Minnesota
The State of Tech Talent

November 2022

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MINNESOTA
TECH WORKFORCE
SUMMIT

Written by: Katie McClelland, Director of Public
Policy & Research, Minnesota Technology Association

With data support from: Erin Olson of RealTime Talent

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Minnesota has a rich history of technology innovation, spanning from the development of the world's first fully re-programmable computer in the 1940's to the software and operating systems that now power tech-enabled companies like 3M, Best Buy, Cargill, C.H. Robinson, Medtronic, U.S. Bank, and UnitedHealth Group. This thriving tech ecosystem has also provided hundreds of thousands of Minnesotans with high-paying jobs in high-demand fields.

But despite the many strengths of Minnesota's innovation economy, its future prosperity is at risk due to a pressing lack of homegrown skilled technologists and costly lack of technologist diversity.

In the pages that follow, we wish to highlight the state of tech talent in Minnesota today, including the size, scale, and composition of Minnesota's tech workforce, the most in-demand jobs and related skills, and shine a light on many of the challenges faced in producing the digitally-skilled, employment-ready workforce Minnesota employers need for continued business success.

It is estimated that Minnesota companies will need at least 45,000 new IT professionals over the next five years to replace those leaving the workforce due to retirements and job changes out of IT careers. Unfortunately, our public education system and workforce systems are not producing nearly enough skilled tech talent to meet increasing business demand. With demand for talent far outstripping available supply, we need to think differently, and invest more aggressively, to ensure the future viability of Minnesota's tech workforce.

Fortunately, there are viable solutions to the challenges we face as well as committed leaders in our business, education, government, and nonprofit sectors ready to tackle these problems head-on. It will take all of us, working and investing together, to drive impactful and lasting change, and MnTech is proud to be your partner in this important work.

Jeff Tollefson
President & CEO, Minnesota Technology Association

About MnTech

The Minnesota Technology Association (MnTech) is a coalition of nearly 200 member companies united in building a stronger tech ecosystem and innovation economy in Minnesota. MnTech works to ensure that Minnesota's technology-driven companies have access to exceptional talent, dedicated public policy advocates, and are part of an innovative, inclusive technology community. Learn more at mntech.org and meet our board members below.

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Minnesota Tech Snapshot

Within Minnesota, the tech sector continues to play a vital role in the overall state's economy and total employment. Tech also plays a driving role in new business creation, and Minneapolis ranks 2nd best in the Midwest for startups, building our next generation of tech innovators and fueling Minnesota's innovation economy.

105,835
TECH OCCUPATION JOBS
(ex. software developer)

$29.1b
ECONOMIC IMPACT
(estimated direct
impact of tech sector)

8.1%
ECONOMIC IMPACT OF TECH AS %
OF OVERALL STATE ECONOMY

95,794
UNIQUE TECH OCCUPATION JOB
POSTINGS OVER LAST 12 MONTHS

$94,715
ESTIMATED MEDIAN
TECH WAGE
106% HIGHER THAN
MEDIAN STATE WAGE

6.2%
NET EMPLOYMENT AS A % OF
OVERALL WORKFORCE

10,291
TECH BUSINESS
ESTABLISHMENTS
(firms with payroll)

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How Minnesota Ranks Nationally

The tech sector continues to grow nationally, however, Minnesota has failed to keep up with this growth. Despite being ranked 18th in the country in terms of net tech employment, Minnesota ranks 46th in projected tech employment growth over the 2022-2032 time period, a projection based less on occupational demand and more a function of labor supply constraints

NET TECH
EMPLOYMENT RANK
18th

→

SLIPPING FROM
12th
IN 2018

6,593
PROJECTED NUMBER
OF NEW IT JOBS CREATED
OVER NEXT 10 YEARS

81,503
PROJECTED NUMBER OF IT JOBS THAT NEED
TO BE FILLED OVER NEXT 10 YEARS DUE TO
RETIREMENTS, LEAVING TECH FIELD, ETC.

NET GROWTH
46th
ONLY FOUR STATES PROJECTED
TO HAVE SLOWER IT JOB
GROWTH THAN MN

TECH EMPLOYMENT OUTLOOK

110,788 | 117,381 | NET
CHANGE
6,593
6%

2022 | 2032

Tech Talent Demands

Talent demands can play a significant role in a company's ability to grow and compete locally and nationally, however the tight labor market is even more challenging in the tech sector when comparing to the total state labor market. IT unemployment rate stands at 1.1% as compared to 1.9% statewide, a trend that has not shown any signs of subsiding.

TOP IT OCCUPATIONS

OCCUPATION	2022 Q1 EMPLOYMENT	UNEMPLOYMENT RATE	AVERAGE WAGE (2021)	FORECASTED AVERAGE ANNUAL GROWTH THROUGH 2027	TOTAL ESTIMATED DEMAND THROUGH 2027 (GROWTH + REPLACEMENT)
Software Developers	40,801	0.7%	$111,400	1.9%	20,046
Computer Systems Analysts	14,021	1.1%	$101,200	0.3%	5,068
Computer User Support Specialists	12,647	1.8%	$58,000	0.6%	5,034
Network Support Specialists	7,124	1.9%	$70,700	0.5%	2,778
Network and Computer Systems Administrators	5,689	0.8%	$90,300	0.3%	1,912
Computer Network Architects	3,465	1.0%	$121,200	0.3%	1,086
Software Quality Assurance Analysts and Testers	3,144	0.7%	$91,000	1.8%	1,524
Computer Occupations, All Other	6,610	1.3%	$89,000	0.5%	2,607
All Information Technology Employment in Minnesota	105,835	1.1%	$96,400	1.1%	45,270

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TOP TECH OCCUPATION SKILLS BY WORKER SOCIAL PROFILE

LinkedIn profiles with skills listed from 2017–2021, 176,864 total profiles.

SKILL	FREQUENCY IN PROFILES	PROFILES WITH SKILL
SQL (Programming Language)	14%	24,980
Project Management	13%	22,906
Process Improvement	13%	22,666
Software Development	12%	21,727
Software Engineering	10%	18,553
Agile Methodology	10%	17,855
Business Analysis	10%	17,446
Java (Programming Language)	9%	16,529
JavaScript (Programming Language)	8%	14,602
Strategic Planning	8%	14,479

Tech Talent Supply

IT HIRING STATS

- The IT unemployment rate **stands at 1.1%** as compared to **1.9% statewide unemployment rate**, demonstrating an extremely tight tech labor market.

- Minnesota companies will need at least **45,270 new IT professionals** to replace retirements and other exits due to job changes out of IT careers.

- Software Developers and Software Quality Assurance Analysts and Testers are the most in-demand tech roles in Minnesota, with over **7,000 positions posted monthly** yet **under 1,000 hires per month** on average, meaning there is approximately 1 hire for every 4 unique job posting.

EDUCATION

- **89%** of IT job postings for the MSP metro over the past year required a **bachelor's degree**.

- **Only 60%** of companies nationally **require a bachelor's degree** for software developer roles, demonstrating that Minnesota companies can make changes to compete for talent nationally.

NATIONWIDE RANK

- While Minnesota has traditionally competed well against neighboring states like Wisconsin, **38th** Iowa, North and South Dakota for talent, since the pandemic began Minnesota's **growth of tech workers** has slowed to **38th in the nation**.

- Of our neighboring states, **just North Dakota ranks below us**, while South Dakota is ranked at 15th in the nation for increases of tech cluster jobs since December of 2019.

REMOTE WORK

- Remote work for tech occupations has **increased by 421%** as compared to **195% for all other occupations**, however this also means Minnesota companies need to not just compete with neighboring states for talent, but also with the rest of the country and even the world.

% of Postings Oct 2021-22	IT Roles	All Roles
Fully Onsite	59%	87%
Fully Remote	26%	8%
Hybrid Remote	14%	5%
Temp Remote	1%	0.5%

Diversity

Given the tight labor market demands for tech, employers must find new talent pools to tap into to address their talent needs. Unfortunately, Minnesota is behind much of the country in diverse tech representation. We will not be able to expand our tech talent pool without building more equitable and diverse pathways into tech.

3rd Diversity Index Quartile

TOP

MN

Minnesota is in the bottom half of the country for representative diversity in tech roles.

Black or African American

3.8%

of Minnesota IT workforce are Black or African American, compared to 5.8% across all occupations of employment.

Hispanic or Latinx

2.2%

of Minnesota IT workforce are Hispanic or Latinx, compared to 5.0% across all occupations of employment.

Female

22.2%

of Minnesota IT workforce are female as compared to approximately 50% of the total workforce.

▶ Like many other sectors, diversity remains a challenge within the tech sector. When looking at the diversity within software developers, **just 1% of software developers in the MSP region are Hispanic or Latino** as compared to 6.4% of the MSP workforce overall, while only **2% are Black or African American**, as compared to 9.8% of the total MSP workforce.

▶ We will not close the gap in open positions without major changes in hiring requirements given that **less than 22% of Black, Indigenous, and Hispanic/Latino individuals**, respectively, in the MSP Metro **hold a BA/BS**, and the percentage becomes even smaller when looking at IT related BA/BS degrees.

▶ **89%** of IT job postings have this as a requirement, making it difficult to hire diverse talent unless we address legacy hiring requirements.

Education

Minnesota tech companies will not be able to remain competitive in the years to come without a strong tech talent pipeline, but we are falling behind. **Minnesota ranks last in the country in foundational computer science offerings at public high schools,** and we are not graduating nearly enough postsecondary degree holders to meet employers' tech demands. Investing in creating strong talent pipelines can pay off for Minnesota employers though, as 44% of all high school graduates who enroll in college remain in-state as compared to 18% who leave the state for postsecondary education. And once graduating from postsecondary education, more than 75% of graduates from Minnesota colleges stay in the state, the 5th highest in the nation. This demonstrates that investments made in talent pipelines now lead to more technologists in the state in years to come.

K-12

MN RANKS

50th

OUT OF 50 STATES
IN % OF HIGH SCHOOLS
OFFERING COMPUTER
SCIENCE COURSEWORK

21% VERSUS

53% NATIONALLY

44%   21%   66%

39%   77%
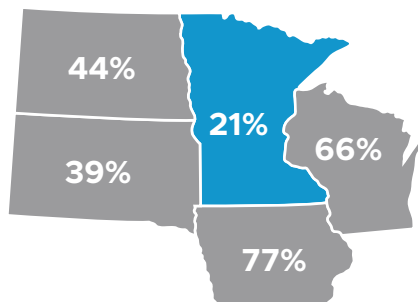
NEIGHBORING STATES
ARE MORE COMMITTED

1,432 AP CS EXAMS TAKEN IN MN IN SCHOOL YEAR 2020-21

23% WOMEN (49% OF STUDENT POPULATION)

4% BLACK/AFRICAN AMERICAN (11% OF STUDENT POPULATION)

4% HISPANIC/LATINO (10% OF STUDENT POPULATION

2% NATIVE AMERICAN/ALASKAN (4% OF STUDENT POPULATION

43.5%

OF MN HIGH
SCHOOL STUDENTS
ATTEND A SCHOOL
THAT OFFERS
FOUNDATIONAL
COMPUTER SCIENCE

PERCENT OF HIGH
SCHOOLS THAT HAVE
FOUNDATIONAL
COMPUTER SCIENCE
COURSES:

12% URBAN

18% SUBURBAN

25% RURAL

MN ONLY HAS

2 of 9

CODE.ORG RECOMMENDED POLICES TO MAKE
COMPUTER SCIENCE FUNDAMENTAL

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MORE THAN

75%

OF GRADUATES FROM MINNESOTA
COLLEGES STAY IN THE STATE

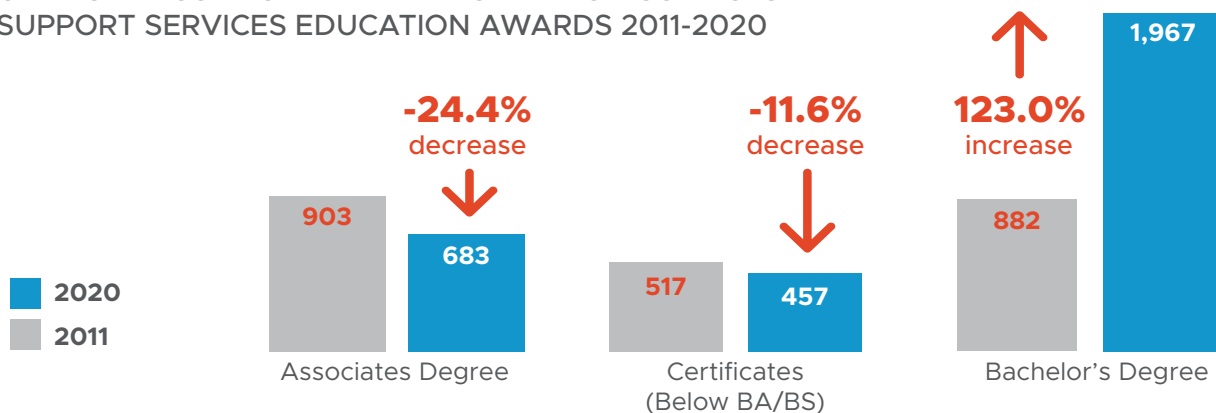**5th highest**

IN THE NATION

Demonstrating that Minnesota companies
could benefit from an increased number of
Minnesota students pursuing tech degrees.

TECH PROFILES IN TECH RELATED OCCUPATIONS:

20,776   UNIVERSITY OF MINNESOTA

6,783   UNIVERSITY OF ST. THOMAS

5,384   ST. CLOUD STATE UNIVERSITY

2,231   HENNEPIN TECH COLLEGE

CHANGE IN COMPUTER AND INFORMATION SCIENCES AND
SUPPORT SERVICES EDUCATION AWARDS 2011-2020

- 2020
- 2011

-24.4%
decrease

903
683

Associates Degree

-11.6%
decrease

517
457

Certificates
(Below BA/BS)

123.0%
increase

882
1,967

Bachelor's Degree

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