

EU-U.S. Trade and Technology Council (TTC)

EU-U.S. Talent for Growth Task Force

Workstream activity report

Workstream 2 – Including women and underrepresented groups in technical jobs

Workstream leader: Michael Lynton, Chair, Snap Inc.

Task Force Co-Chair: Zoë Baird, Senior Counselor for Technology and Economic Growth to Secretary Raimondo, U.S. Department of Commerce

Overview

Despite the critical workforce shortage in both the United States' and Europe's technology sectors, millions of workers face barriers to accessing tech jobs, particularly among women, youth, and underrepresented communities. Recent reports suggest that the scale of the skills gap is significant, and there will be a global shortage of 85 million workers by 2030.ⁱ McKinsey analysis found that there will be a tech talent gap of 1.4 million to 3.9 million people by 2027 for EU countries.ⁱⁱ In the U.S. context, there is an acute workforce gap in the semiconductor and cybersecurity sector. A report from the Semiconductor Industry Association (SIA) found that there is a gap of 1.4 million workers (technicians, computer scientists, and engineers) in the economy, and the United States needs to fill 67,000 of these workers in the semiconductor industry alone by 2030.ⁱⁱⁱ

Despite this looming shortage, there are millions of workers in Europe and the U.S. who face barriers to accessing the jobs in technology essential to our economies. If Europe could double the share of women in the tech workforce to about 45 percent, or an estimated 3.9 million additional women by 2027, it could close this talent gap and benefit from a GDP increase of as much as €260 billion to €600 billion.^{iv} In the U.S., even though women made up half (51%) of the total U.S. population, only 35% of women worked in science, technology, engineering and math (STEM) occupations.^v

Including Women and Underrepresented Groups in Technical Jobs

To help increase the participation of women and underrepresented communities in the technology sector, the Task Force established Workstream Two, led by Task Force member and Chairman of Snap Inc. Michael Lynton. With support from the OECD, Lynton identified the goals of the workstream, which are twofold: 1) Identify the specific barriers to focus on and strategies for overcoming them; and 2) Increase awareness of trainings and jobs available in these technologies and how to access them, particularly among women and underrepresented groups who often do not see themselves represented in these types of jobs.

Workstream Activity

- **July 18, 2023, Workstream 2 Kickoff:** At the meeting, OECD briefed the Task Force on barriers that four target segments face in accessing technology jobs. These target groups are women, youth, migrants, and underserved communities, and the barriers include access to training, discrimination, and unfavorable working conditions. In response, Task Force members discussed a number of solutions to address the problems, including access to good quality apprenticeships, creating a sense of belonging, promoting awareness of these jobs, tackling self-doubt and institutional bias and cultural barriers, and connecting these jobs to a social purpose.
- **July 18, 2023, OECD Call for Innovation Survey:** OECD also launched its call for innovation survey to identify best practices and specific initiatives from the private sector and non-governmental organizations that have been impactful in targeting women and youth.
- **September 27, 2023, Plenary and Workstream 2 Update:** Michael Lynton laid out the challenges and goals of the workstream. He also presented the idea of launching a targeted communications campaign that could, for example, include creating videos that showcase women and young people in tech jobs and developing and implementing an online distribution strategy for these videos via social media platforms.
- **October 17, 2023, European Year of Skills Presentation:** The EC European Year of Skills Team hosted a briefing on their strategy for communications campaigns on 17 October.
- **October 18, 2023, OECD Workshop:** OECD facilitated a workshop focused on introducing innovative practices in the technology sector. In particular, the OECD presented four organizations (DiversIT Charter, Break Through Tech, Bioinformatika, socialbee) to showcase their experiences and success in paving the way to a more diverse and inclusive technology sector.
- **February 1, 2024:** OECD shared its report.
- **February 12, 2024:** Gregory Haile convened a group of education and training providers in the United States and the EU to discuss best practices for successfully connecting underrepresented populations with quality technology jobs.

The Challenges Facing Women, Underrepresented Groups, and Youth People

With support from OECD, the Task Force Members identified a number of barriers that women and underrepresented communities face in accessing technology jobs in the U.S. and EU contexts.

- i. Gender differences in interests, aptitudes and aspirations widen with age.

Societal values tend to evaluate men's competence as greater than women's in STEM, and these values tend to dissuade girls more than boys from STEM subjects. The OECD's Programme for International Student Assessment in 2018 showed 15-year old boys and girls performed similarly in science and mathematics tests, with girls even outperforming boys in some countries.^{vii} However, many girls develop the notion that they cannot pursue particular occupations because they perceive them as inappropriate for their gender.^{viii} In addition, girls assessed their mathematical ability lower than boys with equal past achievement while holding themselves to a higher

standard in the subject.^{ix} As a result, girls had lower confidence in their ability to excel in STEM subjects and were less likely to express interest in a STEM career.^x

- ii. A lack of role models discourages some socio-demographic groups from choosing careers in technology.

OECD research found that young girls are more likely to see men in high-profile, leadership roles in STEM fields. For example, the OECD specifically found that in the ICT sector only 2.7% of women start businesses, compared to 4.7% of men, and that as of 2022, only 24% of global technology leadership roles were held by women.^{xi} There are fewer women in tech to be role models for girls than there are men for boys.

The statistics are similarly poor for underrepresented groups. In the United States, Black employees represent only 7.4% of tech workers.^{xii} While in the United States women account for 26.7% of the technology workforce, Black women are only 1.7% and Latina women only 1.5% of that same workforce.^{xiii} Among migrants to the U.K. and Germany, only 44% of migrant students felt that they could have careers in science.^{xiv}

A lack of exposure to successful and relatable role models has been shown to impact girls' subject choices, ultimately affecting their choice of career. Exposure to more female mathematics and science teachers in high school increased a girl's choice to enroll in and graduate from a STEM-related university degree, and women who had female STEM teachers in introductory college classes were more likely to complete a major in STEM.^{xv} A study in France found that just one hour of exposure to a female role model in science increased the likelihood of girls enrolling in additional STEM education by 10 percentage points.^{xvi}

Similarly, in the United States, research showed that when a group of middle schools girls was exposed to a short narrative describing the lives of female engineers and the benefits of engineering careers, and the girls' interest in engineering increased as a result.^{xvii} The narrative included positive statements about students' abilities to meet the demands of engineering careers and counteracted stereotypes of engineering as an antisocial, unusual career for women while emphasizing the people-oriented and socially beneficial aspects of engineering.^{xviii} In another experiment, a group of high-achieving, mostly minority, high school girls were taught about what scientists and engineers actually do and how they contribute to society.^{xix} After two years, 80% of the girls who remained with the study said they were seriously considering a career in engineering.^{xx} And a study from Indiana University – Purdue University Indianapolis in the United States further found that Black female students were more likely to stay in STEM careers if they had a Black female role model.^{xxi}

- iii. Barriers to training limit adults' digital upskilling capabilities

Men and women in advanced economies start with similar levels of basic technology skills, but men tend to have more advanced digital skills- meaning the need for training is greater among women.^{xxii} For example, 18% of 16-24-year old men in the European Union can write code compared to only 9% of their female counterparts.^{xxiii} But despite the fact that the need for training is greater for women, fewer women undertake training. 2021 research by the European Institute for Gender Equality found that while 22% of men took some form of digital upskilling training in 2018, only 18% of women did.^{xxiv}

Youth in particular will need more digital upskilling throughout their careers than people of past generations, as technology will change rapidly throughout their lifetimes. Young people recognize the challenge they are facing – the OECD found that among 18-24-year olds, almost half fear “their skills and knowledge won’t be in demand in the future, and don’t feel ready for the future world of work.”^{xxv} Young women were less confident about their readiness than young men.^{xxvi}

Upskilling can help to level the digital playing field, but it needs to be accessible. For example, OECD analysis found that, “of those who wished to but did not participate in adult learning, women were significantly more likely than men to report that a lack of time due to childcare or family responsibilities prevented them from participating.”^{xxvii} As women tend to be the primary caregivers, greater flexibility in training options can improve women’s participation in training.^{xxviii}

Catalyzed Action

At the final meeting for *Workstream 2: Including women and underrepresented groups in technical jobs*, Gregory Haile led a conversation with Community College leadership across the United States to share best practices that have led to greater participation by women and underserved communities in tech training. The speakers were Dr. Marcia Ballinger from Lorain County Community College, Dr. Scott Ralls from Wake Tech Community College, Dr. Mike Flores from Alamo College District, Dr. Jermaine F. Williams from Montgomery College, and Dr. Sunita Cooke from MiraCosta Community College.

Dr. Ballinger spoke about dual-enrollment with K-12 partnerships to create an on-ramp that diversifies entry into Lorain County Community College, fast-tracked adult learning programs to re-design curriculums that attract adult learners and eliminate barriers of cost and time, and learn-and-earn programs that require employers to pay student employees (in contrast with unpaid internships) that help students work in a career field directly related to what they are studying. Since Lorain County Community College is located near a new \$20 billion Intel investment fabrication center, some of these initiatives work with Intel and focus on the semiconductor industry.

Dr. Cooke shared efforts of outreach to elementary school students, and presented on the grant programs MiraCosta Community College offers to younger students starting in middle school through college, their mentorship and target outreach programs, such as the ‘Black Nerds Expo’ and the Girls Stem Practice that helps students see themselves in particular roles, and the unique financial support that California offers to community colleges. She shared that creating a sense of belonging was key.

In Dr. Ralls’ presentation, he mentioned Wake Tech’s Community College’s dual enrollment programs with four early-college high schools, degree-plus skills initiatives that provide students with ‘care teams’ in thirteen different industries, and targeted outreach to students in areas with a low economic health index. For instance, Wake Tech has an embedded workforce counselor at the Boys and Girls Club to help kids see opportunities within their communities. They partnered with employers on scheduling for students, so students could plan to work 3 days and attend college for 2 days.

Dr. Flores, the Chancellor of Alamo College District, a five-college system, focused his comments on both the practice and the policy elements of his work. In practice, they

have the 'promise' program' that includes partnerships with local governments to get underrepresented people into jobs and 'pathways' programs aimed at five high-demand sectors, such as cybersecurity. For policy, Dr. Flores mentioned Texas' recent legislation to invest \$750 million in Community Colleges focused on three key areas: economically disadvantaged students, students academically underprepared for college-level work, and students over the age of twenty-five.

Finally, Dr. Williams discussed equitable approaches to completion and post-completion success in the form of strategic partnerships. He mentioned how Montgomery College collaborates with organizations from J.P. Morgan to local workforce boards to help under-served communities. He also mentioned how, as we think about continuing opportunities, we need to consider marketing, recruitment, and mentoring that are culturally relevant and help students see themselves in these roles.

Overall, early outreach, partnerships between community colleges and both the private and public sector, and diverse mentors from roles that students aspire to fulfill were prevailing themes. We will seek to share and activate these learnings on a broad scale.

*Adopted by workstream leader
Michael Lynton (Chair, Snap Inc.)
on 25 March 2024:*

A handwritten signature in cursive script that reads "Michael Lynton".

References

- ⁱ <https://www.kornferry.com/insights/this-week-in-leadership/talent-crunch-future-of-work>
- <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/women-in-tech-the-best-bet-to-solve-europes-talent-shortage>
- ⁱⁱⁱ <https://www.semiconductors.org/america-faces-significant-shortage-of-tech-workers-in-semiconductor-industry-and-throughout-u-s-economy/#:~:text=WASHINGTON%E2%80%94July%2025%2C%202023%E2%80%94,these%20workers%20in%20the%20semiconductor>
- ^{iv} *Id.*
- ^v National Center for Science and Engineering Statistics (NCSES). 2023. *Diversity and STEM: Women, Minorities, and Persons with Disabilities 2023*. Special Report NSF 23-315. Alexandria, VA: National Science Foundation. Available at <https://ncses.nsf.gov/wmpd>. [hereinafter *Diversity and STEM*], 6 and 15.
- ^{vi} Across OECD countries, girls slightly outperform boys in Finland, Iceland, Israel, Lithuania, Norway, Sweden in mathematics, and in Canada, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Iceland, Ireland, Israel, Latvia, Lithuania, Luxembourg, Netherlands, Slovak Republic, Slovenia, Sweden, Türkiye in science (OECD, 2018). <https://www.oecd.org/pisa/publications/pisa-2018-results.htm>
- ^{vii} OECD, 2018; OECD, 2019a.
- ^{viii} Catherine Hill, *Why So Few? Women in Science, Technology, Engineering & Mathematics*, AAUW 2010, <https://www.aauw.org/resources/research/the-stem-gap/>, 21 [hereinafter *Why So Few?*]
- ^{ix} *Why So Few?*
- ^x *Id.*
- ^{xi} OECD Report, citing World Economic Forum, 2022.
- ^{xii} [Jobs for the Future report highlights need for tech opportunities for Black talent \(cnbc.com\)](https://www.cnbc.com)
- ^{xiii} [TCInsightsReport_FINAL.pdf \(anitab.org\)](https://www.anitab.org)
- ^{xiv} [Improving the odds for underrepresented groups in science | The OECD Forum Network \(oecd-forum.org\)](https://www.oecd.org)
- ^{xv} OECD Report, Carrell et al., 2010.
- ^{xvi} OECD Report, Breda et al, 2020.
- ^{xvii} *Why so few?* 23
- ^{xviii} *Id.*
- ^{xix} *Id.*
- ^{xx} *Id.*
- ^{xxi} [Exploring Identity-Safety Cues and Allyship Among Black Women Students in STEM Environments - India R. Johnson, Evava S. Pietri, Felicia Fullilove, Samantha Mowrer, 2019 \(sagepub.com\)](https://www.sagepub.com)
- ^{xxii} *Women in the Digital Age*, European Commission Publications Office, Brussels, <https://data.europa.eu/doi/10.2759/517222>.
- ^{xxiii} Going Digital Toolkit: Women as a share of all 16-24 year-olds who can program, accessed 4 March 2024, <https://goingdigital.oecd.org/indicator/54>.
- ^{xxiv} European Institute for Gender Equality (2021), *Gender equality index 2020: Key findings for the EU*, Publications Office of the European Union, Luxembourg, <https://doi.org/10.2839/341140>.
- ^{xxv} Youth Voice for the Future of Work, https://www.educationandemployers.org/wp-content/uploads/2019/08/WSI_OECD_research_final_report_single_pages.pdf.

xxvi *Id.*

xxvii OECD (2023), Flexible adult learning provision: What it is, why it matters, and how to make it work <https://www.oecd.org/els/emp/skills-and-work/adult-learning/booklet-flexibility-2023.pdf>.

xxviii *Id.*