The Technology Industry

A condition assessment for current employment and future talent in Information Technology in Ramsey County

Impacts on Employment in the Technology Industry

High Demand for Skilled Talent
- Industry employment fell by -1.9% on average annually over the past five years, but leveled out since the pandemic hit
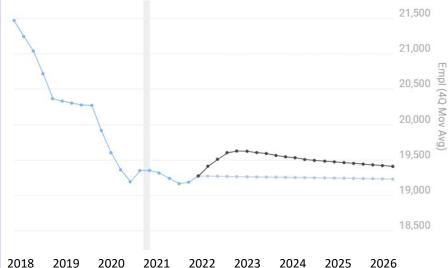- Industry employment projected between 0-0.1% annually

High Labor Shortage Persists
- Low unemployment in Tech Occupations (2.1%) means a tight labor market
- All IT occupations forecasting shortages
- Remote work prevalence has changed recruitment practices and talent expectations
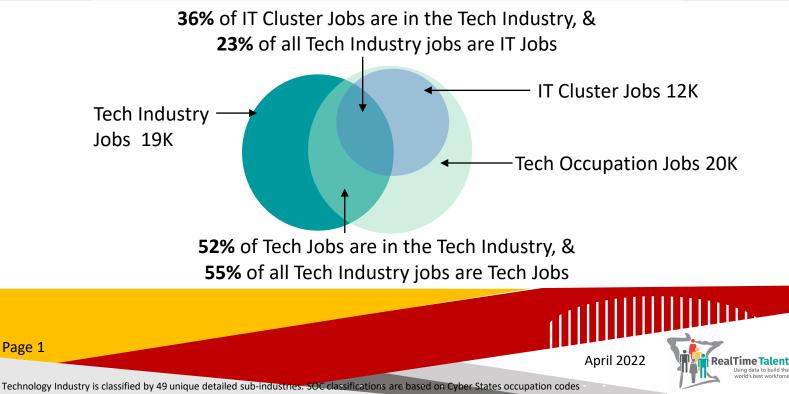
High Talent Misalignment
- Skills, education, geography, and bias present barriers to talent
- Minnesota is last in the nation in access to foundational Computer Science education
- Educational requirements of positions do not match local talent skills
- Rapid upskilling and reskilling is required to keep pace with sector innovation

Black Line: Optimistic 5-Year Forecast
Blue Line: Baseline Employment Outlook (Pre-COVID model)

Tech Industry Average Wage: $116,259
Total Employment 2021Q3: 19,269

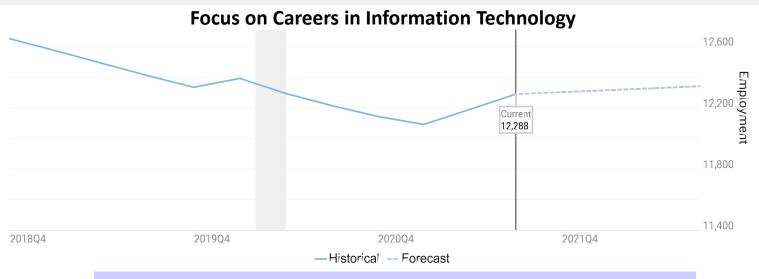## Technology Industry and Technology Occupations in Ramsey County

36% of IT Cluster Jobs are in the Tech Industry, &
23% of all Tech Industry jobs are IT Jobs

Tech Industry Jobs 19K

IT Cluster Jobs 12K

Tech Occupation Jobs 20K

52% of Tech Jobs are in the Tech Industry, &
55% of all Tech Industry jobs are Tech Jobs

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Focus on Careers in Information Technology

Current: 12,288

Legend: — Historical, -- Forecast

Information Technology Occupation Average Wage: $95,500
Total Employment 2021Q3: 12,288
Unemployment Rate 2021Q3: 1.8%

Critical Information Technology Careers Ranked by Size of Talent Shortage
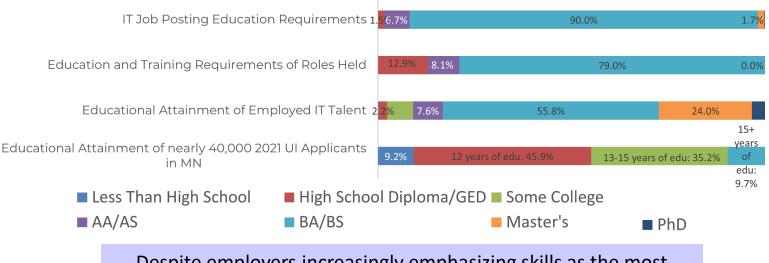
Rank	Occupations with Highest 5-Year Talent Shortages in Ramsey County	2021Q3 Empl.	Ann. Unique Postings	Avg. Entry Wage	Avg. Wage	Avg. Education Requirement
1	Software Developers	8,291	5,499 (+15%)	$73K	$108K	Bachelor's
2	Computer Systems Analysts	1,095	2,113 (+22%)	$66K	$101K	Bachelor's
3	Information Security Analysts	1,850	1,806 (+51%)	$70K	$104K	Bachelor's
4	Computer Occupations, All Other	479	5,671 (+39%)	$58K	$93K	Bachelor's
5	Network Support Specialists	1,265	21 (+62%)*	$49K	$74K	Associate's
6	Database Administrators & Architects	803	256 (+3%)	$71K	$107K	Bachelor's
7	Network & Computer Systems Administrators	546	1,412 (+9%)	$62K	$89K	Bachelor's
8	Web Developers & Digital Interface Designers	281	908 (+41%)	$53K	$84K	Bachelor's
9	Computer Network Architects	337	126 (+54%)	$84K	$124K	Bachelor's
10	Computer Programmers	281	325 (+9%)	$61K	$89K	Bachelor's

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Educational Misalignment in Information Technology Careers, MSP Metro

Category	Values
IT Job Posting Education Requirements	1.5% / 6.7% / 90.0% / 1.7%
Education and Training Requirements of Roles Held	12.9% / 8.1% / 79.0% / 0.0%
Educational Attainment of Employed IT Talent	2.2% / 7.6% / 55.8% / 24.0%
Educational Attainment of nearly 40,000 2021 UI Applicants in MN	9.2% / 12 years of edu: 45.9% / 13-15 years of edu: 35.2% / 15+ years of edu: 9.7%

Legend:
- ■ Less Than High School
- ■ High School Diploma/GED
- ■ Some College
- ■ AA/AS
- ■ BA/BS
- ■ Master's
- ■ PhD

> Despite employers increasingly emphasizing skills as the most important indicator for success in IT careers,[1] nearly 92% of IT job postings in the MSP Metro, and **93% in Ramsey County** indicate that these positions require a BA or higher.[2]

An Origin, Gateway, and Target Occupation Model for Information Technology Careers

Ramsey County, 2021Q3

Definitions: [1] Target occupations are high-wage (HW) (above regional average), high-skill (HS) (require a credential), and high-demand (HD) (2/4 indicators: under 3% unempl, higher than average 5-year growth, total 5-demand>50% of current empl, high job posting volume), [2] Gateway occupations are mid-wage ($42K to regional average), low-middle skills (HS diploma, some OJT), sufficient demand (3-5% unempl and/or high volumes of current opportunities). [3] Origin occupations are low-wage (<$42K/year) and often low-skill (no credential), low-demand (over 5% unempl, low growth, low replacement demand, and/or low job postings). IT careers Have no clear Origin Occupations within the career field. Shown here are "aligned" roles with related skillsets to gateway occupations where demand is low, growth is declining, or talent may be available.

Target Occupations[1] (all HW, HD, HS, OG)
Software Developers
Computer Systems Analysts (AG)
Network & Computer Systems Administrators (AG)
Computer Occupations, All Other
Information Security Analysts

Gateway Occupations[2]
Network Support Specialists (HS, HW, HD, OG) – Associate's Level
Computer User Support Specialists (HD, AG) – Certificate Level

Aligned Origin Occupations [3]
Customer Service Representatives
Library Technicians
Hosts & Hostesses
Print Binding & Finishing Workers
Photo Processing Machine Operators

In-Demand Skills
Communication (51% IT postings)
Analysis (40% IT postings)
Collaboration (33% IT postings)
Product Testing (30% IT postings)
Problem Solving (27% IT postings)
Leadership (24% IT postings)
Project/Product Management (20% IT postings)

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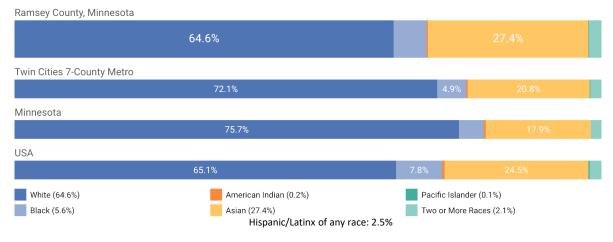
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Information Technology

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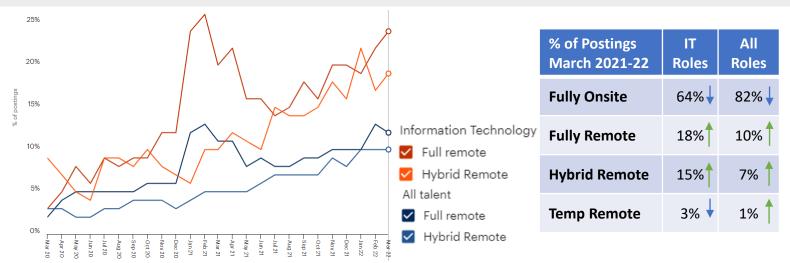## Diversity of Employed IT Talent by Race in Information Technology Careers

Ramsey County, Minnesota

| 64.6% | | 27.4% | |

Twin Cities 7-County Metro

| 72.1% | 4.9% | 20.8% | |

Minnesota

| 75.7% | | 17.9% | |

USA

| 65.1% | 7.8% | 24.5% | |

- White (64.6%)
- American Indian (0.2%)
- Pacific Islander (0.1%)
- Black (5.6%)
- Asian (27.4%)
- Two or More Races (2.1%)

Hispanic/Latinx of any race: 2.5%

Ramsey County has one of the most **racially diverse** and **youngest** IT workforces in Minnesota. However, **Black, American Indian,** and **Hispanic/Latinx** IT talent lag significantly behind overall employment representation in Ramsey County.

Remote and Hybrid Work in Information Technology Careers

Information Technology
- ☑ Full remote
- ☑ Hybrid Remote

All talent
- ☑ Full remote
- ☑ Hybrid Remote

% of Postings March 2021-22	IT Roles	All Roles
Fully Onsite	64% ↓	82% ↓
Fully Remote	18% ↑	10% ↑
Hybrid Remote	15% ↑	7% ↑
Temp Remote	3% ↓	1% ↑

With at least 825 Ramsey County households lacking access to high-speed internet,[3] cost of internet averaging $50/month,[4] and the challenge of low community digital literacy,[5] the growing opportunities in hybrid and remote work may be out of reach for many.

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