scientists had at least a Master's degree. In contrast, workers in detailed IT occupations who earned less were also less likely to have had an advanced degree. Less than 10 percent of computer support specialists had an advanced degree and they were among the lowest earners in IT at $52,550.

IT workers had a higher percentage of full-time, year-round workers (87.0 percent) than the total employed (69.0 percent) (Figure 11). This high rate persisted even when looking at detailed IT occupations. Computer information systems managers, computer network architects, and information security analysts had among the highest rates. Web developers and computer support specialists had among the lowest rates of

Figure 11.

Percentage of Full-Time, Year-Round Information Technology (IT) Workers: 2014

(Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*



Source: U.S. Census Bureau, 2014 American Community Survey.

full-time, year-round workers, 75.0 and 83.0 percent, respectively.

The type of work and place of work were also unique for IT workers. In 2014, they were more likely to work in a private company and less likely to work for the government or own their own business. IT workers were twice as likely to work at home.[11] Web developers stood out among other IT workers regarding self-employment and home-based work (Figure 12). Compared with 5.0 percent of IT workers, 21.0 percent of Web developers were self-employed, among the highest rates of self-employment among the detailed IT occupations. Computer systems analysts and computer programmers also had high rates of self-employment. Furthermore, Web developers worked at home at a higher rate (20.4 percent) than the average IT worker (9.6 percent), as well as other workers in detailed IT occupations. Research indicates that, in 2010, nearly half of all home-based workers were self-employed (Mateyka et al., 2012). Not surprisingly, other detailed IT occupations with higher rates of self-employment also had high rates of working at home, namely computer systems analysts and computer programmers.

Race, Hispanic Origin, and Place of Birth

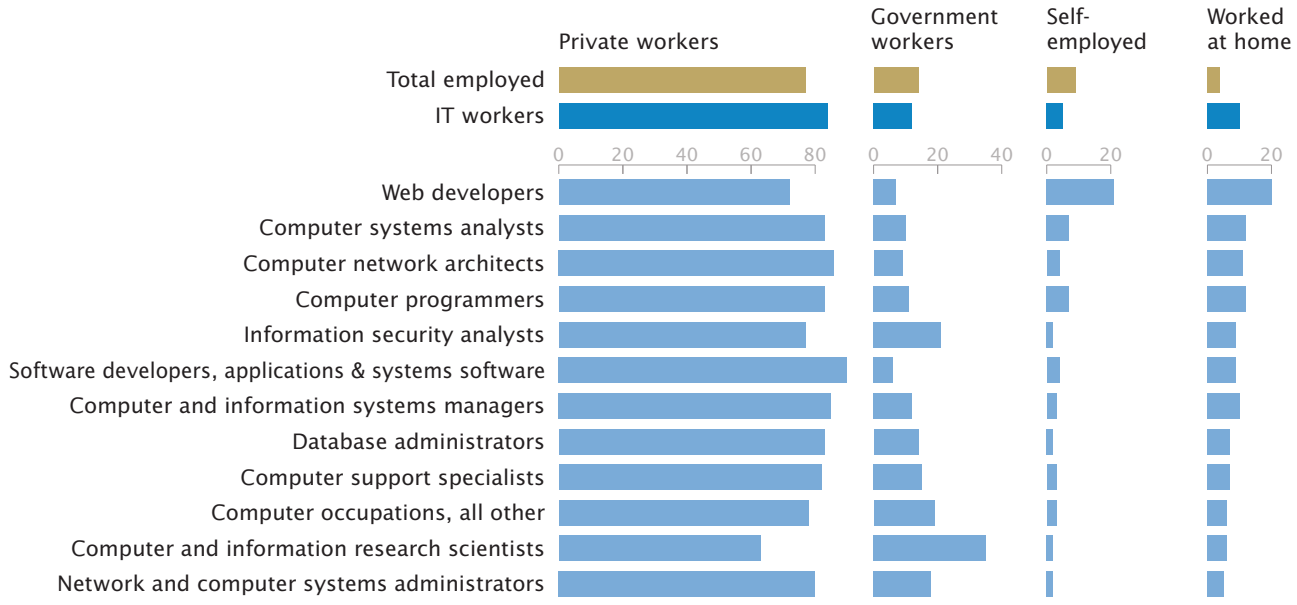
Asian workers comprised a larger percentage of IT workers than all workers did. Compared with 6.0 percent of all workers, 18.0 percent of IT workers were Asian (Figure

[11] In the ACS, all workers 16 years and over are asked how they usually got to work last week. Respondents who select "worked at home," presumably worked at home for most of the week.

Figure 12.

Distribution of Information Technology (IT) Workers Across Class of Work and Percentage Working at Home: 2014

(In percent. Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*



Source: U.S. Census Bureau, 2014 American Community Survey.

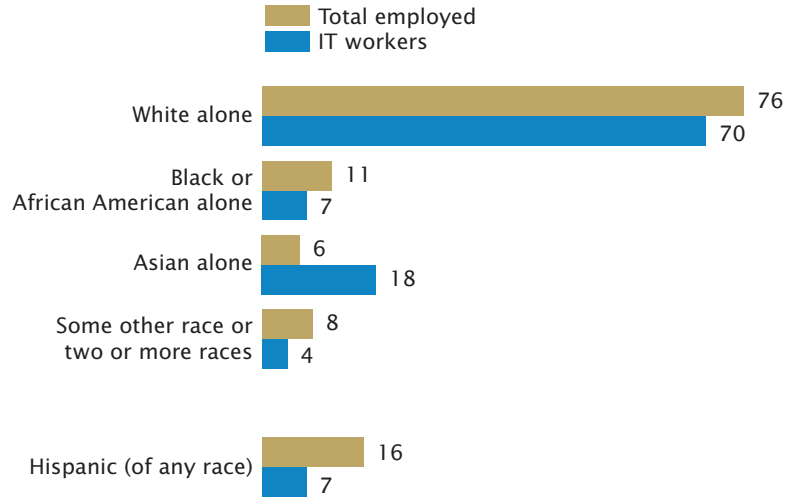
13).[12] IT workers were majority White, although the percentage of White IT workers (70.0 percent) was less than that of all workers (76.0 percent). In contrast to Asian workers, Black workers were less concentrated in IT occupations.

[12] Federal surveys now give respondents the option of reporting more than one race. Therefore, two basic ways of defining a race group are possible. A group, such as Asian, may be defined as those who reported Asian and no other race (the race-alone or single-race concept) or as those who reported Asian regardless of whether they also reported another race (the race-alone-or-in-combination concept). This report shows data using the first approach (race-alone). Use of the single-race population does not imply that it is the preferred method of presenting or analyzing data. The terms White, Asian, and Black refer to White alone, Asian alone, and Black or African American alone, respectively.

Figure 13.

Race and Ethnic Representation of Information Technology (IT) Workers: 2014

(In percent. Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*

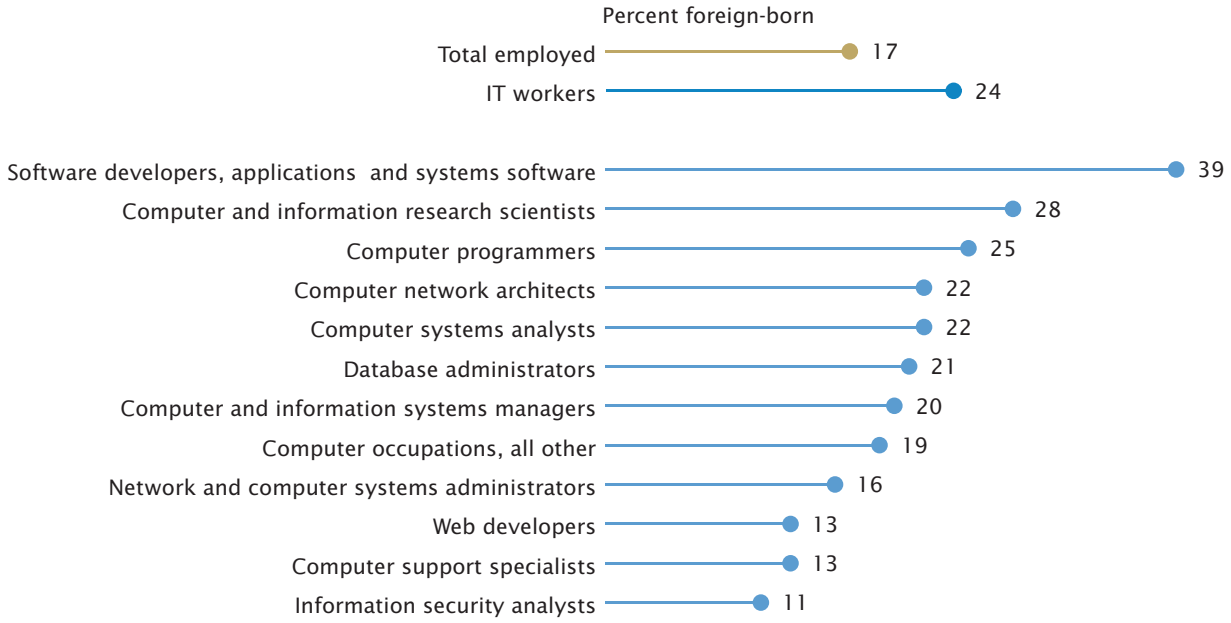


Source: U.S. Census Bureau, 2014 American Community Survey.

Figure 14.

Percentage of Foreign-Born Information Technology (IT) Workers: 2014

(Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf)*

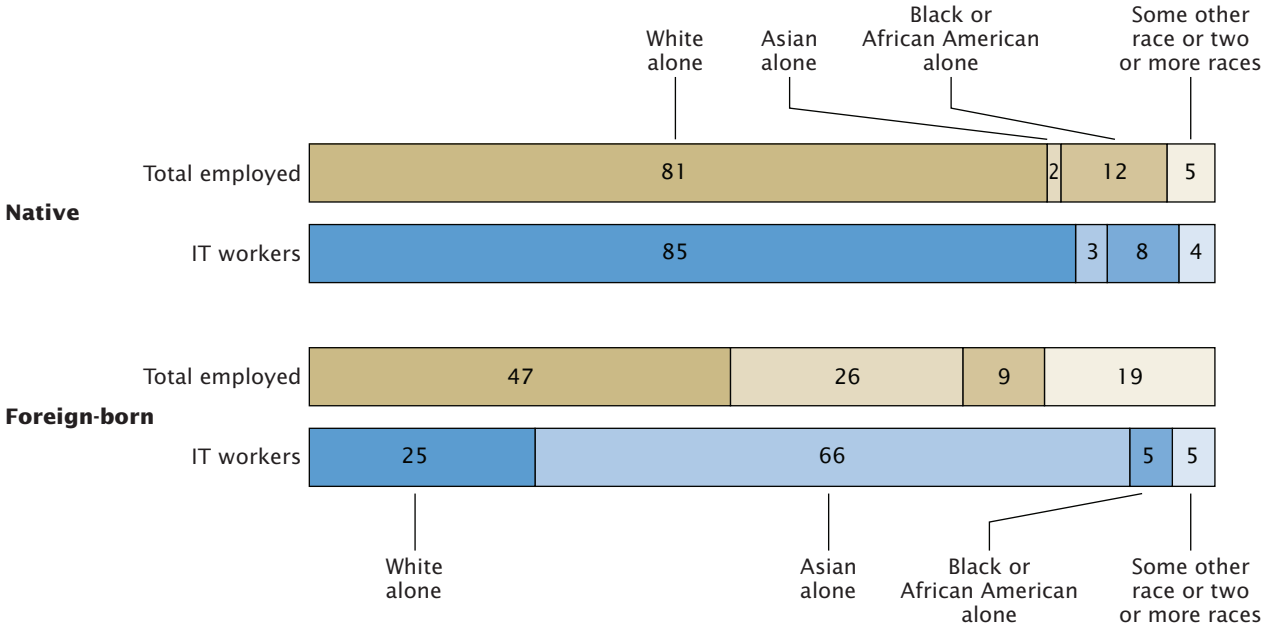


Source: U.S. Census Bureau, 2014 American Community Survey.

Figure 15.

Race and Nativity of Information Technology (IT) Workers: 2014

(In percent. Civilian employed, 16 years and over. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www2.census.gov/programs-surveys/acs/tech_docs/accuracy /ACS_Accuracy_of_Data_2014.pdf)*



Source: U.S. Census Bureau, 2014 American Community Survey.

Only 7.0 percent of IT workers were Black compared with 11.0 percent of all workers. Similarly, Hispanic workers had low rates of employment in IT occupations.[13] While 16.0 percent of all workers were Hispanic, this group made up 7.0 percent of IT workers.

IT had a significantly higher rate of foreign-born workers, 24.0 percent compared with 17.0 percent of total employed (Figure 14). Software developers, applications and system software, and computer and information research scientists had some of the highest rates of foreign-born workers—39.0 percent and 28.0 percent, respectively. Six of the 12 detailed occupations had at least 20.0 percent foreign-born workers. Web developers, computer support specialists, and information security analysts had among the lowest rates of foreign-born workers.

The breakdown of race by place of birth in Figure 15 shows that the majority of foreign-born IT workers were Asian. This rate was much higher than that of all foreign-born workers. One potential reason for these high rates of foreign born among IT occupations was the issuing of work-related (H1-B)[14] visas by the U.S. government to these workers. In 1999, 59.0 percent of H1-B visas were planned for IT workers. Of the visas approved that year for IT occupations, nearly 75.0 percent went to Indian immigrants (GAO, 2000). Among native workers, Whites and Asians were overrepresented in IT occupations compared with the total employed. The underrepresentation of Blacks and other races was also evident among both native and foreign-born IT workers.

[13] People who identify as Hispanic may be any race. Data in this report for Hispanics overlap with data for racial groups.

[14] The H-1B visa program allows employers to hire high-skilled, foreign workers for up to 6 years for certain specialty programs. The program is administered by the Department of Labor and U.S. Citizenship and Immigration Services.

CONCLUSION

This report explores trends in IT occupations and the characteristics of the IT workforce. IT work has expanded in size and variety since the 1960s and 1970s when computers were first introduced in the home and in the workplace. The IT workforce grew tenfold between 1970 and 2014. Throughout this period, the majority of IT workers have been men. The percentage of women working in IT occupations peaked in 1990 at 31.0 percent. Median earnings for both men and women working in IT increased between 1970 and 2014. In addition, the median earnings of these men and women have remained higher than the median earnings of men and women in all occupations. In 2014, the characteristics of IT workers differed from the average worker. They were more likely to be male, have higher education levels, higher median earnings, work at home, be Asian, and be foreign-born. Their distinct composition makes IT workers a unique subset of the labor force that is expected to expand in the future, along with the increased use of computers.

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SOURCE OF THE ESTIMATES

The American Community Survey (ACS) is a nationwide survey designed to provide communities with reliable and timely demographic, social, economic, and housing data for congressional districts, counties, places, and other localities every year. It has an annual sample size of about 3.5 million addresses across the United States and Puerto Rico and includes both housing units and group quarters (e.g., nursing homes and prisons). The ACS is conducted in every county throughout the nation, and every municipio in Puerto Rico, where it is called the Puerto Rico Community Survey. For information on the ACS sample design and other topics, visit <www.census.gov/acs/www>.

ACCURACY OF THE ESTIMATES

The data presented in this report are based on the ACS sample interviewed in January 2010 through December 2010 and January 2014 through December 2014. The estimates based on this sample describe the actual average value of characteristics for the household and group quarters populations over this period of collection. Sampling error is the difference between an estimate based on a sample and the corresponding value that would be obtained if the estimate were based on the entire population (as from a census). Measures of sampling error are provided in the form of margins of error for all estimates included in this report. All comparative statements in this report have undergone statistical testing, and comparisons are significant at the 90 percent level, unless otherwise noted. In addition to sampling error, nonsampling error may be introduced during any of the operations used to collect and process survey data, such as editing, reviewing, or keying data from questionnaires. For more information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors, please see the 2010 and 2014 ACS Accuracy of the Data document located at <www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2010.pdf> and <www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2014.pdf>.

CONTACT

For questions related to the contents of this report and the accompanying tables, contact the author:

Julia Beckhusen
<julia.b.beckhusen@census.gov>
(301) 763-1094
Industry and Occupation Statistics Branch
Social, Economic, and Housing Statistics Division
U.S. Census Bureau

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