

MSP Sector Analysis

Information Technology

Needs by Career Pathway

Continuing Growth, Expanding Opportunities

Information Technology continues to be a growing and high-wage sector of great importance to the finance, healthcare, and high tech industries. About 79,886 people are currently employed in IT roles, with about 7% of these found in state or local government. Employers continue to seek candidates with credentials; 98% of online job postings advertised during the 4th quarter of 2017 required a certificate or some college education. Sector employment is expected to grow by 1% annually through 2020, but if growth conditions improve, could rise by 2.2% to about 85,183.

Sector Demand in the 7-County Metro, Q4 2017*

Network Systems Pathway

5,491 job ads (+30% from Q3) **14,298 employed**
\$105,250 median posted salary **\$92,000 avg. salary**

Top Occupations, Other Titles, & Median Posted Salary

- Network & Computer Systems Administrators (Facilities Specialist, Network Engineer): \$94,500
- Information Security Analysts (Security Engineer, Checkpoint Firewall SME): \$118,750
- Database Administrators (Product Database Consultant, Technical ERP Admin): \$108,700
- Computer Network Architects (Data Analyst, Network Engineer, Infrastr. Analyst): \$103,350
- Database Architects (Data Warehouse Architect, Data Architect, Data Modeler): \$124,000

Top Posting Employers

Top Hard Skills

- Linux
- Firewall
- UNIX
- Microsoft Active Directory
- SQL

Performance Indicators: LOW UNEMPLOYMENT, HIGH GROWTH, AVERAGE POSTING VOL, BASE NEED NOT MET

Web & Digital Communications Pathway

3,726 job ads (+30% from Q3) **6,100 employed**
\$108,300 median posted salary **\$75,600 avg. salary**

Top Occupations, Other Titles, & Median Posted Salary

- Web Developers (Event Technology Specialist, Lightning Developer, Java Developer): \$109,250
- Search Marketing Strategists (Search Coordinator, Digital Marketing Specialist): \$56,700
- Digital Media Artists & Animators (Unity 3D Gaming Developer, Video Producer): \$81,000
- Web Administrators (Content Coordinator, E-Commerce Administrator): \$58,450
- Telecommunications Engineering Specialists (Internal Communications Specialist): \$73,000

Top Posting Employers

Top Hard Skills

- JavaScript
- Java
- Cascading Style Sheets
- HTML
- jQuery

Performance Indicators: LOW UNEMPLOYMENT, HIGH GROWTH, AVERAGE POSTING VOL, BASE NEED MET

Information Support & Services Pathway

10,762 job ads (+32% from Q3) **7,786 employed**
\$100,350 median posted salary **\$63,500 avg. salary**

Top Occupations, Other Titles, & Median Posted Salary

- Computer User Support Specialists (Deskside Support, Tech Client Success Specialist): \$59,950
- Information Technology Project Managers (SAP Project Manager, SCRUM Master): \$117,250
- Computer Systems Engineers/Architects (Performance Engineer, Enterprise Architect): \$135,400
- Computer Operators (Print Production Associate, Data Card Operator, Lettershop Ops): \$34,900
- Geographic Information Systems Technicians (GIS Technician, Geo Systems Consultant): \$50,400

Top Posting Employers

Top Hard Skills

- Technical Support
- Systems Development Life Cycle
- Scrum Agile Methodology
- Quality Assurance

Performance Indicators: AVG UNEMPLOYMENT, AVERAGE GROWTH, HIGH POSTING VOL, BASE NEED MET

Programming & Software Dev. Pathway

18,476 job ads (+32% from Q3) **32,932 employed**
\$115,750 median posted salary **\$108,200 avg. salary**

Top Occupations, Other Titles, & Median Posted Salary

- Software Developers, Applications (DevOps Engineer, Software Process Improvement): \$122,150
- Computer Systems Analysts (Business Systems Analyst, Workflow Specialist): \$108,050
- Software Quality Assurance Engineers & Testers (ELM Tester, QA Analyst): \$97,650
- Computer & Information Systems Managers (IT/Commercial Director, Sr. Manager): \$125,750
- Computer Programmers (Lead BI Developer, Mainframe Developer, PeopleSoft Dev): \$106,450

Top Posting Employers (excludes generic system-wide)

Top Hard Skills

- Java
- SQL
- Quality Assurance
- Systems Development Life Cycle
- JavaScript

Performance Indicators: LOW UNEMPLOYMENT, HIGH GROWTH, AVERAGE POSTING VOL, BASE NEED NOT MET

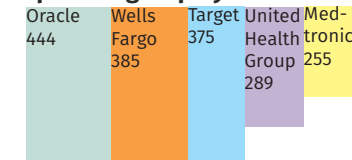
Cybersecurity Skill Cluster

10,932 job ads (+18%) out of 38,455 total (+28%)
 28% of all IT jobs advertised indicate security skills

Top Occupations Citing Security Skills

- Application Software Developers (1,947 Ads)
- Information Security Analysts (1,448 Ads)

Top Posting Employers



- Network Systems
- Information Support & Services
- Web & Digital Communications
- Programming & Software Dev.
- Cyber Security

*Informatics Nurse Specialists and health-specific data management, Data Entry Keyers and other light administrative roles were not included in this IT sector analysis, but may be considered as additional starting points for IT careers.

Bootcamps, Dual Training Programs, & Other IT Credentials

Formal Education Graduate Employment Outcomes

INCREASE GRADUATE OUTPUT

Typical Entry-Level Position: BA Degree / Relevant Experience; 77% Graduates of IT Edu. Programs Remain in MN & Work
Regional Certificate 2-Year, and 4-Year Program Graduates, 2014 (CIP 11)* 30% Graduates of Color

Instructional Program	2013-2014		Employment 2 Years Later (2016)			
	Graduates	Graduates Employed in MN	% Grads with Reported Wages In MN	Full-time year-round median wage	% working full-time & year-round	% working part-time or seasonally
Computer Science	454	278	64%	\$67,442	68%	32%
Computer/IT Administration & Management	359	251	87%	\$45,448	59%	41%
Computer Systems Networking & Telecommunications	208	179	87%	\$45,317	59%	41%
Computer Software & Media Applications	172	132	80%	\$43,166	54%	46%
Computer & Information Sciences, General	161	123	76%	\$69,663	78%	22%
Computer Programming	119	102	86%	\$49,015	59%	41%
Computer Systems Analysis	100	69	70%	\$63,491	78%	22%
Information Science/Studies	30	27	90%	\$66,161	74%	26%
Total: All Computer & Info Sciences & Support Services	1,607	1,165	77%	\$56,327	64%	36%

MN Department of Labor & Industry PIPELINE Dual Training Program

80 awards 2015-2017 (+13 awards expected in 2018)

Priority Applicants: Recent High School/GED graduates; Previous grantees with continuing student/employee populations to complete degrees; Balanced between Metro/Greater MN, employer sizes, across industries.

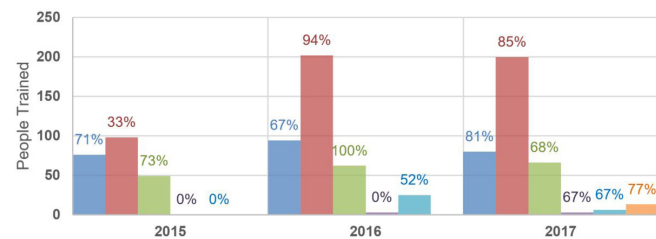
Occupations	Total Completions	% of Total
Service Desk/Front Line	44	55%
Security Analyst	20	25%
Software Developer	13	16%
Web Developer	3	4%
Total	80	

MSP TechHire Training Partners

INCREASE TRAINING OUTPUT

Typical Entry-Level Position: BA Degree / Relevant Experience; 79% Graduates of Programs Remain in MN & Work

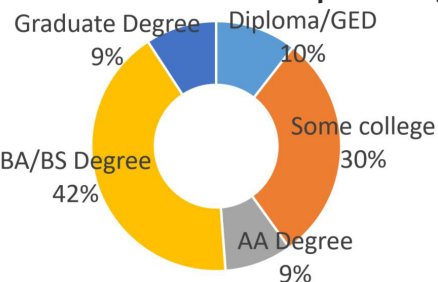
Regional Bootcamps & Training Programs, Graduates and % Placed in Jobs



Organization	Total Trained	% Female	% 30+	% POC
IT Ready	250	29%	45%	63%
PRIME	500	36%	52%	17%
The Software Guild	177	30%	38%	7%
AIOIC/TAKODA	6	0%	50%	67%
JFCS	31	16%	74%	61%
York B2E	13	62%	100%	31%
Total	977	33%	49%	29%

Metro Employers (in order of joining)	Training Providers
Fairview Health Services	Global Knowledge, HDI, Intertech, Knowledge Peak, MCTC, Pink Elephant Corp., New Horizons, St Paul College
MN.IT Services	CED Solutions, Collier IT, New Horizons
Beltmann Relocation Group	New Horizons
IBI Data	PRIME Digital Academy, Riverland CC
North Memorial	New Horizons

Education Level of Bootcamp & Training Participants



Bootcamp & Training Types

Training Types	Grads 2015-2017	% Placed in Jobs
Bootcamp	677	79%
Help Desk	287	78%
Project Management	13	77%

For more information:

- Industry Contact: **Tammy Dickinson, Career Pathways Coordinator** (612-673-5041 or tammy.dickinson@minneapolismn.gov)
- MSPWin Career Map: <http://mspwin.org/wp-content/uploads/2016/06/Career-Pathway-Maps.pdf>
- RealTime Talent Reports: realtimetalent.org/research/reports

*Graduate Employment Outcomes from MN DEED, for Twin Cities IT (CIP 11) graduates from July 2013-June 2014. Only includes data on graduates that had reported wages in MN 2 years after graduation; does not include students that found work out of state, were self-employed, or continued their education. Developed by Erin Olson (erin@realtimetalentmn.org). Published /14/2018 by RealTime Talent. Sources: TalentNeuron Recruit aggregate online job postings. www.wantedanalytics.com accessed October 26, 2017. Counts of job postings in Q4 2017 by employer were available Oct 1 - Dec 31, 2017 in the 7-county Minneapolis-Saint Paul Metro. Includes staffing agencies. Percent change in job postings are the change from the same quarter in the prior year. Employment, wage, and education data modeled from IPEDS, OES, and BLS data by JobsEQ. People of color color calculations do not include nonresident aliens (international students) for which race or ethnicity is not determined. Some overlap in counts of graduates from formal education, dual-training, and bootcamp programs may exist, as some students may have participated in multiple programs.