

ICT/DIGITAL MEDIA

Current & Projected Employment

Within the ICT/digital media industry, wired telecommunications is projected to produce the greatest number of new jobs in the next five years, resulting in nearly 900 new positions by 2021, a 35% growth rate (Exhibit 61). Radio and television broadcasting will expand by 8%, creating 135 new jobs. Specialized design services will undergo strong growth, 12%, adding 92 new jobs.

Several ICT/digital media business types will contract in the South Central Valley/Southern Mother Lode Subregion by 2021. Newspaper, periodical, book and directory publishers will decline by 18%, shedding more than 200 jobs. Cable and other subscription programming will be reduced by 24%, a loss of 118 jobs. And wireless telecommunications carriers (except satellite) will shrink by 40%, eliminating 97 positions.

Exhibit 61: ICT/digital media current and projected employment

Description	2016 Jobs	2021 Jobs	5-Year Change	5-Year % Change	# of Firms
Wired Telecommunications Carriers (5171)	2,524	3,416	892	35%	76
Computer Systems Design and Related Services (5415)	2,523	2,530	7	0%	248
Radio and Television Broadcasting (5151)	1,794	1,929	135	8%	57
Motion Picture and Video Industries (5121)	998	1,067	69	7%	44
Specialized Design Services (5414)	782	874	92	12%	56
Data Processing, Hosting and Related Services (5182)	418	428	10	2%	12
Software Publishers (5112)	348	441	93	27%	13

Industry Staffing Patterns

Telecommunications equipment installers and repairers, except line installers is the largest occupation with the greatest number of job gains projected at the industry level in the next five years (Exhibit 62).

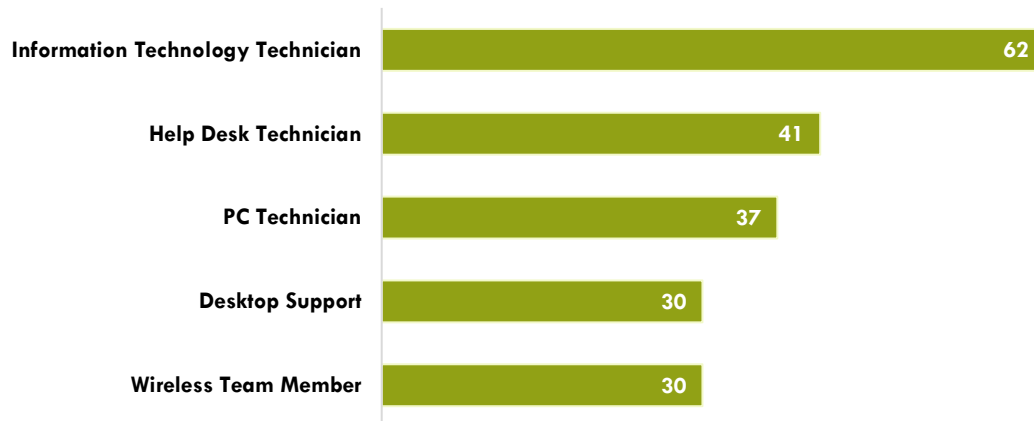
Exhibit 62: ICT/digital media staffing patterns

SOC	Description	Employment		5-Year Change	5-Year % Change
		2016	2021		
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	963	1,191	228	24%
49-9052	Telecommunications Line Installers and Repairers	425	502	77	18%
15-1151	Computer User Support Specialists	317	345	28	9%
15-1152	Computer Network Support Specialists	119	139	20	17%
15-1142	Network and Computer Systems Administrators	176	193	17	10%
27-1024	Graphic Designers	369	384	15	4%
15-1143	Computer Network Architects	99	110	11	11%

Job Postings

An analysis of job posting data for the seven staffing pattern occupations shows the positions employers most sought to fill in the last 12 months. Exhibit 63 details the top five jobs requiring less than a bachelor's degree advertised by employers.

Exhibit 63: ICT/digital media job postings



Skills

The top baseline skills from the occupational and industry perspectives are identical with troubleshooting, communication and writing skills as the top three (Exhibit 64).

Exhibit 64: ICT/digital media baseline skills

Occupational Cluster		Industry: Computer & Mathematical	
Baseline Skills	Job Postings	Baseline Skills	Job Postings
Troubleshooting	545	Communication Skills	1038
Communication Skills	338	Troubleshooting	886
Writing	249	Writing	806
Problem Solving	220	Planning	666
Planning	171	Problem Solving	595

Exhibit 65 shows specialized skills commonly listed in job ads. Technical support, system administration and customer service are highly ranked.

Exhibit 65: ICT/digital media specialized skills

Occupational Cluster		Industry: Computer & Mathematical	
Specialized Skills	Job Postings	Specialized Skills	Job Postings
Technical Support	349	Technical Support	559
System Administration	292	SQL	518
Hardware and Software Installation	226	Microsoft Office	500
Repair	225	Customer Service	433
Customer Service	205	System Administration	429

Top software skills for jobs related to ICT/digital media are shown in Exhibit 66. The top three requested skills that are shared between the two tables are Microsoft Office, Windows and SQL.

Exhibit 66: ICT/digital media specialized skills

Occupational Cluster		Industry: Computer & Mathematical	
Software Skills	Job Postings	Software Skills	Job Postings
Microsoft Office	193	SQL	518
Microsoft Windows	186	Microsoft Office	500
Microsoft Operating Systems	107	Microsoft Excel	357
Windows Server	106	Microsoft Windows	262
SQL	101	Oracle	240

Occupational Demand Projections

Computer user support specialists is the largest occupation and has the greatest projected five-year gain, 221 new jobs by 2021 with 75 annual openings (Exhibit 67). Telecommunications equipment installers and repairers (except line installers) has the next highest gain projection, 268 new jobs with 69 annual openings, followed by network and system administrators, 95 new jobs with 36 annual openings.

Exhibit 67: ICT/digital media occupational projections

Occupation	2016	2021	5-Yr Change	5-Yr % Change	Annual Openings
Computer User Support Specialists	2,229	2,450	221	10%	75
Telecommunications Equipment Installers and Repairers, Except Line Installers	1,463	1,731	268	18%	69
Network and Computer Systems Administrators	1,247	1,342	95	8%	36
Graphic Designers	1,036	1,063	27	3%	32
Computer Network Support Specialists	560	623	63	11%	20
Computer Occupations, All Other	1,024	1,047	23	2%	19
Audio and Video Equipment Technicians	408	453	45	11%	17
Computer, Automated Teller and Office Machine Repairers	432	441	9	2%	15
Web Developers	416	457	41	10%	14
Computer Network Architects	356	387	31	9%	11

Wages

The highest occupational hourly wages are earned by computer network architects, computer occupations (all other) and network and computer systems administrators (Exhibit 68). All the listed occupations have wages above the subregion's average living wage for a single adult except audio and video equipment technicians.

Exhibit 68: ICT/digital media wages

Occupation	Pct. 10 Hourly Wages	Median Hourly Wages
Computer Network Architects	\$29.46	\$49.79
Computer Occupations, All Other	\$25.03	\$38.67
Network and Computer Systems Administrators	\$22.32	\$36.15
Computer Network Support Specialists	\$16.92	\$30.45
Telecommunications Equipment Installers and Repairers, Except Line Installers	\$15.80	\$26.27
Web Developers	\$15.48	\$22.64
Computer User Support Specialists	\$14.14	\$22.61
Graphic Designers	\$13.28	\$19.96
Computer, Automated Teller, and Office Machine Repairers	\$13.18	\$17.55
Audio and Video Equipment Technicians	\$10.17	\$17.62

Education Level

Exhibit 69 shows education levels required for occupations that fall within the ICT/digital media industry. Network and computer systems administrators, graphic designers and computer occupations (all other) and computer network architects have a typical entry-level education of a bachelor's degree. Three of the occupations below meet the 33.3% threshold on the CPS for being community college relevant. All the remaining ICT/digital media occupations have typical education levels at the community college level.

Exhibit 69: ICT/digital media education levels

Occupation	Typical Entry-Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Computer User Support Specialists	Some college, no degree	None	None	45.2%
Telecommunications Equipment Installers and Repairers, Except Line Installers	Postsecondary nondegree award	None	Moderate-term	52.8%
Network and Computer Systems Administrators	Bachelor's degree	None	None	39.5%
Graphic Designers	Bachelor's degree	None	None	30.3%
Computer Network Support Specialists	Associate degree	None	None	45.2%
Computer Occupations, All Other	Bachelor's degree	None	None	36.9%
Audio and Video Equipment Technicians	Postsecondary nondegree award	None	Short-term	44.6%
Computer, Automated Teller and Office Machine Repairers	Some college, no degree	None	Short-term	53.1%
Web Developers	Associate degree	None	None	27.2%
Computer Network Architects	Bachelor's degree	5 years or more	None	37.0%

Community College Supply

Exhibit 70 shows annual job openings and corresponding program titles with student completion data.

Exhibit 70: ICT/digital media community college supply

Occupation	Annual Openings (2016-21)	Program - TOP6	Total Annual Avg Degrees (2013-16)	Total Annual Avg Certificates (2013-16)
Computer User Support Specialists (15-1151)	75	Computer Information Systems - 070200	32	55
		Computer Support - 070820	22	-
Telecommunications Equipment Installers and Repairers, Except Line Installers (49-2022)	69	Telecommunications Technology - 093430	-	17
Network and Computer Systems Administrators (15-1142)	36	Computer Infrastructure and Support - 070800	-	11
Graphic Designers (27-1024)	32	Digital Media - 061400	-	2
		Computer Graphics and Digital Imagery - 061460	-	-
		Applied Design - 100900	-	-
		Commercial Art - 101300	-	-
		Graphic Art and Design - 103000	21	18
Computer Network Support Specialists (15-1152)	20	Computer Science (Transfer) - 070600	12	-
		Computer Systems Analysis - 070730	-	-
		Computer Infrastructure and Support - 070800	-	11
		Computer Networking - 070810	50	56
		Computer Support - 070820	22	-
Computer Occupations, All Other (15-1199)	19	Electronic Game Design - 061420	-	-
		Information Technology, General - 070100	30	12
		Computer Information Systems - 070200	32	55
		Computer Science (Transfer) - 070600	12	-
		Other Information Technology - 079900	-	-
		Geographic Information Systems - 220610	-	-
Audio and Video Equipment Technicians (27-4011)	17	Commercial Music - 100500	3	3

Occupation	Annual Openings (2016-21)	Program - TOP6	Total Annual Avg Degrees (2013-16)	Total Annual Avg Certificates (2013-16)
Computer, Automated Teller and Office Machine Repairers (49-2011)	15	Computer Electronics - 093410	-	5
Web Developers (15-1134)	14	Website Design and Development - 061430	7	22
		Computer Science (Transfer) - 070600	12	-
		Computer Software Development - 070700	-	-
		Computer Programming - 070710	1	0
		World Wide Web Administration - 070900	1	1
		E-Commerce (Technology Emphasis) - 070910	-	-
Computer Network Architects (15-1143)	11	Computer Systems Analysis - 070730	-	-
		Computer Infrastructure and Support - 070800	-	11
		Computer Networking - 070810	50	56

Source: EMSI, MIS, Data Mart, Center of Excellence TOP-CIP-SOC

HEALTH CARE

Current & Projected Employment

Of all the industries analyzed, the health care industry is expected to offer the most employment opportunities in the South Central Valley/Southern Mother Lode Subregion over the next five years. Overall, more than 22,400 new jobs are anticipated. Individual and family services will create the greatest number of new jobs, 10,019 by 2021, with a growth rate of 32% (Exhibit 71).

Another job generator will be general medical and surgical hospitals, which will expand by 11%, a gain of nearly 3,000 jobs.

Outpatient care centers will undergo rapid growth. This industry type also has a 36% growth rate and will add nearly 2,400 positions in the subregion by 2021.

Offices of physicians will increase by 11%, adding 1,758 jobs, and nursing care facilities (skilled nursing facilities) will grow by the same rate, adding 859 positions.

Also noteworthy are offices of other health practitioners, which will add more than 1,200 jobs, a 25% growth rate, and continuing care retirement communities and assisted living facilities for the elderly, which will add more than 1,000 jobs, representing 23% growth.

Exhibit 71: Health care current and projected employment

Description (NAICS)	2016 Jobs	2021 Jobs	5-Year Change	5-Year % Change	# of Firms
Individual and Family Services (6241)	30,878	40,897	10,019	32%	23,146
General Medical and Surgical Hospitals (6221)	25,920	28,866	2,946	11%	57
Offices of Physicians (6211)	16,258	18,016	1,758	11%	1,746
Nursing Care Facilities (Skilled Nursing Facilities) (6231)	7,682	8,541	859	11%	96
Outpatient Care Centers (6214)	6,569	8,966	2,397	36%	234
Offices of Dentists (6212)	5,856	6,296	440	8%	821
Offices of Other Health Practitioners (6213)	4,872	6,108	1,236	25%	561
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly (6233)	4,328	5,344	1,016	23%	189
Home Health Care Services (6216)	3,195	4,078	883	28%	108

Industry Staffing Patterns

The occupation of registered nurses is the largest in the health care industry, with 12,843 jobs (Exhibit 72). This occupation also has the greatest projected five-year change in the industry, 2,161 new jobs. Home health aides has the next greatest growth projection, 1,333 new jobs. The nursing assistants occupation had 6,044 jobs in 2016 and more than 1,100 new jobs projected by 2021.