ICTC CTIC

Empowering Women in the Digital Economy:

Addressing Tech's Untapped Potential

Research by

ICTC CTIC

Information and Communications Technology Council

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Femmes et Égalité des genres Canada

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Preface

The Information and Communications Technology Council (ICTC) is a not-for-profit, national centre of expertise for strengthening Canada's digital advantage in a global economy. Through trusted research, practical policy advice, and creative capacity-building programs, ICTC fosters globally competitive Canadian industries enabled by innovative and diverse digital talent. In partnership with an expansive network of industry leaders, academic partners, and policymakers from across Canada, ICTC has empowered a robust and inclusive digital economy for over 30 years.

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Background

This report is a part of a larger, multi-year project by ICTC and funded by Women and Gender Equality (WAGE) Canada. This project includes multiple phases, which seek to enhance gender diversity in Canada's digital economy. This report, *Empowering Women in the Digital Economy: Addressing Tech's Untapped Potential*, builds on ICTC's 2022 study on gender equity,[1] this time focusing on mid- to senior-level talent. This report examines the state of gender diversity in senior-level, managerial-level, and leadership-level positions in the digital economy, seeks to better understand instances where women leave mid-career, and highlights strategies and policies needed to increase gender diversity in leadership roles. This report will contribute to developing a toolkit for key change agents (e.g., policymakers, industry councils, employers, and leaders) to help address some of the systemic barriers to gender diversity in mid- to senior-level tech roles.

1 Maryna Ivus and Maya Watson, "Gender Equity in Canada's Tech Ecosystem," 2022, Information and Communications Technology Council, https://www.digitalthinktankictc.com/ictc-admin/resources/admin/ict001genderreportdesignfnl-2.pdf

Executive Summary

Gender diversity in leadership is associated with profitability and innovation: supporting gender diversity is key to strengthening Canada's digital economy. Fortunately, the number of women working in Canada's digital economy is rising. The rate at which women are entering the digital economy is also rising, having gained momentum during the COVID-19 pandemic.

Nevertheless, gender diversity is challenged at the senior level in Canada's digital economy. Women aged 45–54—the age group that would typically hold most mid- and senior-level roles—is the slowest growing cohort in the digital economy. Women in Canada are underrepresented in management roles across the economy, and this trend holds true for digital economy management occupations. Similarly, gender discrepancies are especially pronounced in senior and executive roles in Canada. In 2022 women held 26% of seats on boards across all TSX-listed companies. While that is an improvement from 2015, where women only held 10% of board seats, there is still a lot of work to be done.

Much of the existing research on women's career pathways in the digital economy uses the metaphor of the "leaky pipeline" in reference to women who choose to step away from advancing their careers in science, technology, engineering, and mathematics (STEM). Nevertheless, contemporary researchers have focused instead on "broken scaffolding," positioning this problem not as one driven by women's choices but by the lack of diversity-enabling infrastructure in the digital economy. Accordingly, a systems-thinking approach helps identify the individual, organizational, and ecosystem-wide challenges preventing women and people of marginalized genders from advancing in their careers.

At the individual level, managers and leaders can work to address two key barriers: (I) visibility and informal promotional structures, and (II) uneven implementation of organizational policy. The first barrier, visibility, exists partly because of social structures in the industry that prevent and reduce women's face time with their managers; it is the classic boy's club scenario. Reduced facetime can adversely impact relationships between women and their managers and can result in women being passed up for promotions.

To address this barrier, managers and leaders can implement low-cost interventions like virtual watercoolers to increase face-to-face interactions in a virtual work environment, act as sponsors and advocates, and male leaders can become allies to women in the digital economy. The second barrier, unenforced organizational policy, challenges the success of equity, diversity, and inclusion (EDI) policies when senior-level managers and executives lack buy-in. Without this tangible commitment, EDI policies can fall by the wayside. As such, it is important that the digital economy builds inclusive leaders that can enact meaningful change across an organization.

At the organizational level, gender biases in promotions, performance reviews, and division of tasks were noted by focus group attendees as needing significant attention. For example, the belief that women cannot handle direct feedback and constructive criticism because they are more sensitive was frequently referenced. Women in this study expressed that such instances have harmed their ability to grow and improve, ultimately impacting career progression. If left unchecked, gender bias can result in discrimination and legal consequences. To counter gender biases, it is recommended that organizations audit gender bias in performance reviews, build standardized, data-driven promotional structures, and commit to strong and implementable EDI policies.

Organizational challenges are complex and extend beyond gender biases. Another key challenge affecting gender equity at the organizational level is the gender pay gap: unfortunately, ICTC's analysis shows that a gender pay gap persists across the digital economy. Organizations can prioritize salary transparency to support pay equity. In addition, women in tech engaged in this study noted sentiments of isolation, tokenism, and imposter syndrome. These challenges can be attributed to the lack of gender parity in tech, especially in senior-level roles.

Organizations can help build networks for women in tech (within and beyond the organization) and prioritize informal and formal mentorships to support women as they progress throughout their careers. Strong workplace policies that emphasize family values, work-life balance, and mental well-being are also key examples. While individual-level and organizational-level barriers must be addressed, participants engaged in this study noted that barriers to representation of women in leadership occur across the wider technology ecosystem. Notably, gender stereotyping about leadership (e.g., who makes a good leader and what qualities a leader needs to succeed) can cause women to self-select out of leadership roles. To help advance women into senior positions, it is important to address such stereotypes early when career decisions are being made (e.g., during university).

This can be done by celebrating and showcasing the successes of women leaders in the digital economy through ecosystem-wide initiatives. Additionally, it is important to address the gap in women founders of startups. Increasing access to capital for women-led start-ups, building accelerators and mentorship programs to help women with their business pitches and business plans, and providing access to strong networks are all potential action items on this journey.

Strategies to increase diversity at the individual, organizational, and ecosystem levels must be customized and tailored to meet specific targets and goals. Women in the digital economy engaged in focus groups for this study suggested that such strategies, policies, and programs should be co-created with affected groups. Employee resource groups (ERGs) that build a safe space for employees to communicate their challenges and needs have been noted as one avenue. After EDI initiatives are implemented, key performance indicators (KPIs) should be used to monitor and evaluate program success. When created and monitored with care, EDI strategies such as those highlighted in this report, can have meaningful impacts on creating a more inclusive digital economy that supports women as they progress through their careers.

Glossary of Terms

Cisgender: identifies a person whose personal identity and gender correspond with their recorded sex at birth.

Digital economy: both digital occupations and digital industries, comprised of tech workers (in all sectors) and (all) workers in the tech sector.[2]

People of Marginalized Genders: people who experience marginalization due to their gender; a shared experience between trans women, as well as all trans, Two Spirit, gender nonconforming, and nonbinary people.[3]

Gender non-conforming (GNC): an expression of gender that does not adhere to either men's or women's norms, including individuals who present as gender fluid or nonbinary.

Trans or transgender: a person whose gender identity differs from their designated sex at birth.[4]

Woman: a person who identifies as a woman, including cis and trans women.[5]

Women in Tech: A colloquial term used to describe women working in the digital economy. Women in tech are, therefore, inclusive of women working in digital occupations and digital industries and comprise women tech workers (in all sectors) and (all) women workers in the tech sector.

Critical Systems Thinking: A multidisciplinary approach to thinking and research, rooted in systems and critical social theory. It has been used in management research to bring together all stakeholders, evaluate and map out complex and interconnected organizational systems, and develop strategies, structures, and processes for change management.[6]

Intersectional Analysis: A research lens that begins with the view that gender cannot be studied in isolation and must instead be understood "in relation to other forms of diversity," including sexual identity, race and ethnicity, Indigeneity, and ability.[7] Intersectional analysis applies and is inspired by anti-racist, postcolonial, decolonial, and transnational feminist research. Intersectional analysis seeks to understand the relationship between power and identity. Intersectional analysis recognizes that individuals are subject to multiple forms of social and structural barriers simultaneously and therefore have diverse and unique experiences.[8]

2 Alexandra Cutean, Rosina Hamoni, Ryan MacLaughlin and Zhenzhen Ye, "Canada's Growth Currency: Digital Talent Outlook 2023," 2023, Information and Communications Technology Council, https://www.digitalthinktankictc.com/ictc-admin/resources/admin/canada-growth-currency-2019-final-eng-10-28-19-1.pdf

3 "What do we mean by 'people of marginalized genders?" WAVAW Rape Crisis Centre, January 16, 2019, https://www.wavaw.ca/what-do-we-mean-by-people-of-marginalized-genders/; Maryna Ivus and Maya Watson, "Gender Equity in Canada's Tech Ecosystem," 2022, Information and Communications Technology Council, https://www.digitalthinktankictc.com/ictc-admin/resources/admin/ict001genderreportdesignfnl-2.pdf

4 Egale, "2SLGBTQI Terms and Concepts," https://egale.ca/awareness/terms-and-concepts-updated/

5 Maryna Ivus and Maya Watson, "Gender Equity in Canada's Tech Ecosystem," 2022, Information and Communications Technology Council, https://www.digitalthinktankictc.com/ictc-admin/resources/admin/ict001genderreportdesignfnl-2.pdf

6 https://www.academia.edu/10400891/Critical_Systems_Theory_for_Qualitative_Research_Methodology

7 Chia Longman and Katrien De Graeve, "From Happy to Critical Diversity: Intersectionality as a Paradigm for Gender and Diversity Studies," DiGeSt. Journal of Diversity and Gender Studies, 1(1), 2014, https://doi.org/10.11116/jdivegendstud.1.1.0033

8 Chia Longman and Katrien De Graeve, "From Happy to Critical Diversity."

List of Abbreviations

BIPOC	Black, Indigenous and People of Colour
EDI	Equity, diversity, and inclusion
ERGs	Employee resource groups
HR	Human resources
ICT	Information and communications technology
ICTC	Information and Communications Technology Council
KPIs	Key performance indicators
GDP	Gross domestic product
GNC	Gender non-conforming
LGBTQIA2S+	Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, Intersex, Asexual, Two-Spirited, and plus other people of gender minorities
R&D	Research and development
SET	Science, engineering, and technology
STEM	Science, technology, engineering, and math

Introduction

Initial job losses during the COVID-19 pandemic were widespread but had disproportionate economic impacts to women. As many as 3 million jobs were lost in the first few months after pandemic-related health restrictions were enforced.[9] At its peak, the shutdown resulted in approximately 17% of all women in the workforce losing employment, compared to approximately 14% of men.[10] While some sectors (like the service industries, where women are overrepresented) suffered, the digital economy was not only resilient but thrived.[11] Here, the "digital economy" refers to both technology occupations and non-technology occupations in the tech sector, plus all digital and technology occupations across other sectors of the economy.[12]

Workers in the digital economy were sheltered from the general contraction of employment caused by the pandemic.[13] Further, the ability to work from home attracted new talent to the digital economy because of the flexibility and stability that it offered. However, the pandemic came with mixed results for women in digital economy roles: while a recent survey of women in mid-level roles found that working from home made completing their managerial tasks easier, it also identified that 44% of women spent more than 20 hours a week on caregiving duties, compared to 33% of men.[14] Importantly, these imbalances in caregiving duties underscored during the pandemic are one of many systemic barriers affecting women's representation in the digital economy.

9 LMIC. LMI Insights Report no. 39, Women in Recession: What Makes COVID-19 Different. https://lmic-cimt.ca/publications-all/lmi-insight-report-no-39/

10 Ibid.

11 Trevor Quan, Khiran O'Neil, Emerick Mary and Sylvie Leblanc, "Emergent Employment: Canadian Findings on the Future of Work," ICTC, August 4, 2021, https://www.digitalthinktankictc.com/reports/emergent-employment

12 The language "Digital Economy" and "Tech-Sector" are not interchangeable. The tech sector refers to a subset of the larger digital economy, and as a result, differences exist between the two. Care should be taken in extrapolating evidence from the tech sector and applying it to the digital economy, as experiences in the tech sector may not always be indicative of experiences in technology occupations in other sectors.

13 In this paper, the labour force for the digital economy is defined by the intersection of individuals working in specific internet and communication technology (ICT) National Occupation Classifications (NOCs) in ICT industries using the North American Industry Classification System (NAICS).

14 Naveen Awad, Matt Krentz, Andrea Gallego, and Beth Viner, "The Pandemic's Lasting and Surprising Effects on Women in Tech," Boston Consulting Group, August 2022, https://www.bcg.com/en-ca/publications/2022/how-the-pandemic-continues-to-affect-womenmen-leaders-in-tech

This study builds on ICTC's previous report, *Gender Equity in Canada's Technology Ecosystem*.[15] The first study focused on attracting and retaining entry-level talent of diverse genders to the digital economy. This report addresses career progression and advancement and is focused on mid-level, senior-level, and leadership-level roles. This study finds that gender diversity decreases with seniority in the digital economy. It seeks to identify the barriers to advancement and the opportunities for improving the inclusion of women in leadership roles.

In addition to drawing from the experiences of scholars and researchers who have approached the topic of career advancement in the digital economy from an intersectional lens, this study relies on extensive primary qualitative research. Women in technology and tech employers shared their experiences and insights on gender equity through a series of focus groups, a co-design workshop, and advisory committee meetings.[16]

Section I outlines major trends in gender representation and equity in the digital economy by role and seniority, taking an intersectional approach when data is available. This section focuses on gender representation on boards and in executive officer positions in Canada while also addressing the impact of the COVID-19 pandemic on career progression for women in the digital economy.

Section II presents strategies for different stakeholders (including policymakers, industry associations, and managers) but primarily focuses on digital economy employers. This section uses a critical systems lens to approach change by thoughtfully exploring multiple perspectives and considering solutions in terms of systems of change. It walks through barriers to career progression and potential interventions, addressing gender stereotypes, the gender gap among startup founders, performance reviews, and tokenism, among many other topics.

15 Maryna Ivus, Maya Watson, "Gender Equity in Canada's Technology Ecosystem," Information and Communication Technology Council, 2022, https://www.digitalthinktankictc.com/reports/gender-equity-in-canadas-tech-ecosystem

16 See Appendix B for details; Unless otherwise specified, woman/women is trans-inclusive and refers to all those that identify as a woman.

Representation and Seniority:

Gender in Canada's Technology Workforce

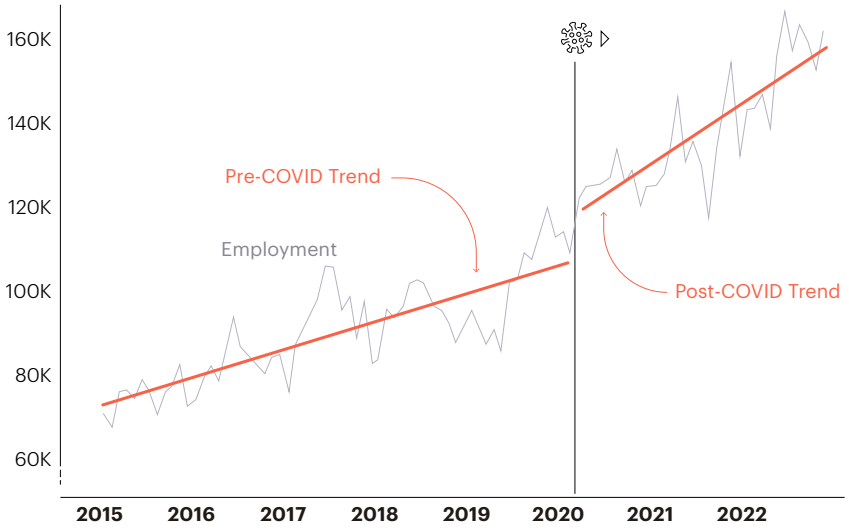
Section I provides an overview of the current state of gender representation in the digital economy. It first looks at the total number of women employed in the digital economy over time, the rate at which women enter the digital economy for the first time, and women's share of total digital economy employment. It then breaks down gender representation by specific roles, including technical and non-technical roles and mid-level and senior leadership roles, with a focus on intersectional data where available. Finally, it begins to address the reasons why women might leave the digital economy, including an examination of the role of the COVID-19 pandemic.

Gender Representation in the Digital Economy

According to Statistics Canada's Labour Force Survey, the total number of women working in Canada's digital economy is on the rise (see Figure 1). First, there are more women working in the digital economy in 2022 than before the pandemic. Further, the rate of growth for women working in the digital economy is also rising; it appears to have accelerated during the pandemic. Notably, women aged 25–34 working in the digital economy are the fastest-growing group of women.[17] In fact, between January 2015 and December 2022, women represented approximately 37% of all people aged 25–34 who entered the digital economy. It seems that Canada's digital economy is experiencing an influx of women, many of whom, given their age, are likely in the early stages of their careers.

17 Women aged 25-34 working in the digital economy are growing at a rate of approximately 485 individuals per month; women aged 35-44 working in the digital economy are growing at a rate of approximately 165 individuals per month.

Fig. 1 Number of Women Employed in the Digital Economy

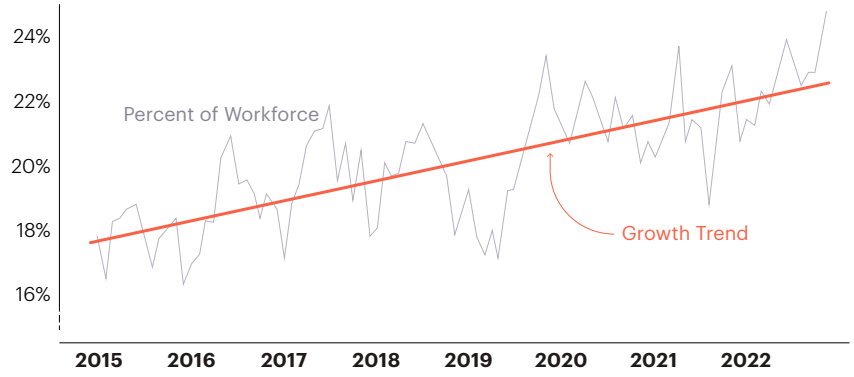


In Canada, the number of women working in the digital economy is increasing at a faster rate post-pandemic.

Source: Statistics Canada – Labour Force Survey, ICTC analysis.[18]
Note: Employment numbers are adjusted for seasonality.

Additionally, women captured a growing share of digital economy employment from 2015 to 2022 (see Figure 2). In January 2015, women accounted for 17.5% of individuals employed in Canada's digital economy, and by November 2022, this percentage grew to approximately 22.5%. The growth trend (as seen in Figure 2) shows steady and positive growth, with women continuing to capture a larger share of the digital economy work.[19]

Fig. 2 Women's Digital Economy Participation Rate



In Canada, women's participation in the digital economy is steadily growing.

Source: Statistics Canada – Labour Force Survey, ICTC analysis.[20]
Note: Employment numbers are adjusted for seasonality.

18 Statistic Canada's Labour Force Survey does not include information on transgender or gender nonconforming individuals. Analysis completed by ICTC.

19 The pandemic does not appear to have caused a statistically significant change in the growth rate of the share of work held by women.

20 Statistic Canada's Labour Force Survey does not include information on transgender or gender nonconforming individuals. Analysis completed by ICTC.

While the direction of these trends is promising, there is much room to improve women's total representation. Data from Statistics Canada's Labour Force Survey shows that women aged 45–54 —the age group that would typically hold most mid- and senior-level roles—is the slowest-growing cohort in the digital economy.[21] When compared to younger cohorts, the growth rate of women aged 45–54 appears low. Women aged 45–54 are growing at a rate of approximately 53 individuals per month. Whereas women aged 25–34 and 35–44 are growing at approximately 485 and 170 individuals per month, respectively.

Previous work has suggested that women in STEM in Canada are more likely to leave the STEM workforce, with one Statistics Canada study showing that over the course of 10 years (2006–2016), 13.7% of women STEM graduates in the sample had left the workforce entirely (compared with 8.3% of men) and 75.4% of had moved to non-STEM roles, compared with 50.3% of men.[22] The study also found that many of the women STEM graduates who did not end up in STEM careers had simply never entered the STEM workforce at all (62.3% compared with 41.6% of men), suggesting that in addition to mid-career drop-off, women are choosing to not pursue STEM careers immediately after their degrees.[23]

Gender Representation by Role Type

Understanding women's representation and where women work in the digital economy can be challenging. As stated earlier, digital economy employment includes the tech sector (both technology and non-technology-related roles) and individuals working in technology roles in other sectors. However, much existing research focuses on the tech sector alone, which is only a subset of the larger digital economy. In the tech sector, women appear to be underrepresented in technology roles. For example, a study by Deloitte found that in 2021, women made up 32.2% of the tech sector in the U.S. but only 24% of technology roles.[24] Similar trends emerge when looking at the digital economy in Canada. Women's representation in key technology occupations is below economy-wide participation rates, with only one tech role breaking the 48% threshold (see Figure 3).[25]

21 Labour Force Survey from Statistics Canada, 2015 - 2022

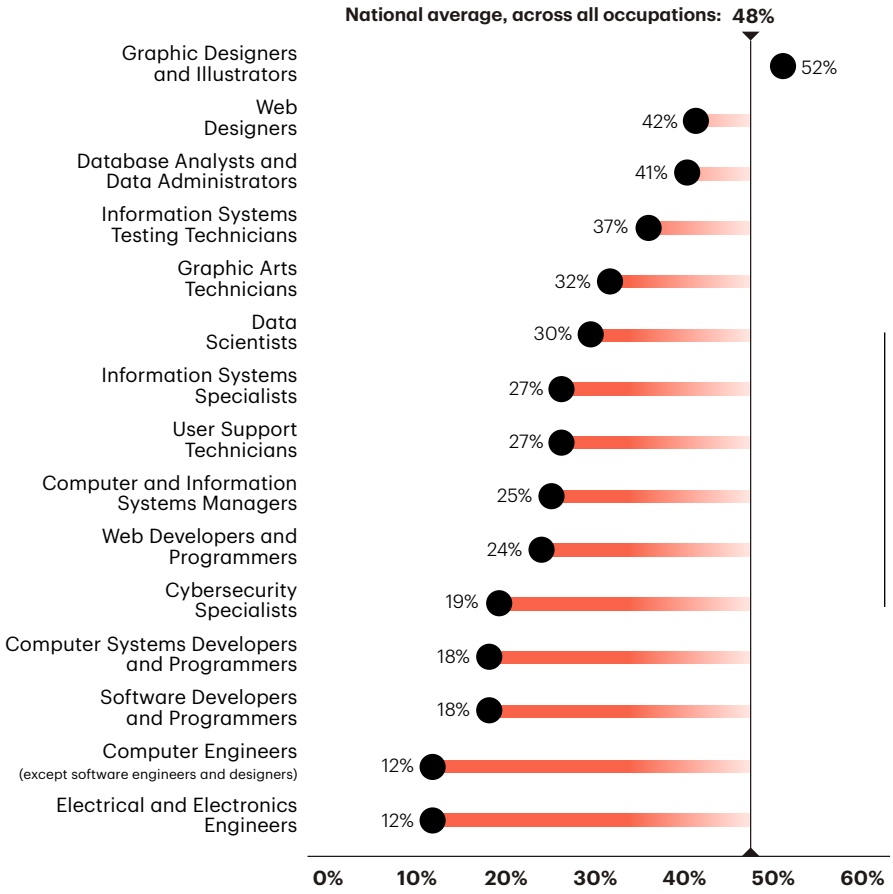
22 Kristyn Frank, " A Gender Analysis of the Occupational Pathways of STEM Graduates in Canada," Statistics Canada, Sept 2019, https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019017-eng.htm [ibid]

23 Ibid.

24 Susanne Hupfer et al. "Women in the tech industry: gaining ground, but facing new headwinds," Deloitte Insights, December 01, 2021, https://www2.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2022/statistics-show-women-in-technology-are-facing-new-headwinds.html

25 Women's participation rate is approximately 48% for all of Canada across all industries. Women make up 48% of the employed workforce.

Fig. 3 Proportion of Women Working in Key ICT Positions



In Canada, there are large gaps in the proportion of women in ICT occupations compared to the national average.

Source: Statistics Canada, 2021 Census Table: 98-10-0412-01, ICTC analysis.[26]

When looking more broadly at science, technology, engineering, and mathematics (STEM) roles, women's representation continues to fall behind that of men. The participation of racialized women in STEM is much lower, with racialized women making up only 10% of all STEM occupations in Canada (Figure 4), despite comprising about 13% of Canada's total labour force.[28] When breaking down the different fields that make up STEM, racialized women are slightly better represented in science and technology occupations (14%) and mathematics, computer and information sciences (13%) versus engineering and engineering technology (9%).[29]

26 These numbers are trans-inclusive. Estimates are from the 2021 census data, which uses Men+ and Women+ groupings when providing average and median wage data. This employment data does not include nonbinary and gender-nonconforming individuals. Analysis completed by ICTC.

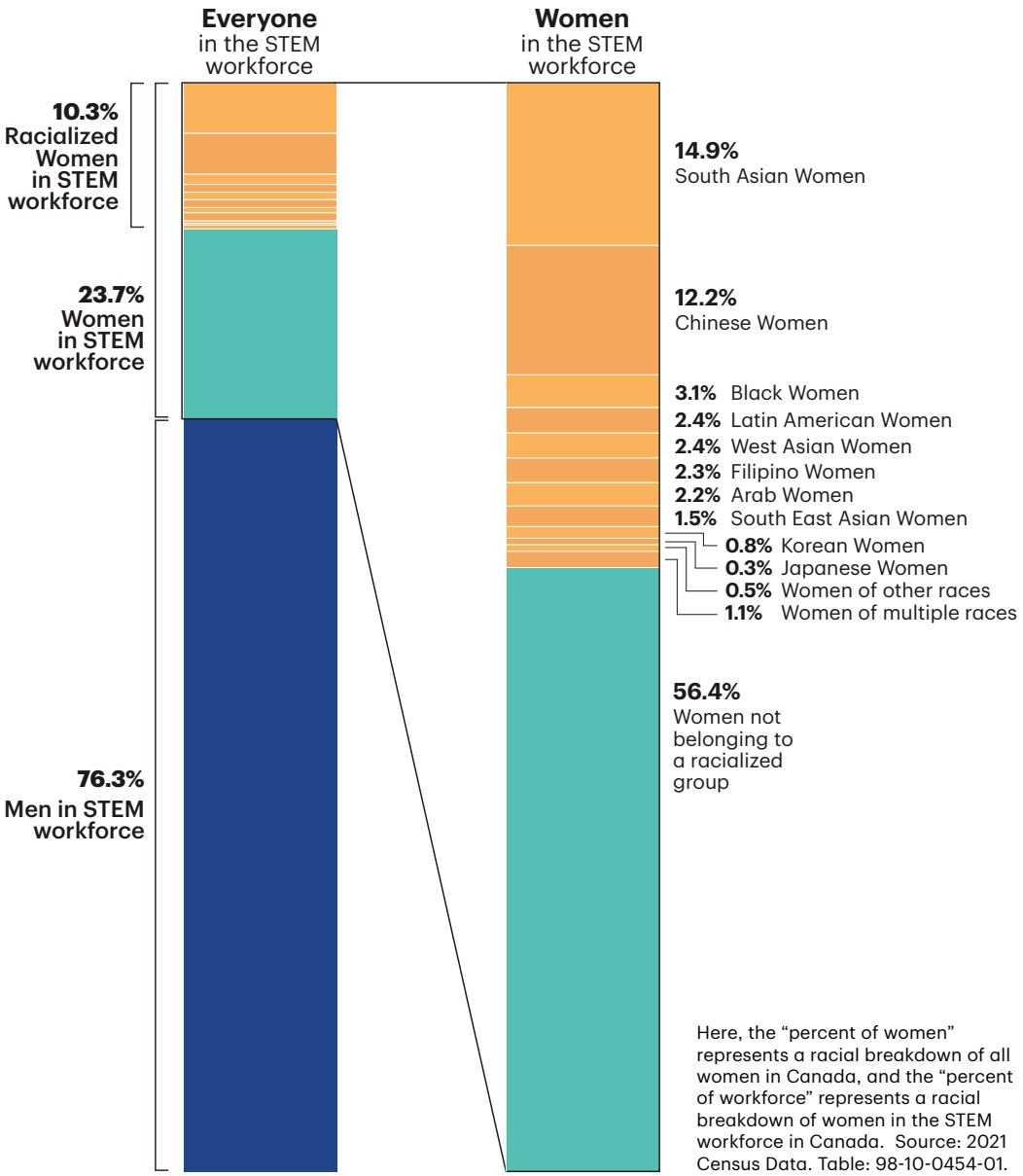
27 2021 Canadian Census, "Occupation (STEM and non-STEM) by visible minority, generation status, age and gender: Canada, provinces and territories, census metropolitan areas and census agglomerations with parts," Statistics Canada, 2022, Table: 98-10-0454-01. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810045401

28 Statistics Canada, Labour force characteristics by visible minority group, three-month moving averages, monthly, unadjusted for seasonality, Table: 14-10-0373-01, accessed March 30, 2023, https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410037301.

29 2021 Canadian Census, "Occupation (STEM and non-STEM) by visible minority, generation status, age and gender: Canada, provinces and territories, census metropolitan areas and census agglomerations with parts," Statistics Canada, 2022, Table: 98-10-0454-01. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810045401

Examining intersectional data highlights important differences between genders in Canada. For example, South Asian women and Chinese women make up about 4% and 3%, respectively, of all STEM occupations in Canada, and each comprises approximately 3% of the Canadian workforce. Among the categories of racialized persons noted, South Asian women hold 5% of all mathematics, computer, and information science occupations. However, Black women hold only 1% of STEM-related occupations, even though Black women comprise over 3% of Canada's total workforce.[30]

Fig. 4[31] Proportion of Women in STEM Occupations by Racial Identity



Here, the "percent of women" represents a racial breakdown of all women in Canada, and the "percent of workforce" represents a racial breakdown of women in the STEM workforce in Canada. Source: 2021 Census Data. Table: 98-10-0454-01.

30 Figure 4 and Statistics Canada, Labour force characteristics by visible minority group, three-month moving averages, monthly, unadjusted for seasonality, Table: 14-10-0373-01, accessed March 30, 2023, https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410037301

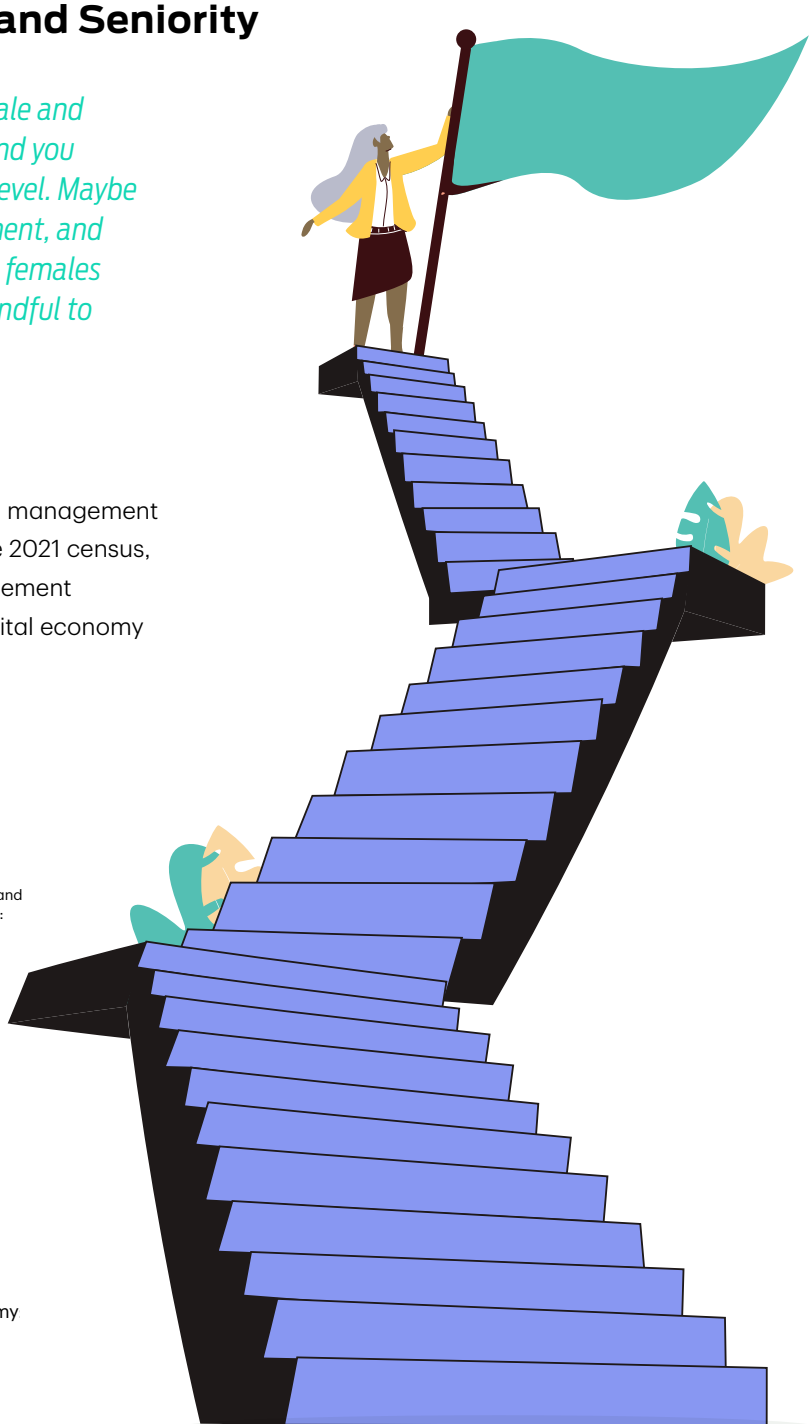
31 Racialized groups included in Figure 4 include self-identified racialized categories based on the following categories – South Asian, Chinese, Black, Filipino, Arab, Latin American, Southeast Asian, West Asian, Korean, Japanese, visible minorities not included elsewhere, and multiple visible minorities. Women in this graph are based on self-identified gender and are trans inclusive.

Underrepresentation of racialized women in STEM may affect career satisfaction and career progression. In one study of approximately 7000 managers in the information and communications technology (ICT) sector in Canada, 65% of racialized individuals reported satisfaction with their overall career goals (vs. 79% of non-racialized peoples), and 52% reported satisfaction with goals for advancement (67% for non-racialized people).[32] The intersectional intricacies of challenges faced by racialized individuals in the digital economy are expanded upon later in the report. Meanwhile, there is a minimal amount of data on the representation of other people of marginalized genders (e.g., gender no conforming, two-spirited, and nonbinary folks) in the digital economy for mid- and senior roles, which itself is data; this knowledge gap suggests that further study is required to gather a full picture of gender equity in STEM.

Gender Representation and Seniority

Women in Tech, Focus Group Attendee

Maybe there is a 50/50 split between male and female, but then you dissect it further, and you realize that females are all at the entry level. Maybe [you have some] up to middle management, and once you hit a director level, you have no females anymore, or maybe you [only] have a handful to make it past the director level.



Managers in the Digital Economy

Women in Canada are underrepresented in management roles across the economy (according to the 2021 census, women in Canada hold only 39% of management occupations).[33] This trend holds true for digital economy management occupations.

32 Intersectional data was not available in this study. Wendy Cukier, Margaret Yap, Mark Robert Holmes, and Sara Rodrigues, "Gender and visible minority status: Career advancement in the Canadian information and communications technology sector," Ryerson University, https://www.torontomu.ca/diversity/research/abstracts/5.pdf

33 2021 Canadian Census, "Occupation (training, education, experience and responsibility category - TEER) by mobility status five years ago, place of residence five years ago and labour force status: Canada, provinces and territories, census metropolitan areas and census agglomerations with parts," Statistics Canada, 2022, Table: 98-10-0450-01 https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=9810045001

A Statistics Canada study examining STEM graduates' career pathways by gender from 2006 to 2016 found that a higher proportion of male STEM grads had managerial roles throughout that time (in 2016, 4.1% of male STEM graduates held STEM management occupations, compared with 2.1% of women).[34] More recently, Census 2021 data shows mixed findings regarding whether women's representation in digital economy occupations is markedly different for management-level roles. For example, within natural and applied sciences and related occupations (overall, 25% of workers in this category are women), 26% of specialized middle management occupations in engineering, architecture, science and information systems are held by women (and 26% of professional occupations and 22% of technical occupations in this category are held by women).[35] Accordingly, while there is not always evidence that women are *more* underrepresented in management roles than in lower-level roles by occupation, bringing more women into management roles may simply be an important part of improving gender parity at large (i.e., while 26% is higher than 25%, it's still less than the 48% of the total workforce that women represent).

Gender Representation in Senior Leadership and on Boards

Gender discrepancies persist when looking at senior and executive-level roles. A 2022 analysis by the law firm Osler, Hoskin & Harcourt (Osler) found women held 26% of seats on boards across all TSX-listed companies. While there is still a lot of work to be done, the 2022 analysis presents a reason to be optimistic that change is happening because, in 2015, Osler found that women only held 10% of board seats.[36] A different analysis of TSX-listed companies by Canada's Prosperity Project reveals that as of 2023, women make up 34.8% of corporate director roles and 29.2% of executive officer roles.[37] While these trends suggest that progress is being made to enhance women's representation in leadership-level roles, it is worth noting that the representation of women in senior leadership at TSX-listed companies drops substantially when looking at intersectional factors. As of 2023, Black women and Indigenous women, respectively, make up only 0.9% and 0.3% of all corporate directors, executive officers, senior management, and pipeline-to-senior management roles (Figure 5).[38]

34 Kristyn Frank, " A Gender Analysis of the Occupational Pathways of STEM Graduates in Canada," Statistics Canada, Sept 2019, https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019017-eng.htm

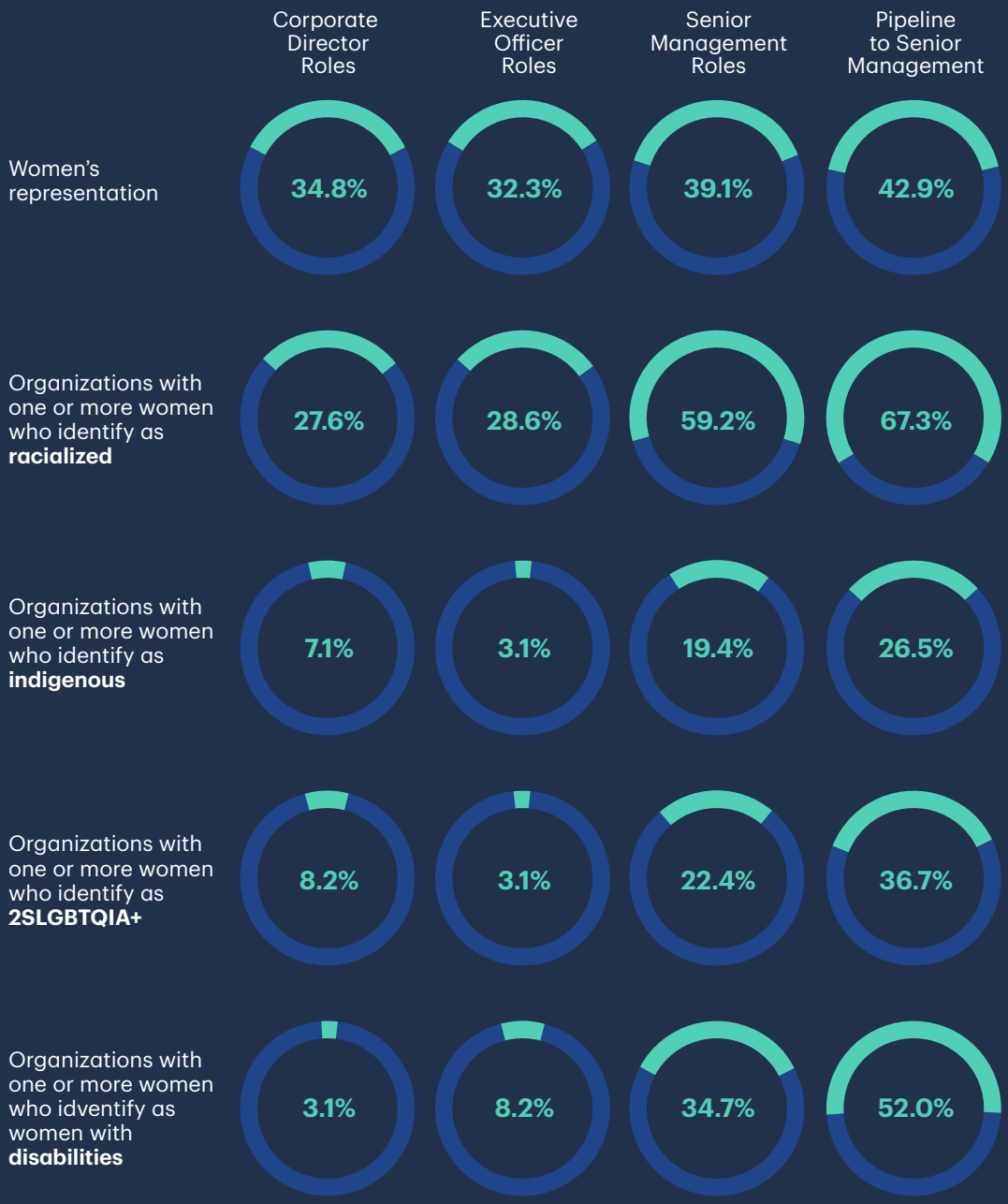
35 Statistics Canada, Occupation by major field of study (STEM and BHASE, detailed): Canada, provinces and territories, Census 2021, Table: 98-10-0405-01, https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=9810040501

36 Andrew MacDougall, John Valley, and Jennifer Jeffrey, "Diversity Disclosure Practices: Diversity and leadership at Canadian public companies," 2022, https://www.osler.com/osler/media/Osler/reports/corporate-governance/Osler-Diversity-Disclosure-Practices-report-2022.pdf

37 Based on data collected from 82 participating organizations and 21,017 women leaders from public, private, and Crown corporations surveyed by Canada's Prosperity Project; "The Prosperity Project 2023 Annual Report Card on Gender Diversity and Leadership: The Zero Report," Canada's Prosperity Project, 2023, https://canadianprosperityproject.ca/data-tracking

38 Ibid.

Fig. 5 Snapshot of Women's Representation in Senior-Level roles



Source: Figure Reproduced with Permission from the Canadian Prosperity Project, https://canadianprosperityproject.ca/data-tracking

The Value Add of Gender Diversity in Leadership to Improve Top-Line Revenue

An abundance of research demonstrates that gender equity at the executive level increases profitability.[39] A 2007 study finds that firms with a high proportion of women officers generate significantly higher returns.[40] A global estimate from 2015, including companies from Canada, the UK, the U.S., and Latin America, reports that the companies with the greatest levels of gender diversity in leadership were 15% more likely to see returns higher than the median for their industry in their country; those with the highest levels of ethnic or racial diversity were 35% more likely to see higher profitability.[41] Greater diversity also responds to consumer needs because Canadian demographics are increasingly diverse and consumers are becoming more savvy and conscious about where they spend their money. Companies with better diversity and inclusion can expect increased share prices, rewarding shareholders and investors.[42]

Not only does gender diversity at the top improve the bottom line, but it also changes the way companies think. Women in STEM have been found to be motivated by social causes and giving back; they seek opportunities to apply their skills for social good.[44] Participation of these groups at the board and executive levels can enhance governance practices, including greater accountability, openness to new perspectives,[45] and employee growth and progression.[46] Some participants in focus groups held by ICTC described a firm's willingness to develop tech ethically as a key selling point:

Woman in Tech, Focus Group Participant

I recently moved into a tech leadership role at a consulting firm. I chose this firm because I told the employer [that] I have a certain way that I build technology products. It's based on human-centred design and inclusive design. I like to build equity through the tech products that I build. And this firm said, 'Absolutely, you can run with that.' And that's why I chose the firm. ❞

39 Marcus Noland and Tyler Moran, "Firms with more women in the c-suite are more profitable," Harvard Business Review, February 2016, https://hbr.org/2016/02/study-firms-with-more-women-in-the-c-suite-are-more-profitable

40 Claude Francoeur, Réal Labelle and Bernard Sinclair-Desgagné, "Gender Diversity in Corporate Governance and Top Management," Journal of Business Ethics, 2008, https://www.jstor.org/stable/25482199

41 Vivan Hunt, Dennis Layton, and Sara Prince, "Diversity Matters," McKinsey & Company, February 2, 2015, https://www.mckinsey.com/~/media/mckinsey/business%20functions/people%20and%20organizational%20performance/our%20insights/why%20diversity%20matters/diversity%20matters.pdf

42 Pamela Brown, Tiffany Burns, Tyler Harris, Charlotte Lucas, and Israe Zizaoui, "The rise of the inclusive consumer," McKinsey & Company, February 2022, https://www.mckinsey.com/industries/retail/our-insights/the-rise-of-the-inclusive-consumer

43 Corinne Post, Boris Lokshin, and Christophe Boone, "Adding women to the c-suite changes how companies think," Harvard Business Review, April 2021, https://hbr.org/2021/04/research-adding-women-to-the-c-suite-changes-how-companies-think?ab=at_art_art_1x4_s01

44 Sylvia Ann Hewlett, Carolyn Buck Luce, Lisa J. Servon, Laura Sherbin, Peggy Shiller, Eytan Sosnovich, and Karen Sumberg, "The Athena Factor: Reversing the Brain Drain in Science, Engineering, and Technology," Harvard Business Review, 2008, https://store.hbr.org/product/the-athena-factor-reversing-the-brain-drain-in-science-engineering-and-technology/10094

45 Kevin O'Meara and Maria Giammarco, "All on Board: Turning Evidence into Action."

46 https://www.credit-suisse.com/about-us-news/en/articles/media-releases/42035-201207.html

Focus group participants also recognized a growing awareness of the value of gender diversity in leadership but noted that it was not always implemented well. For example, one participant was worried that efforts to promote diverse women into senior, executive, or board positions were often driven by tokenism rather than equitable opportunity. This participant wanted to be valued for what she could contribute rather than receiving the position because she checked a box and explained, *"I've been told by multiple companies, 'I'd love to have you on my board because you're Indigenous, Black, a woman and in technology –you check all the boxes.' It's like, I don't want to be on your board [because of my race and gender]."* This example illustrates that committing to more diversity in leadership is not adequate—meaningful engagement and recruitment are essential. This challenge of tokenism in mid- and senior-level roles is further addressed in Section II.

"Leaky Pipeline or Broken Scaffolding?" Gender and Career Progression in STEM

Much existing research on women's career pathways in the digital economy focuses specifically on STEM occupations.[47] The "leaky pipeline" is a prevailing metaphor for women's underrepresentation in technology roles, including senior positions, calling attention to the times in women's careers when they may choose non-STEM paths, which can include starting careers in non-STEM roles that are easier to land, or leaving work to start a family.[48] Recently, some have argued that the leaky pipeline metaphor places undue emphasis on individual choice rather than the systemic barriers (the "broken scaffolding" concept) to supporting women in STEM.[49] For example, a recent consultation of 46 women working in Canadian federal public service STEM roles identifies four critical career roadblocks: stereotypes and microaggressions (cited by 46% of participants), a lack of transparency and barriers to promotions (27%), an unsupportive work environment (19%), and unclear or obstructed career paths (19%).[50]

The COVID-19 pandemic provides an illustrative case of challenges that women face in the workplace and showcases systemic barriers. The closure of many schools and childcare facilities challenged working parents. Data from Statistics Canada in June 2020 showed that 42% of mothers[51] identify as the primary stay-at-home caretaker in their families, compared to 8% of fathers; moreover, 47% of mothers versus 14% of fathers report being the main parent helping with schoolwork and homework.[52]

47 For example, Kristyn Frank, " A Gender Analysis of the Occupational Pathways of STEM Graduates in Canada," Statistics Canada, Sept 2019, https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019017-eng.htm

48 Linda Calhoun, Shruthi Jayaram, & Natasha Madorsky, "Leaky Pipelines or Broken Scaffolding? Supporting Women's Leadership in STEM," Jun 1, 2022, Stanford Social Innovation Review, https://ssir.org/articles/entry/leaky_pipelines_or_broken_scaffolding_supporting_womens_leadership_in_stem

49 Ibid.

50 Alicia Close, Melanie Ewan, and Rebecca Factor, "Advancing women in STEM in the Government of Canada," 2021, https://www.canada.ca/en/shared-services/corporate/publications/advancing-women-stem.html

51 Mothers here and throughout the report refer to anyone who identifies as moms or mothers and acknowledge moms and mothers who have had children, whether through birth, surrogacy, donor-assisted families, and other forms of families.

52 Sylvia Fuller and Yue Qian, "Covid-19 and The Gender Gap in Employment Among Parents of Young Children in Canada," Gender & Society, 35(2), 2021, https://doi.org/10.1177/08912432211001287

The added stress and work (e.g., caregiving duties) caused by the pandemic had adverse effects on working women. A global survey of 500 women in the technology, media, and telecommunications sectors highlights that women felt less satisfied with many aspects of their life and work following the pandemic.[53] Women reported notable changes to their mental well-being, work-life balance, and motivation during the pandemic. Mental well-being dropped from 67% before the pandemic to 31% during the pandemic; work-life balance and motivation dropped by 38 and 32 percentage points, respectively. According to this study, mental well-being and demanding workloads caused 22% of women in these sectors to consider leaving the workforce entirely.[54] Another U.S.-based survey found that more senior-level women report taking leaves or reducing their working hours during the pandemic, and note that low levels of work-life balance and feeling unsupported in their organization during the pandemic were the biggest drivers of these leaves.[55] Similar results were found in a global survey of 5,000 women (from Canada, Australia, Brazil, China, Germany, India, Japan, South Africa, the United Kingdom, and the United States).[56]

Several layers of systemic challenges underly women's roles as disproportionate primary caregivers, but even small employer interventions can effect meaningful change. Focus group participants' experiences highlighted the value of workplaces that sought to reduce barriers for parents during COVID:

Woman in Tech, Focus Group Participant

With daycare and COVID, when I started working at the beginning of the pandemic, I was so nervous because I was concerned about [the workplace reaction] if I had to go pick my child up from daycare urgently or if they were home sick with COVID (which they were). I was so surprised at how inclusive [the company] was: 'Listen, you're a working mom, and family is first, so take care of your kids. We've got it. It can wait.' I knew that this was the culture during the interview process [because it was highlighted] on the website. We have an employee handbook. It was written by our CEO, and in there, she indicates that 'if you need to pick your kids up early from school, if you need to go to a doctor's appointment, or whatever, just go! You don't need to ask for time off. You don't need to record this in the system. ❞

Addressing the concept of "broken scaffolding" (the lack of support for women's career progression), Section II of this report adopts a systems-thinking approach to examine diversity-enabling infrastructure, corporate transformation, and individual leaders and managers, and how each of these levels of change can promote career progression for equity-deserving employees.

53 Susanne Hupfer et al., "Women in the tech industry: Gaining ground, but facing new headwinds," Deloitte, December 2021, https://www2.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2022/statistics-show-women-in-technology-are-facing-new-headwinds.html

54 Ibid.

55 Neveen Awad et al., "Reinventing the Leadership Journey for Women in Tech," 2022, Boston Consulting Group, https://www.bcg.com/publications/2022/reinventing-the-leadership-journey-for-women-in-tech

56 Michele Parmelee and Emma Codd, "Women @ Work 2022: A global outlook," Deloitte, 2022, https://www2.deloitte.com/content/dam/Deloitte/global/Documents/deloitte-women-at-work-2022-a-global-outlook.pdf

Addressing the Gender Gap in Tech:

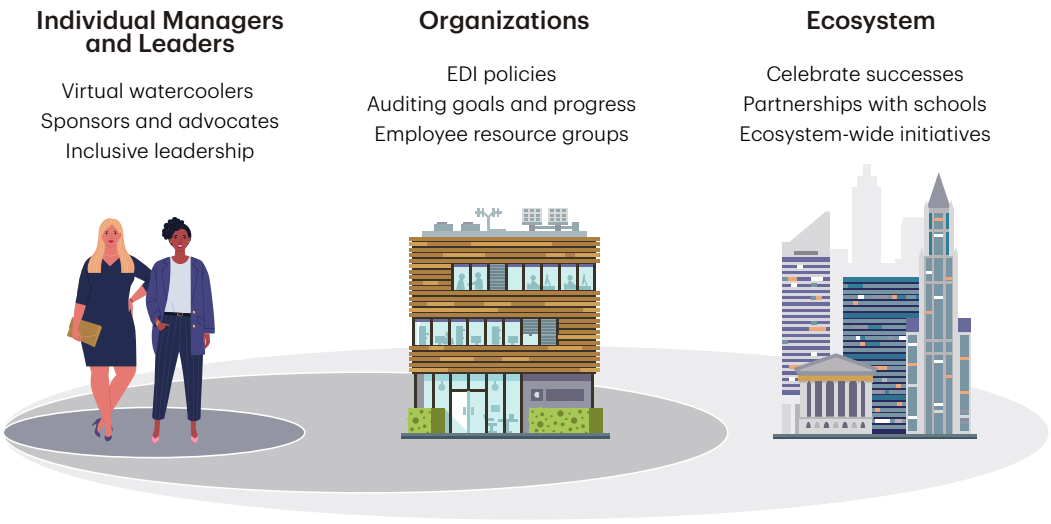
What Is Needed to Improve Gender Representation in Mid- to Senior-Level Positions?

This section identifies three opportunities (or systems of change) to address systemic barriers to gender equity in the digital economy. Systems of change are a core component of systems thinking, a multidisciplinary approach used to understand systems holistically, including how their components relate to one another and how they change over time.[57] In this section, three systems of change are discussed: (1) change agents at the individual leadership level, (2) organizational transformation at the organizational level, and (3) diversity-enabling infrastructure at the ecosystem level (see Figure 6). Together, these reflect the relationship that exists between individuals, organizations, and social systems while positing solutions to improve gender diversity in mid- to senior-level digital economy roles.[58] Importantly, barriers and solutions to equitable career advancement may occur at multiple levels (e.g., gendered stereotypes may impact individual managers, organizations, and entire ecosystems): their inclusion in any one of these sections does not preclude their relevance at other levels.

57 Susan Lee Watson and William R. Watson, "Chapter Six: Critical Systems Theory for Qualitative research," Counterpoints, 2013, https://www.jstor.org/stable/42981166

58 Ibid.

Fig. 6 Systems of Change



Systems of change at the individual, organizational, and ecosystem levels that can be leveraged to address systemic barriers to gender inequity in tech.

Systems of change at different levels of intervention can help improve our understanding of an effectively implemented equity, diversity, and inclusion (EDI) initiative. Strong EDI policies and programs are likely to result in increased organizational diversity, which has been shown to positively contribute to business growth and profitability.[59] This relationship could be attributed to increases in creativity, productivity, and innovation that may emerge from diverse teams.[60] Strong EDI policies and programs may also enhance recruitment potential, with women engaged in this study's focus groups expressing that they look at workplace diversity when considering a job offer.

While EDI policies and programs are important, they are also complex and nuanced. Research participants in a previous study conducted by ICTC showed that there is no "one-size-fits-all" when it comes to EDI policies.[61] Instead, these policies should be customized to organizational needs. The strategies recommended in Section II can be considered components of EDI programs, which can be applied to improve retention and career advancement for women in the digital economy.

59 Sundiatu Dixon-Fyle, Kevin Dolan, Dame Vivian Hunt, and Sara Prince, "Diversity wins: How Inclusion Matters," McKinsey & Company, 2020 https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-wins-how-inclusion-matters

60 Nabila Kazmi, "Diversity, Equity and Inclusion within STEM in Canada: A Literature Review," University of Victoria, 2022, https://www.uvic.ca/coop/_assets/docs/partnerships-dei-lit-review.pdf

61 Maryna Ivus, Maya Watson, "Gender Equity in Canada's Technology Ecosystem," Information and Communication Technology Council, 2022, https://www.digitalthinktankictc.com/reports/gender-equity-in-canadas-tech-ecosystem

Change Agents at the Individual Leadership Level

This section identifies key barriers to equitable career advancement for women in tech that can be addressed by individual managers or leaders. Interventions and strategies that managers and leaders can implement to overcome these barriers are also discussed.

Barrier I Visibility and Informal Promotional Structures

Primary research participants in this study commented that women might opt out of the digital economy because of feeling that they are "stuck" or that their career has stalled. Part of this can be attributed to informal promotion structures that are largely built on relationships, which have been shown to disadvantage minority groups and women.[62] Informal conversations about performance and promotion may take place after working hours, at gender-coded events like a "boys club," at happy hour, hockey games or golf tournaments, etc.[63] Intentionally or unintentionally, these events typically benefit cisgender men while excluding women.[64] In turn, cultural norms, including informal networking events, can adversely impact career advancement opportunities for women in the digital economy.[65]

Unfortunately, informal promotional structures extend beyond networking events. Some research suggests that women in STEM are both less likely to self-promote and less likely to be promoted due to gender bias in management.[66] As noted in ICTC's *Gender Equity in Canada's Tech Ecosystem* report, "this relationship bias is compounded by the reality that fewer women are in senior management positions,"[67] making it even harder for women to find sponsors and break into leadership roles.[68]

These trends were highlighted in ICTC's focus groups, with several engaged participants noting that infrequent opportunities to communicate with their boss resulted in fewer opportunities for career advancement. For instance, engaged participants expressed that annual reviews did not provide enough time to communicate career aspirations to their managers.

62 Ibid.

63 Catherine Ashcraft, Brad McLain, and Elizabeth K. Eger, "Women and IT: The Facts," 2016, National Center for Women & Information Technology, https://www.academia.edu/25601833/Women_and_IT_The_Facts

64 Ibid.

65 Maryna Ivus, Maya Watson, "Gender Equity in Canada's Technology Ecosystem," Information and Communication Technology Council, 2022, https://www.digitalthinktankictc.com/reports/gender-equity-in-canadas-tech-ecosystem

66 Contini, M., Samardzic, T. (2021). Diversity, Equity and Inclusion Policies in Canadian Small-to-Medium Sized Enterprises within Science, Tech, Engineering, and Skilled Trades. Community Engaged Scholarship Institute. https://atrium.lib.uoguelph.ca/xmlui/handle/10214/26770

67 Maryna Ivus, Maya Watson, "Gender Equity in Canada's Technology Ecosystem," Information and Communication Technology Council, 2022, https://www.digitalthinktankictc.com/reports/gender-equity-in-canadas-tech-ecosystem

68 Ibarra, H. (2019). A Lack of Sponsorship is Keeping Women from Advancing into Leadership. Harvard Business Review. https://hbr.org/2019/08/a-lack-of-sponsorship-is-keeping-women-from-advancing-into-leadership

Furthermore, focus group attendees commented that the shift to working from home, though helpful for lowering barriers to entry during the pandemic, amplified some pre-existing barriers to career advancement. Despite the flexibility and convenience of remote work, some studies suggest that remote workers lose out on bonuses and advancement opportunities."[69] One focus group participant described the challenge as an "out of sight, out of mind" mentality, reducing face time between women and their employers:

Focus Group Participant

Given the remote working environment for us office workers who do have the privilege of doing so, sometimes this out of sight, out of mind mentality is doing us, as women, a disservice. And especially what I've noticed is oftentimes on Zoom calls, whether it be a regular Zoom call with your team or with other associates, more women than men tend to turn off their camera... We say, 'We respect your choice. If you don't feel comfortable turning your camera on, it's up to you.' But once your camera is off, and it keeps being off for longer periods of time, you really add to this out-of-sight, out-of-mind notion. And that's what I've seen happening over and over again.

The notion that promotions are based on relationships and visibility within an organization was echoed by other women in tech engaged for this study. Notably, one woman expressed her concerns for women who work from home not being able to navigate office politics as well, ultimately hindering opportunities for career progression. She said:

Focus Group Participant

Dealing with the office politics [is important for career progression]. You do need to do that. You do need to understand how to navigate that in order to advance through the ranks. And so, while it might seem beneficial to remove yourself from that, I feel like they're closing themselves off to some career paths to leadership positions while working from home.

Solutions: Building Strong Relationships that Recognize Women as Future Leaders in Tech

Supporting women's career advancement can include both relational approaches (by individual managers and sponsor) and adjustments to organizational policy, such as enhanced transparency and gender-neutral language in senior job descriptions and performance reviews. The latter is discussed in the section on corporate transformation at the organizational level.

69 Andrea Burgess, "Remote Work Might Damage Your Career Advancement, new study." Alliance Virtual Offices, 2023, https://www.alliancevirtualoffices.com/virtual-office-blog/remote-work-study-career-advancement/

Individual managers can encourage visibility for their teammates, not by mandating that people work from the office but by instituting policies that compensate for the potential disadvantages of working from home and having less representation in management. One focus group attendee noted that the best way to address this issue is by prioritizing one-on-one check-ins between managers and their teams:

Employer Focus Group Participant

We really leveraged our one-on-ones so that all of our managers make sure their team members are asking the right questions and have a good understanding of where they want to go with their careers. ❞

Creating opportunities for face-to-face interactions may require more effort in a remote work setting. Some have suggested creating "**virtual watercoolers**," wherein informal interactions are engineered into everyday remote work.[70] Informal communication in a virtual setting, when supported by adequate investment and commitment from senior managers, might support improved career and performance outcomes for junior staff.[71]

Sponsors and advocates are leaders who use their reputations to support women in the workplace.[72] Sponsors look for ways to expand an individual's visibility by putting their name on the table for a promotion or opportunities to showcase their leadership skills. Sponsors can advocate for women in tech by highlighting their positive performance, mention them in conversation when they are not present, and introduce them to their networks:

Employers Focus Group

There's a difference between a coach who listens to you, a mentor who advises you, and a sponsor. A sponsor is somebody who introduces you to their network. So, sponsorship to me is really having executives at the senior level walking the walk. ❞

Allies have an opportunity to become champions for advancing women in the workplace. Male leaders can inform themselves about the barriers faced by women and advocate for their colleagues' or supervisees' advancement. In one American study, women with female sponsors earned 14.6% less than women with male sponsors (who advocated for their advancement and pay raises).[73] Male allies can support individual women in the workplace and gender equity initiatives more broadly:

Employers Focus Group

We have an EDI committee, and there's a lot of men on there that are passionate about getting women candidates in for interviews and getting women promoted for leadership roles. When you have men, especially cisgender Caucasian men, advocating for women and other minority groups, that's really refreshing. ❞

70 Prithwiraj Choudhury, Jacqueline N. Lane, and Iavor Bojinov, "Virtual Water Coolers: A Field Experiment on the Role of Virtual Interactions on Organizational Newcomer Performance," HBS Working Papers, 2023, https://www.hbs.edu/ris/Publication%20Files/21-125_29ac1ced-8c51-4835-837a-542852328741.pdf

71 Ibid.

72 The Kaleidoscope Group, "Advocates, Mentors & Sponsors: What Are They And Why Do They Matter?" 2020, https://kgdiversity.com/advocates-mentors-sponsors-what-are-they-and-why-do-they-matter/

73 Valerie Bolden-Barrett, "Sponsorships could help close the gender wage gap, especially for women of color," HR Dive, 2019, https://www.hrdive.com/news/sponsorships-could-help-close-the-gender-wage-gap-especially-for-women-of/559875/

Barrier II Uneven Implementation of Organizational Policy

Individual managers and leaders are responsible for implementing organizational policy. As such, leaders and managers have an enormous impact on workplace cultures, inclusivity, and diversity of thought. The next section on transformation at the organizational level will show that there are many important interventions that begin with corporate policy but are delivered by individual managers and leaders. The success of workplace policies depends largely on the people implementing such policies.

Without buy-in from upper-level management, EDI policies can fall to the wayside. For example, a year-long case study of a Silicon Valley tech company examined how high-level executive views on inequality affect their "change efforts."[74] This study found that "executives tend to favour individual and societal explanations for gender differences and inequality" and, in turn, tend to focus EDI initiatives aimed at the individual instead of attempting to "change the organizational structure."[75] Other research finds that without leadership-level buy-in, policies and processes can become "a substitute for action," or worse, "performative" in nature.[76] Performative EDI action is typically insincere and may be "undertaken to promote the organizational brand… rather than drive affirmative action related to the cause".[77] As such, performative action can be counter-productive to EDI goals. Women engaged in this study agreed that EDI policies rarely work without a leadership-level commitment to equity across the workplace:

Employer Focus Group

Having something written down as a policy, that's one thing. But are we actually living it? What we value more is having these conversations rather than just having a document. For instance, we have a company "all hands" meeting every Friday that everybody joins. You have the co-CEOs, and we talk about our learnings. The more that we bring that [equity, diversity, and inclusion] up as just a casual conversation companywide than the more natural it becomes. It's a working process. Then you no longer need that document or that policy because you're like living and breathing it through how you work.

Performative action might manifest in a gap between stated organizational priorities and reality as felt by staff. For example, a survey of 1,115 North American business leaders found that 65% agreed that EDI was a strategic priority for their organization, but only 33% rated their organizations' efforts as "very successful."[78] An employer interviewed by ICTC said some could view EDI as just another "box to check," as opposed to making a noticeable change. Accordingly, it is important for individual leaders and managers to fully enact policies, not just build policies to appear inclusive.

74 Alison T. Wynn, "Pathways toward Change: Ideologies and Gender Equality in a Silicon Valley Technology Company," Gender & Society, 2020, https://journals.sagepub.com/doi/10.1177/0891243219876271

75 Ibid.

76 Sara Ahmed, "On Being Included," Duke University Press, 2012 https://www.cmc.edu/sites/default/files/2022-03/Sara%20Ahmed%20On%20Being%20Included.pdf

77 "What Does it Mean to be 'Performative' in EDI?," January 4, 2022, Crescendo, https://crescendowork.com/workplace-inclusion-blog/what-does-it-mean-to-be-performative-in-dei

78 Harvard Business Review, "Creating a Culture of Diversity, Equity, and Inclusion: Real Progress Requires Sustained Commitment," 2021 https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/DEI%20Metrics%20Full%20Report.pdf

Solutions: Leverage Training and Coaching to Develop Inclusive Leaders

Leaders have been under immense pressure during and following the COVID-19 pandemic. Acknowledging that leaders may already be overburdened, leadership coaching and training can support leaders in becoming more inclusive rather than just focusing on diversity training for staff. Women who were engaged in this study's focus groups suggested that leadership coaching and training can help build **inclusive leaders**. Inclusive leaders are those who practice humility, emotional intelligence, empathy, curiosity, and collaboration.[79] Leaders who create an inclusive space for their employees can create positive outcomes that translate to improved ability to meet financial targets, innovation and agility, and more generally, better business outcomes.[80]

Even small comments and actions can improve inclusive leadership. Working parents that participated in this study noted that employers who ask both men and women about their family and caregiving experiences help create a feeling of equity. Another suggestion made at ICTC's co-design workshop was for male leaders who have taken time off to care for their children or an aging parent to share that information with their employees. A report by Deloitte noted that leaders who share this type of personal information can help employees see that they value and uphold organizational commitments to equity.[81]

Leadership at all levels has a vested role in actioning EDI strategies in an authentic way. Senior leaders can help support their teams to be inclusive by encouraging **leadership development coaching**, which is built on the idea that creating welcoming spaces and practicing equitable decision making are skill sets that managers and leaders can develop through training and coaching opportunities.[82] Organizations can reward leaders and managers who are committed to encouraging collaboration, valuing multiple viewpoints, and maintaining accountability and transparency with their staff.[83] Companies may also decide to build expectations for inclusive work culture measures into leadership performance evaluations.

79 Juliet Bourke, "The diversity and inclusion revolution: Eight powerful truths," Deloitte, 2018 https://www2.deloitte.com/us/en/insights/deloitte-review/issue-22/diversity-and-inclusion-at-work-eight-powerful-truths.html

80 Ibid.

81 Juliet Bourke, "The diversity and inclusion revolution: Eight powerful truths," Deloitte, 2018 https://www2.deloitte.com/us/en/insights/deloitte-review/issue-22/diversity-and-inclusion-at-work-eight-powerful-truths.html

82 Gena Cox and David Lancefield, "5 Strategies to Infuse D&I into Your Organization," Harvard Business Review, 2021, https://hbr.org/2021/05/5-strategies-to-infuse-di-into-your-organization

83 Korn Ferry, "The journey to becoming a more inclusive leader," n.d., https://www.kornferry.com/insights/featured-topics/diversity-equity-inclusion/the-journey-to-becoming-a-more-inclusive-leader

Summary Table: Change Agents at the Individual Leadership Level

Table 1 below provides a summary of the strategies that can be used to overcome barriers at the individual leadership level. Who can implement these strategies? People managers, team leads, and supervisors.

Table 1 Summary table of individual leadership-level action items

Change Agents at the Individual Leadership Level		
Measurable Solution(s)	**Outcome** What is the desired outcome?	**Actions** What actions can be taken to address the barrier?
Barrier I	Visibility and Informal Promotional Structures	
Virtual Watercoolers	Opportunities for women to gain visibility and communicate career goals with leaders.	◤ Develop "virtual watercoolers" for remote employees. ◤ Create team activities to build more face time and engagement. ◤ Set targets for more frequent check-ins between employees and managers for 1-on-1 discussions to determine career progression and opportunities for leadership support.
Sponsors and Advocates	Improved opportunities for raises, bonuses, networking, and advancement for women in tech.	◤ Prioritize opportunities to advocate for your staff and refer them to conferences or events to build their networks. ◤ Build a career plan with your team and ask how you can support them on their career journey. ◤ Compliment or advocate for a supervisee in meetings with leadership.
Men as Allies	Managers who are men are advocates for women colleagues and support gender equity programs in the workplace.	◤ Volunteering to be mentors or sponsors for women in tech.
Barrier II	Uneven Implementation of Organizational Policy	
Inclusive Leaders	Leaders have the tools to implement EDI policy in depth across an organization, signalling genuine organizational commitment.	◤ Enroll leaders in inclusive leadership coaching. ◤ Build inclusive leadership qualities: humility, emotional intelligence, empathy, curiosity, and collaboration. ◤ Work with teams to set goals that reflect inclusive leadership qualities.

Corporate Transformation at the Organizational Level

Companies have a large role to play in improving gender diversity in mid- to senior-level roles. Many barriers to achieving gender diversity in mid- to senior-level roles exist at the organizational level, including gender biases in promotions, performance reviews, and roles, the gender pay gap, and barriers for mothers. Corporate culture, flexible workplace policies, mentorship programs, and mental health support are proven strategies that companies can implement to attract and retain women. This section discusses these barriers and solutions and calls on decision makers at the organizational level to build gender equity into their business strategies, signaling a transformational change from the top down.

Barrier I Gender Biases in Promotions, Performance Reviews, and Roles

Bias in Promotions and Performance Reviews

Performance reviews are one of the few opportunities' employees have to communicate their strengths and leadership qualities and express interest in moving up the organizational ladder. Unfortunately, performance reviews can be biased and may reinforce gender and racial stereotypes.[84] According TrustRadius' survey of 450 American tech professionals (66% of which identify as women), 39% of women reported seeing "gender bias as a barrier to promotion in 2021."[85] This statistic was even greater for women of colour in tech, with 42% stating gender bias as a barrier to promotion.[86] Altogether, this survey found that in tech were four times more likely to see gender bias hindering promotion opportunities.[87]

While biases and stereotypes may occur informally or unconsciously, they have quantifiable consequences. One study that audited performance reviews in a U.S. law firm found that "only 9.5% of people of colour had mentions of leadership in their performance evaluations—more than 70 percentage points lower than white women."[88] Although not the only determinant, whether and how often leadership is mentioned in performance reviews can lead to higher competency ratings.[89] As gender and racial stereotypes affect performance reviews, they also affect promotion structures. Altogether, this survey found that women in tech were four times more likely than men in tech to see gender bias hindering promotion opportunities.[90]

84 Jeffrey H. Greenhaus, Saroj Parasuraman and Wayne M. Wormley, "Effects of Race on Organizational Experiences, Job Performance Evaluations, and Career Outcomes," Academy of Management Journal, 2017 https://journals.aom.org/doi/abs/10.5465/256352; Magid Igbaria and Jack J. Baroudi, "The Impact of Job Performance Evaluations on Career Advancement Prospects: An Examination of Gender Differences in the IS Workplace," MIS Quartely, 1995 https://www.jstor.org/stable/249713

85 TrustRadius, "TrustRadius 2021 Women in Tech Report," 2021 https://www.trustradius.com/buyer-blog/women-in-tech-report

86 Ibid.

87 Ibid.

88 Joan C. Williams, Denise Lewin Loyd, Mikayla Boginsky, and Frances Armas-Edwards, "How One Company Worked to Root Out Bias from Performance Reviews," Harvard Business Review, 2021 https://hbr.org/2021/04/how-one-company-worked-to-root-out-bias-from-performance-reviews

89 Ibid.

90 Ibid.

In focus groups for this study, women in tech brought up examples of bias in performance reviews. One woman engineer discussed a manager who avoided direct feedback and constructive criticism so as to not "hurt her feelings." This engineer went on to explain that her manager's good intentions actually hurt her career because she had less insight into how she could improve her performance. Other participants mentioned they had their coworkers question their qualifications and credentials, while others had coworkers label them as "lacking the confidence" needed for senior-level roles. This second example highlights how even an organization's understanding of what constitutes leadership can be impacted by gender bias. Organizations may assume that their policies and procedures are neutral so long as they are applied equally regardless of demographic diversity or hierarchical organizational structures.[91] However, this is usually not the case. For example, performance reviews that reward masculine-leaning traits can be applied equally to all genders and still adversely impact women's opportunities to advance.[92]

While "evidence for gender differences in leader behaviour is decidedly mixed," prevailing beliefs based on stereotypes often enter the conversation about leadership and gender. Social Role Theory has long ascribed that leadership styles for women and men will be consistent with social gender roles and culture. Women's traditional gender role creates "communal leaders" (e.g., more caring and relationship-oriented) and for men, "agentic leaders" (e.g., more assertive, self-confident, and task-oriented).[93] While social gender roles may affect the leadership styles of men and women, this is not always the case, and some women lean toward agentic leadership styles. Unfortunately, studies on gender in leadership have showcased that gender biases can result in a "backlash effect," whereby women who display agentic qualities might be evaluated more poorly.[94] Similarly, a new study on gendered leadership during crises found that women were not more communal than men and that communal qualities were a strong predictor of likability and competence.[95] However, when looking at how communal qualities impact performance evaluations, it was found that strong communal behaviour affected the performance ratings for women to a greater extent than for men.[96] Notably, these effects appear in real-world situations but not in hypothetical lab-controlled situations, suggesting that many do not want to evaluate women and men differently but do so in actuality.[97] In other words, unconscious gender biases and stereotypes can result in uneven performance evaluations—a sentiment echoed by many women engaged in ICTC focus groups.

91 Shaheen Azmi, "Addressing Gender Equity using the Systemic Discrimination Lens," Ontario Human Rights Commission, 2012, https://www.slideserve.com/tarannum/sexism

92 Kevin O'Meara and Maria Giammarco, "All on Board: Turning Evidence Into Action for Women's Leadership," The Conference Board of Canada, 2020, https://www.conferenceboard.ca/product/all-on-board-turning-evidence-into-action-for-womens-leadership/

93 Connor J. Eichenauer, Ann Marie Ryan, and Jo M. Alanis, "Leadership During Crisis: An Examination of Supervisory Leadership Behavior and Gender During COVID-19," Journal of Leadership and Organizational Studies, 2022, https://journals.sagepub.com/doi/10.1177/15480518211010761

94 Ibid.

95 Ibid.

96 Ibid.

97 Ibid.

If left unchecked, gender bias may lead to gender discrimination. According to the Canadian Human Rights Commission, discrimination is "an action or a decision that treats a person or a group badly for reasons such as their race, age, or disability."[98] Sexual orientation, sex, gender identity and gender expression are also grounds for discrimination and are protected under the Canadian Human Rights Act. Concerningly, an American survey performed by Pew Research Center found that half of women in STEM jobs in the United States said they had been discriminated against at work compared with 19% of men in STEM jobs.[99] Women also reported earning less (29%), being treated as if they were incompetent (29%), experiencing microaggressions (20%), receiving less support from senior leaders (18%), feeling isolated (11%), being passed over for assignments (9%), and being denied a promotion (6%) when asked about the specific type of discrimination they had faced.[100] While there are some differences in how the U.S. and Canada define discrimination, these statistics are concerning and point to the importance of having robust anti-discrimination policies, such as an organizational commitment to upholding gender equality rights, training and education about gender rights, an effective and fair complaints procedure, anti-discrimination whistleblower policies, and an organizational culture that takes instances of discrimination seriously.[101]

98 Canadian Human Rights Commission, "What is Discrimination?" n.d., https://www.chrc-ccdp.gc.ca/en/about-human-rights/what-discrimination

99 Cary Funk And Kim Parker, "Women and Men in STEM Often at Odds Over Workplace Equity," Pew Research Center, 2018, https://www.pewresearch.org/social-trends/2018/01/09/women-and-men-in-stem-often-at-odds-over-workplace-equity/

100 Cary Funk And Kim Parker, "Women and Men in STEM Often at Odds Over Workplace Equity," Pew Research Center, 2018, https://www.pewresearch.org/social-trends/2018/01/09/women-and-men-in-stem-often-at-odds-over-workplace-equity/

101 Ontario Human Rights Commission, "Chapter 5. Anti-harassment and anti-discrimination policies," n.d., https://www.ohrc.on.ca/en/policy-primer-guide-developing-human-rights-policies-and-procedures/5-anti-harassment-and-anti-discrimination-policies

Gender Identity and Gender Expressions in the Workplace

Members of LGBTQIA2S+ communities face unique barriers when climbing the corporate ladder, sometimes referred to as the "lavender ceiling."[102] Canadian research suggests that LGBTQIA2S+ individuals are more likely to experience workplace-related challenges like gender biases, concealment, and social exclusion than their cisgender, heterosexual counterparts.[103] Due to power dynamics that exist in the workforce, many LGBTQIA2S+ individuals hesitate to disclose their sexual orientation or gender for fear of losing their job.[104] According to a study by McKinsey & Company, half (50%) of transgender people in the United States noted they could not be their full self during the application process compared to 33% of cis-gendered peoples surveyed.[105] Many noted they had to misrepresent or change their appearance in the interview process. In the same study, transgender peoples noted that they have to consider their gender when deciding on roles and industries to pursue.[106]

Canada has a long way to go to shatter the lavender ceiling. Less than 5% of organizations have one or more women who identify as LGBTQIA2S+ on their board or executive teams. Importantly, a lack of diversity at the board and executive level can further impact what types of discrimination policies organizations adopt. This is especially important for the LGBTQIA2S+ community, which faces barriers in the job application process and is less likely to have access to equitable support for career advancement. Diversity among corporate leadership has been shown to "lower the risk profile" and improve the financial performance of companies."[109] Research also indicates transgender wage equity "could boost annual consumer spending by $12 billion a year."[110] As such, corporations are making major investments in improving their inclusive cultures to positively appreciate gender differences.[111]

Pride at Work identifies and recommends a few strategies to promote and support LGBTQIA2S+ peoples in the workplace.[112] Suggestions for organizations included building strategies and action plans that address gender identity and gender expression, along with conducting formal policy reviews every one to five years. Companies can update policies and benefits packages to include "they" as the singular gender-neutral pronoun and re-evaluate gendered biases in company dress codes. Organizational-wide diversity training can be used to inform employees of respectful language and what to do when they see someone discriminated against. While diversity training can be beneficial, it may not be enough to ensure that all staff truly understand LGBTQIA2S+ issues. According to Pride at Work, 55% of organizations have gender identity and expression training for the full organization and for senior-level staff, but only 14% of organizations go beyond this training to mandate that senior-level staff truly understand LGBTQIA2S+ diversity and inclusion.[113] The list of strategies included in Pride at Work's annual report is listed below.[114]

Strategies to Shatter the Lavender Ceiling and Build More Inclusive Workplaces for People of Diverse Gender Identities and Expressions:

1. Develop policies that address gender identity and gender expression
2. Create action plans to deliver diversity and inclusion strategies
3. Use gender-neutral language in corporate documents
4. Ensure benefits are relevant to the needs of the LGBTQIA2S+ employees
5. Implement diversity and inclusive training organization-wide, including for managers
6. Build open communication and support Employee Resource Groups (ERGs)
7. Support gender transition in the workplace
8. Collect appropriate data and set targets

102 As a nod to the "glass ceiling" metaphor for women, the "lavender ceiling" is in reference to specific and unofficial barriers to career advancement for LGBTQ2S+. Justin Moore, "A Phenomenological Study of Lesbian and Gay People in Leadership Roles: How Perspectives and Priorities Shift in the Workplace as Sexual Orientation Evolves Through Social Constructs," The University of San Francisco, 2017, https://repository.usfca.edu/cgi/viewcontent.cgi?article=1409&context=diss

103 Audrey Appiah, Kelsey Brennan, Chloe Halpenny, Basia Pakula, and Sean Waite, "Building the evidence base about economic, health, and social inequities faced by LGBTQ2S+ individuals in Canada: Phase 2 Final Report," SRDC Canada, 2021, https://www.srdc.org/media/553177/wage-phase-2-final-report.pdf

104 Justin Moore, "A Phenomenological Study of Lesbian and Gay People in Leadership Roles: How Perspectives and Priorities Shift in the Workplace as Sexual Orientation Evolves Through Social Constructs," The University of San Francisco, 2017, https://repository.usfca.edu/cgi/viewcontent.cgi?article=1409&context=diss

105 David Baboolall, Sarah Greenberg, Maurice Obeid, and Jill Zucker, "Being Transgendered at Work," McKinsey & Company, 2021, https://www.mckinsey.com/~/media/mckinsey/featured%20insights/diversity%20and%20inclusion/being%20transgender%20at%20work/being-transgender-at-work-vf.pdf?shouldIndex=false

106 Ibid.

107 In response to a survey, 44% of individuals who identified as being part of a sexual minority reported experiencing unwanted sexual attention, versus 22% of heterosexual individuals; Statistics Canada, "Sexual minority people almost three times more likely to experience violent victimization than heterosexual people," 2020, https://www150.statcan.gc.ca/n1/daily-quotidien/200909/dq200909a-eng.htm

108 The Prosperity Project, "2023 Annual Report Card," 2023, https://canadianprosperityproject.ca/

109 Kezia Farnham, "Dismantling the Lavender Ceiling: Why Boards Must Drive LGBTQ+ Diversity and Inclusion," Diligent, 2021, https://www.diligent.com/insights/esg/the-lavender-ceiling/

110 David Baboolall, Sarah Greenberg, Maurice Obeid, and Jill Zucker, "Being Transgendered at Work," McKinsey & Company, 2021, https://www.mckinsey.com/~/media/mckinsey/featured%20insights/diversity%20and%20inclusion/being%20transgender%20at%20work/being-transgender-at-work-vf.pdf?shouldIndex=false

111 Carolina Pía García Johnson and Kathleen Otto, "Better Together: A Model for Women and LGBTQ Equality in the Workplace," Frontiers in Psychology, 2019, https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00272/full

112 Alison Grenier and Jacq Hixson-Vulpe, "Beyond Diversity: An LGBT Best Practice Guide for Employers," Great Place to Work and Pride at Work Canada, 2017, https://prideatwork.ca/wp-content/uploads/2017/09/Beyond-Diversity-LGBT-Guide.pdf

113 Ibid.

114 Ibid.

Bias in the Distribution of Duties and Tasks

Gender biases may also impact how organizations define roles or to whom they assign duties and tasks. For instance, participants in this study felt that women working in the digital economy take on a greater proportion of administrative tasks than men. As one focus group participant commented, "When it comes to [administrative] tasks, team management projects, etc., women in tech tend to take on a lot more than their men counterparts." Study participants felt this trend was only accentuated by the pandemic, whereby, during unusual periods of "downtime," women colleagues were asked to take on a greater proportion of administrative tasks. A survey by TrustRadius similarly found that 43% of American women in tech take on "extra responsibilities at work, compared to only 33% of men."[115]

In addition to administrative work, participants in this study felt that women tend to take on more "emotional labour" at work than men. Psychologist Dr. Alicia Grandey of Penn State defines emotional labour as "emotion regulation of oneself and others" and indicates that it "influences social dynamics at work, which has implications for performance and well-being in a wide range of occupations and organizations."[116] As discussed, women engaged in focus groups for this study felt that women take on a disproportionate amount of emotional labour at work, particularly during crises like the COVID-19 pandemic. Moreover, focus group participants felt that organizations do not value or reward emotional labour fairly and that few women receive fair recognition for this work.

115 TrustRadius, "TrustRadius 2021 Women in Tech Report," 2021 https://www.trustradius.com/buyer-blog/women-in-tech-report

116 Alicia Grandey, James Diefendorff, Deborah E. Rupp, "Emotional Labour in the 21st Century: Diverse Perspectives on Emotion Regulation at Work, 1st ed.," Routledge Publishing, 2013.

As described by Dr. Grandey, "Emotional labour, like physical labour, is effortful and fatiguing when done repeatedly all day long and can be costly in terms of performance errors and job burnout."[117] For some women, extra emotional and administrative labour can be compounded by greater childcare burdens as well.[118] Empirical research highlights a positive correlation between mental health and work performance: while this means that employees who have positive mental health tend to perform well, it also means that employees who are struggling with mental well-being and burnout tend to perform less effectively at work.[119] Participants in ICTC's women in tech focus groups were adamant that organizations should seek to minimize the impacts of emotional labour on women, not only to improve their well-being but also to ensure performant teams. To do this, gender biases must first be addressed.

Solutions: Address Conscious and Unconscious Biases in Promotions, Performance Reviews, and the Distribution of Tasks and Assignments

To ensure women have equal opportunities for career advancement, gender biases in the workplace, including in workplace culture, responsibilities, and performance reviews, must be mitigated. Reducing unconscious bias is no easy feat: such measures can either succeed or fail depending on approaches to implementation and adoption.

Unconscious bias training is a large part of many organizations' EDI strategies. In a common move, many organizations have hired EDI professionals to host training modules that address gender and racial biases.[120] While EDI programs may begin with teaching individual leaders how to challenge their biases, they cannot stop there. Broader efforts are also required at the organizational level to remove structural bias from talent management and decision-making processes. For example, organizations can:

- Audit performance reviews by vetting the qualities associated with promotions and leadership positions and formally recognizing both men and women-dominant traits.
- Create standardized, data-driven promotional structures.
- Create an equitable organizational culture by having open discussions about gender biases and their impact on the distribution of administrative tasks and emotional labour.
- Implement policies that recognize and reward emotional labour, which may disproportionately fall on women.

117 Alicia Grandey, "What is Emotional Labour?" The Pennsylvania State University, n.d., https://weld.la.psu.edu/what-is-emotional-labor/

118 TrustRadius, "TrustRadius 2021 Women in Tech Report," 2021 https://www.trustradius.com/buyer-blog/women-in-tech-report

119 Wright, T. A., Bonett, D. G., Sweeney, D. A. (1993). Mental health and work performance: Results of a longitudinal field study. Journal of Occupational and Organizational Psychology. https://bpspsychub.onlinelibrary.wiley.com/doi/epdf/10.1111/j.2044-8325.1993.tb00539.x

120 Nabila Kazmi, "Diversity, Equity and Inclusion within STEM in Canada: A Literature Review," University of Victoria, 2022, https://www.uvic.ca/coop/_assets/docs/partnerships-dei-lit-review.pdf

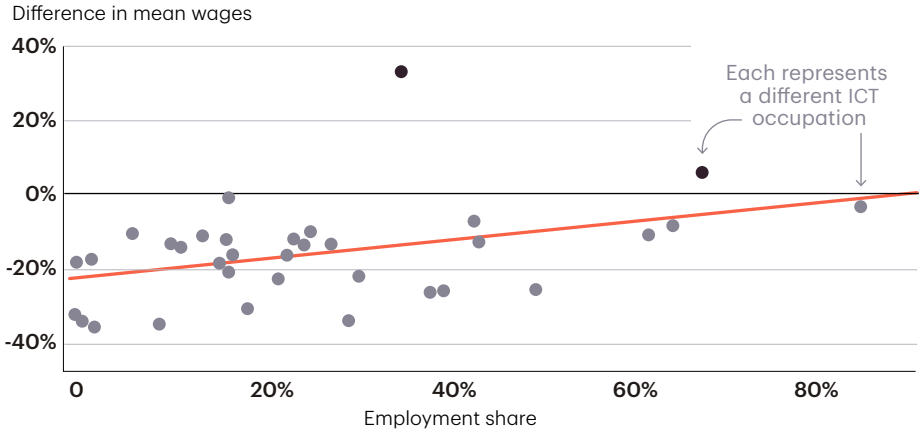
- Use "gender audits"[121] more broadly to review role descriptions, promotion criteria, responsibilities, and more with a gendered lens.
- Implement confidential protocols for collecting disaggregated demographic information (e.g., by HR) in order to monitor pay and promotion equity.

Of the above suggestions, "**standardizing promotional structures**" was cited most frequently by women in tech engaged in this study. Standardizing these processes requires equal and fair, **data-driven evaluations**. Some focus group attendees suggested that building out formal and transparent job-family matrixes that showcase performance requirements for each role can be beneficial in promotional structures.

Barrier II The Gender Pay Gap

A prominent barrier to success for women in the digital economy is the gender pay gap. According to Statistics Canada's 2021 Census data, pay equity is more likely to occur in ICT occupations with a strong representation of women (see Figure 7), whereas ICT occupations where women are poorly represented tend to experience higher differences in average wages.[122] Figure 8 further compares gender diversity and pay equity for the 10 ICT occupations where women account for the lowest percentage of employment representation. It shows that the average wage for men is higher in eight of the 10 listed occupations and that women working as graphic designers and illustrators, web designers, and database analysts and data administrators experience the largest difference in average wages.

Fig. 7 Difference in Mean Wages by Gender (Men and Women)



In Canada, ICT occupations that have lower proportions of women employed see higher gaps in average wages.

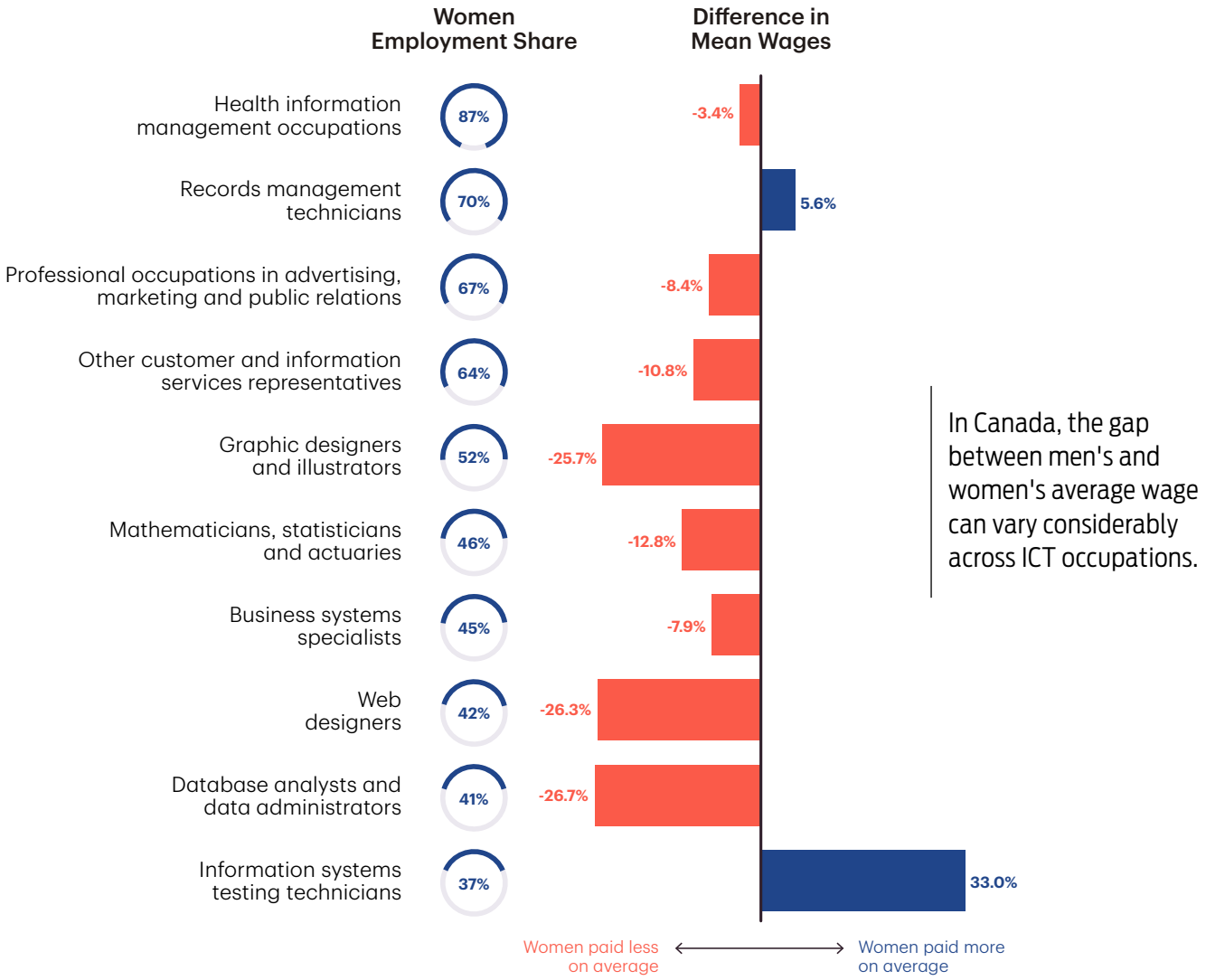
Difference in mean wages by gender (men and women) employment share, Source: Statistics Canada, 2021 Census Tables: 98-10-0412-01, 98-10-0449-01, ICTC Analysis.[123]

120 Jeannie Harvey and Patricia Morris, "The Gender Audit Handbook: A Tool for Organizational Self Assessment and Transformation," InterAction, 2010, https://www.rcrc-resilience-southeastasia.org/wp-content/uploads/2015/12/Gender-Audit-Handbook-2010-Copy.pdf

121 This finding holds true when examining the median wage as well.

122 These numbers are trans-inclusive. Estimates are from the 2021 census data which uses Men+ and Women+ groupings when providing average and median wage data. The data does not include nonbinary, and gender nonconforming individuals. Analysis completed by ICTC.

Fig. 8 Top 10 ICT Occupations:
Share of Employment and Difference in Mean Wages



Difference in mean wages for the top 10 ICT occupations with the highest employment share of women.
Source: Statistics Canada, 2021 Census Tables: 98-10-0412-01, 98-10-0449-01, ICTC Analysis.[124]

Understanding and measuring the extent of pay gaps can be challenging and is subject to data constraints. For example, in ICTC's own analysis, the occupational codes' (NOC codes), which are an aggregation of several roles of varying seniority and experience level, likely affect estimates. For instance, we cannot see the gendered difference in pay for an entry-level graphic designer working in advertising; we only see that, on average, for all graphic designers, women are earning less. The presence of these occupational pay differences, displayed in the graphs above, allude to larger structural issues explored more concretely in the literature.

124 These numbers are trans-inclusive. Estimates are from the 2021 census data which uses Men+ and Women+ groupings when providing average and median wage data. This particular employment data does not include nonbinary, and gender nonconforming individuals. Analysis completed by ICTC.

Persistent pay gaps are a very real example of gender inequity that challenges ongoing efforts to retain mid- and senior-level women in the digital economy. If women are not fairly compensated for the work they produce, they may choose to look elsewhere—including another industry—for fair compensation, which may ultimately affect the pipeline of women for senior-level roles in the digital economy. Research on pay gaps suggests it is a complex issue stemming from different factors. Often cited are differences in the type of work women pursue (occupational sorting), educational and experience backgrounds, and gendered family responsibilities that act as a barrier to high-paying careers that require long hours.[125] Another often-cited reason for the existence of pay gaps is that women are less likely to ask for a raise. However, data from Australia suggests that women, in fact, do ask for raises as frequently as men but are less likely to receive one. Luckily, this trend does not appear to exist for younger generations, suggesting that equity in salary negotiation is improving.[126] Nonetheless, further collaboration between policymakers and technology employers is needed to ensure promotions and pay are awarded fairly.

Solutions: Improve Gender Diversity in Senior-Level Roles by Addressing Pay-Related Barriers

A serious approach to improving gender diversity in senior-level roles must include policies to close the gender pay gap. Results vary depending on context and role; however, research suggests that **salary transparency** can help to reduce gendered pay gaps.[127] Participants in this study surfaced several ways for companies to improve salary transparency. For one, companies can require new job postings to include salary information so that potential and new hires have a clear starting point when negotiating their pay. Notably, the Government of Prince Edward Island passed legislation in 2022 requiring all employers who publicly advertise a job posting to include information about the expected pay or range of pay for the position.[128] Participants in this study noted a potential benefit for employers who publish salary ranges. One participant, a digital economy employer, indicated that after including salary ranges in their postings online, more people became interested in applying.

125 Jessica Schieder and Elise Gould, "'Women's work' and the gender pay gap: How discrimination, societal norms, and other forces affect women's occupational choices—and their pay," Economic Policy Institute, July 2016, https://www.epi.org/publication/womens-work-and-the-gender-pay-gap-how-discrimination-societal-norms-and-other-forces-affect-womens-occupational-choices-and-their-pay/

126 Research: Women Ask for Raises as Often as Men, but Are Less Likely to Get Them (hbr.org)

127 Unfortunately, this study also found that the leading channel through which transparency reduces the gender wage gap is by decreasing the rate of wage growth for men, rather than increasing the rate of wage growth for women. In addition to the continued improvement of pay transparency, strategies to improve wage equity should come from increasing the wage growth rate for women.; Morten Bennedsen, Birthe Larson, and Jiayi Wei, "Wage Transparency and The Gender Pay Gap: A Survey," Journal of Economic Surveys (Forthcoming), 2022, https://ideas.repec.org/p/hhs/cbsnow/2022_011.html; Michael Baker, Yosh Halberstam, Kory Kroft, Alexandre Mas, and Derek Messacar, "Pay Transparency and the Gender Gap," Statistics Canada, 2019, https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019018-eng.htm

128 Department of Workforce, Advanced Learning and Population, "Pay Transparency," Government of Prince Edward Island, 2022, https://www.princeedwardisland.ca/en/information/economic-growth-tourism-and-culture/pay-transparency

A second way for companies to improve their salary transparency is by publishing gendered information about their current employees' pay. While **gendered pay information** does not equate to gender pay equity, it does create transparency and accountability, enabling employers and employees to negotiate more equitable workplaces. Interestingly, research from 2021 found that among a sample of Canadian public companies, just 11% published gendered information about pay. This was more than in the United States, where 5% of public companies publish gendered information about pay, but less than in other important peer countries, including Spain (82%), the United Kingdom (78%), Italy (55%), France (27%) and Australia (20%).[130] As of June 2022, the Government of Canada has required all federally regulated private-sector employers to publish aggregate pay gap information in their annual equity reports.[131] While this requirement applies to some of Canada's largest employers (e.g., banks, telecommunications companies, rail and air transportation companies, and more), it does not apply to employers that are not regulated by the federal government. Some Canadian provinces have begun developing their own responses,[132] however, additional work is needed to bring more Canadian companies into the fold.

Barrier III Isolation, Tokenism, and Imposter Syndrome

Women have reported feelings of isolation and loneliness in workplaces in which they are underrepresented. An American survey of women in science, engineering, and technology (SET) roles found that women felt isolated at work, especially in engineering and other fields dominated by men.[133] More specifically, this survey noted that 27% of women in science, 38% of women in technology, and 44% of women in engineering felt isolated in the workplace.[134] This sentiment was also echoed by a focus group attendee, who noted that this challenge also exists in the Canadian context, stating, "You feel so lonely because you are the only woman on the team."

Being the lone woman in a team, organization, or on executive level can have negative implications for career progression and professional development. Harvard's Athena Factor report found that workplace isolation can make it difficult to find peer support, with between 84% to 88% of women in SET saying they lack sponsors and 47% reporting a lack of mentors in tech.[135]

130 Ibid.

131 ESDC, "Pay gap reporting in federally regulated private-sector workplaces," Government of Canada, 2022, https://www.canada.ca/en/employment-social-development/corporate/portfolio/labour/programs/employment-equity/pay-gap-reporting.html

132 B.C. Gov News, "B.C. moves toward pay transparency measures," Government of British Columbia, 2022, https://news.gov.bc.ca/releases/2022FIN0009-000304

133 Sylvia Ann Hewlett, Carolyn Buck Luce, Lisa J. Servon, Laura Sherbin, Peggy Shiller, Eytan Sosnovich, and Karen Sumberg, "The Athena Factor: Reversing the Brain Drain in Science, Engineering, and Technology," Harvard Business Review, 2008, https://store.hbr.org/product/the-athena-factor-reversing-the-brain-drain-in-science-engineering-and-technology/10094

134 Ibid.

135 Ibid.

136 Ibid.

The lack of mentors advocating for and guiding women from entry into mid- and senior-level roles has resulted in 40% of women feeling "stalled or stuck in their careers."[136] Similarly, mid-career professionals engaged in this study repeatedly told ICTC that they were looking for mentorship opportunities but struggled to find support due to the lack of available mentors:

Focus Group Participant

Some women don't have mentors in the same way that men do with the boy's club. It's a real thing. In the last 22 years of my career, I worked mainly in a male-dominated industry, and I can see it. Although it's not as obvious as it was maybe 20 years ago, it is still here. A lot of conversations still happen on a golf course or over a beer at the bar. And I just don't think a lot of us [women] benefit from that.

Finding mentors can be even harder for women of colour who have reported feeling out of place in the workplace.[137] Some women of colour even avoid attending social engagement sessions due to a fear that it will lead to negative perceptions of their competencies.[138] Racialized women added that they feel a lack of support and guidance and often have their competencies and authority questioned.

Being the only woman on a team or in an organization can lead to perceived tokenism, whereby the presence of women employees is perceived as a response to institutional pressures to appear committed to EDI policies, as opposed to a genuine commitment to intellectual and cultural diversity.[139] This is particularly common among racialized women in STEM, who have noted that they were "expected to do the diversity work of the institution."[140] Tokenism can manifest in varying parts of operations. This may include being assigned to hiring committees or mentoring students of colour and can adversely impact individuals who feel responsible to represent their racial and gender group in a positive manner.[141] The struggle to help others move up while also maintaining a healthy work-life balance was a common issue among focus group attendees. One focus group participant summed it up by saying this:

Focus Group Participant

I've interviewed a lot of folks, and I've been asked to be part of the interview process, particularly because I'm one of the only few women [and] also a person of colour in a tech leadership role. And so, I've noticed, for myself, I've been put into manager phone call interviews with another person just to give that portrayal of, yes, we are open to [diverse] candidates. But then, for myself, it's starting to become burdensome. At the same time, I don't know how to navigate that because, obviously, I do want to welcome folks. But I [also] need to balance my own schedule and my own needs.

136 Ibid.

137 National Academies of Sciences, Engineering, and Medicine, "Transforming Trajectories for Women of Color in Tech," The National Academies Press, 2021, https://doi.org/10.17226/26345

138 Ibid.

139 Orhun Guldiken, Mark R. Mallon, Stav Fainshmidt, William Q. Judge, and Cynthia E. Clark, "Beyond tokenism: How strategic leaders influence more meaningful gender diversity on boards of directors," Strategic Management Journal, 2019, https://doi.org/10.1002/smj.3049

140 Meredith Nash and Robyn Moore, "In/visible: The intersectional experiences of women of color in science, technology, engineering, mathematics, and medicine in Australia," Gender, Work & Organization, 2022, https://onlinelibrary.wiley.com/doi/full/10.1111/gwao.12908

141 Ibid.

Isolation, tokenism, and imposter syndrome can lead to women opting out of the digital economy to seek other opportunities. The isolation and tokenism that women face in the digital economy contribute to a belief that they are not capable or do not have the knowledge or experience necessary for their positions or aspirational positions. Imposter syndrome can lead to anxiety, among other wellness issues.[142] Imposter syndrome becomes an institutional concern in women who do not see themselves, their abilities, or their current competencies reflected and valued. To provide support, organizations are encouraged to build a welcoming culture that values diversity of thought.

Solutions: Building Networking and Mentorship Opportunities for Women

Many companies have prioritized strengthening company culture and building inclusive workplaces. Where isolation exists, **workplaces can create networks for women beyond their immediate teams**, such as by working with leadership academies to provide women in tech an opportunity to connect with similar people and develop skills to meet their career goals (e.g., leadership training, negotiation skills, and career coaching).[143] The software company SAP, for example, has developed an SAP Women in Tech team that highlights and builds women leaders within the business. This initiative provides women with a platform to showcase their expertise through their "Get Ready" speakers series or through its partnerships with the United Nation's Equals program, "Girls and Women Talking Tech."[144]

Both **informal and formal mentorships inside and outside of the workplace** are seen to strengthen and advance gender representation and retention in an organization. Some focus group participants indicated that they are looking for guidance on work-life balance, leadership, career advancement, and strategies for navigating male-dominated work environments. Focus group participants acknowledged that lifelong mentors are impractical and instead recommended developing a network of mentors that can be tapped when needed. As demonstrated by the following quotes, participants shared their personal experiences with mentorship, as well as strategies for seeking out mentors, such as sending cold emails or messaging contacts on LinkedIn.

Advisory Committee Member

I do think mentorship is important, and I've been working with a lot of young post-secondary women through a mentorship program. We always say that it is not a power relationship. We call it reverse mentorship. We build a female-centric ecosystem so that it's a gift back and a gift forward (mentees can become mentors in the future). ”

143 National Academies of Sciences, Engineering, and Medicine, "Transforming Trajectories for Women of Color in Tech," The National Academies Press, 2021, https://doi.org/10.17226/26345.

144 SAP, "SAP 2021 Diversity and Inclusion Report," 2021, https://www.sap.com/about/company/our-values/diversity.html?pdf-asset=44fdf3c3-327e-0010-bca6-c68f7e60039b&page=11

Focus Group Participant

I feel like there's a lot of misunderstandings about mentorships, that it is supposed to last for a long time, and that's not true. A lot of mentorship opportunities I've had have been short: a couple of weeks or couple of months, and they fizzle out naturally when I'm not needed anymore. I think that the myth of having this lifelong permanent grandfatherly mentor in your life is nonsense that doesn't exist. ”

Focus Group Participant

For me personally, mentorship has helped me a lot to develop within my career. I've reached out to people on LinkedIn who have the same background, and some have been willing [to mentor me], and some have not. Mentors have taught me or guided me, sharing lessons, so I didn't make the same mistakes. Helping me learn things that would have taken me a lot longer to learn [on my own]. And as a result, I was able to advance and get those skills quicker. ”

During the co-design workshop for this project, participants highlighted that organizations could offer their women employees opportunities to build their networks within working hours, such as by attending or speaking at conferences that showcase diversity, attending networking events, and partnering with community groups. Recently, Toast,[145] a membership-based community of Canadian women in tech, was launched with a mission to build connections and improve gender equity in tech.[146] These networking and mentorship opportunities were shared as avenues for organizations to support their women employees. In conjunction with other avenues for inclusion, mentorship can improve attrition rates and help build the leaders of tomorrow.

Barrier IV Barriers for Mothers

Mothers working in the digital economy face unique barriers to successful employment. Two examples are **career gaps**, which occur when a woman takes time off work during pregnancy and/or to take care of a newly arrived child, and **caregiving duties**, which due to historical biases, can fall disproportionately on women. Each of these barriers was surfaced by participants in this study and is explored in more detail below.

Career gaps during or after pregnancy can negatively impact mothers' careers. Indeed, research demonstrates a variety of challenges associated with career gaps.

145 Toast, “Make Toast Work for You,” n.d., https://www.trytoast.ca/

146 Tara Deschamps, “Women's tech collective Toast launches with aim to diversify hiring, reduce wage gaps,” The Globe and Mail, 2023 https://www-theglobeandmail-com.cdn.ampproject.org/c/s/www.theglobeandmail.com/amp/business/technology/article-womens-tech-collective-toast-launches-with-aim-to-diversify-hiring/

A 2021 Canadian survey by the STEM Moms Network looked at the experiences of STEM mothers who had recently returned to work: it found that among survey respondents, the most commonly reported challenges were having to revert to a junior position, not having the energy to reclimb the corporate ladder, losing touch with professional networks, and not being notified of or in the loop about new opportunities.[147] In follow-up discussions, survey respondents reported that following a career gap, it was often easier to find work in non-technical roles than technical roles. Several mothers attributed this to technical roles not being flexible enough (e.g., in terms of hours, schedule, etc.) to accommodate new mothers. According to respondents, while flexible or part-time schedules can be valuable for new mothers transitioning back into the workforce, these are often not provided as an option for technical roles, causing women to instead opt for non-technical roles following an extended career gap. While similar challenges exist across the economy, career-gap-related challenges may be heightened in the digital economy, where new mothers must compete for employment and promotions in a workforce largely dominated by men.

A survey by Moms at Work, Canada's largest network of working mothers, similarly looked at the experiences of over 1000 women who had taken maternity leave from their workplace in the past decade.[148]

147 Julie Hawco (February 2021), STEM Moms, Calgary, Alberta.

148 Moms at Work, "2021 Maternity Leave Experience Report," 2021, https://thisismomsatwork.com/wp-content/uploads/edd/2021/05/2021-Maternity-Leave-Experience-Report-Moms-at-Work-1.pdf

While not specific to the digital economy or STEM, the survey highlights an overall lack of support for mothers transitioning in and out of the workplace: notably, 95% of respondents indicated that they had no formal support from their employer during their maternity leave transition, 79% felt that their return to work could have been managed better, 79% were not provided with any options for a gradual return to work, and 58% said their employer was not prepared for their return to work.[149] Due to a lack of support, 40% of respondents said they considered quitting during the return-to-work process.[150]

Participants in this study echoed many of the above challenges. One participant shared her own experience, indicating that when she returned from work after her maternity leave, her own role was no longer available, while the person who had been hired to cover her leave had been retained and promoted. Experiences like these can lead women to feel like they have to choose between their family and their career. Indeed, a 2021 study about academic women in STEM found that academic women in STEM are often dissuaded from having children altogether because of the negative impact on their careers.[151] Research about the experiences of STEM women more broadly highlights the range of concerns women can have about becoming a mother during their career, including the overall unknowns and concerns about having the confidence to "get back in the game," how to return to the workforce in a similar position, maintaining professional networks and memberships, and having the ability to maintain designations.[152]

Caregiving duties often fall disproportionately on women, creating additional workloads and challenges for working mothers. While these challenges have existed for some time, research suggests that they were exacerbated by the COVID-19 pandemic. A 2020 survey looked at the experiences of more than 1,500 Canadian women and found that 71% of surveyed women felt more anxious, depressed, isolated, overworked, or ill during the pandemic, specifically due to an increase in unpaid care work. While the survey also found men to have taken on more care-related work during the pandemic, results indicated that care-related work (such as preparing meals, cooking, and cleaning) fell disproportionately on women.[153] These results are corroborated by another survey, which found that women in tech were three times more likely than men to shoulder household work during the pandemic,[154] and by participants in this study, who felt that working from home during the pandemic impacted women more negatively than men. Many of the mothers who participated in focus groups for this study noted that they hold a primary caregiving role in addition to working full-time and that working from home can blur the already opaque lines between work responsibilities and caregiving responsibilities.

149 Ibid.

150 Ibid.

151 Christine O'Connell and Merryn McKinnon, "Perceptions of Barriers to Career Progression for Academic Women in STEM," Societies, https://openresearch-repository.anu.edu.au/bitstream/1885/276251/1/societies-11-00027-v2.pdf

152 Julie Hawco used snowball methodology to distribute her anonymous surveys, using Google Forums and Slack channels to collect responses on extended career breaks, corporate structures, career growth, dual competing care, role models and male allyship.

153 Oxfam Canada, "71 Percent of Canadian Women Feeling More Anxious, Depressed, Isolated, Overworked or Ill Because of Increased Unpaid Care Work Caused by COVID-19: Oxfam Survey," 2020, https://www.oxfam.ca/news/71-per-cent-of-canadian-women-feeling-more-anxious-depressed-isolated-overworked-or-ill-because-of-increased-unpaid-care-work-caused-by-covid-19-oxfam-survey/

154 TrustRadius, "TrustRadius 2021 Women in Tech Report," 2021 https://www.trustradius.com/buyer-blog/women-in-tech-report

Increased caregiving responsibilities could be one reason why women reported being more dissatisfied with work during the pandemic. Notably, Deloitte surveyed 500 women in the technology, media, and telecom (TMT) sector before and after the onset of the pandemic and found that, overall, women in TMT became less satisfied with many aspects of their work after the pandemic. The percentage of women rating their work-life balance as either "good" or "extremely good" declined by 38 percentage points. Similarly, the percentage of women rating their "mental well-being" and "physical health and well-being" as either "good" or "extremely good" declined by 36 and 27 percentage points, respectively.[155] Still, another survey found that during the pandemic, women in tech (57%) experienced burnout due to work at a greater rate than men (36%).[156]

155 Susan Hupfer, Sayantani Mazumder, Ariane Bucaille, and Gillian Crossan, "Women in the tech industry: Gaining ground, but facing new headwinds: Technology companies should renew their commitment to advancing gender diversity as the pandemic recedes," Deloitte UK, 2021, https://www2.deloitte.com/uk/en/insights/industry/technology/technology-media-and-telecom-predictions/2022/statistics-show-women-in-technology-are-facing-new-headwinds.html

156 TrustRadius, "TrustRadius 2021 Women in Tech Report," 2021 https://www.trustradius.com/buyer-blog/women-in-tech-report

Accounting for Intersectionality: Working from Home Increases Accessibility for Women with Disabilities

While the COVID-19 pandemic was particularly challenging for people with disabilities, including difficulty accessing medical care and increased risk of morbidity and mortality,[157] one silver lining was the widespread acceptance and adoption of work-from-home policies, especially in the technology sector.[158] It is now evident that there are several advantages of remote work for women with disabilities.

At the most fundamental level, the ability to work from home reduces many physical barriers that people with disabilities are typically subjected to.[159] A recent UK study that examined the impact of COVID-19 on people with disabilities emphasized the paradigm shift caused by working from home and how it has positively impacted people with disabilities. That study stated, "No matter if transport or buildings are physically inaccessible, or are tiring to use, everyone is online. No matter if you find it hard to interact with people, you can do so online and not even turn your webcam on."[160]

An ICTC focus group attendee similarly said that the shift to remote work is "very positive for people with disabilities" and for people who face biases due to how they present themselves physically. Another attendee spoke of her own experience as someone who has "thrived because they're behind a screen." For her, working remotely made her feel more comfortable speaking up in meetings and voicing her opinion in a company and field largely dominated by men. Similarly, another woman felt that working from home could reduce the impact of microaggressions and office politics on women, making them feel more comfortable in a men-dominated field.

While there is still debate as to whether the COVID-19 pandemic and the shift to work from home have served as an equalizer or not,[161] it cannot be ignored that remote work has significantly improved workplace accessibility for many women with disabilities. Still, companies will need to work to ensure their online environments are accessible to all women, including neurodivergent women, and should not use working-from-home policies as a way to avoid making physical office spaces accessible.

157 Douglas Kruse, So Ri Park, Yana van der Meulen Rodgers, and Lisa Schur, "Disability and remote work during the pandemic with implications for cancer survivors," Journal of Cancer Survivorship, 2022, https://link.springer.com/article/10.1007/s11764-021-01146-z

158 Lisa A. Schur, Mason Ameri, and Douglas Kruse. "Telework After COVID: A "Silver Lining" for Workers with Disabilities?" Journal of Occupational Rehabilitation, 2020, https://link.springer.com/article/10.1007/s10926-020-09936-5

159 Ibid.

160 Tom Shakespeare, Nicholas Watson, Richard Brunner, Jane Cullingworth, Shaffa Hameed, Nathaniel Scherer, Charlotte Pearson, and Veronika Reichenberger, "Disabled people in Britain and the impact of the COVID-19 pandemic," Journal of Social Policy and Administration, 2021, https://onlinelibrary.wiley.com/doi/full/10.1111/spol.12758

161 Lisa Schur, Douglas Kruse, and Peter Blanck, "People with Disabilities: Sidelined or Mainstreamed?" Cambridge University Press, 2013 https://link.springer.com/article/10.1007/s10926-014-9502-0

Many digital economy employers have permanently adopted hybrid or remote work, meaning the above challenges are likely here to stay. While some women appreciate the flexibility that working from home provides,[162] organizations need to consider the challenges that hybrid or remote work can create for working mothers, too. Importantly, there are no one-size-fits-all solutions, meaning a comprehensive work-from-home policy will need to be flexible, account for the diverse experiences of working mothers in the digital economy, and be informed by robust employee consultations.

162 David Coletto, "Flexibility is now table stakes for Canadian workers, especially women," Abacus Data, 2023, https://abacusdata.ca/women-future-of-work-the-honest-talk/

Solutions: Enabling Mothers in the Digital Economy to Be More Successful by Reducing the Negative Implications of Career Gaps and Gendered Caregiving Duties

Employees can help reduce the negative implications of career gaps by being more supportive of mothers before, during, and after their parental leave. Indeed, women who participated in this study were adamant that starting a family should not and does not have to be career limiting. Accordingly, participants highlighted actions that organizations could take to better support a woman working in the digital economy as they transition to being a mother working in the digital economy. These are summarized in Table 2 below.

Table 2 A synthesis of action items from ICTC's focus groups, co-design workshop, and Hawco's STEM Moms Network[163]

How Can Organizations Support Soon-to-Be Parents?		
Before Leave	**When on Leave**	**Returning to Work**
Complete performance review prior to leave. Build a culture that makes it acceptable for soon-to-be parents to take time off for medical and other appointments. Develop a plan for off-boarding. Hire a replacement prior to leave, so there is time to sufficiently train the replacement.	Have a conversation about communication preferences during leave: some parents might want to continue having access to emails or receiving organizational updates. Continue inviting parents who are on leave to social calendar events, such as team lunches and holiday parties. For optimal inclusion, opt for child-friendly events. Continue to suggest those on leave for suitable roles. Notify those on leave of new opportunities, whether internal or externally posted.	Schedule a pre-return meeting to go over major updates. Ensure pre-return prep is complete, including all necessary equipment and approvals. Discuss a return-to-work plan with well-defined roles, responsibilities, and regular check-ins. Provide flexible work options, such as part-time work, flexible hours, a compressed work week, or job-sharing. Ensure up-to-date resources are available to help new parents manage their mental health and well-being. Offer upskilling, education, and professional development opportunities upon return.

In addition to the above strategies, companies can take steps to normalize parental leave among fathers. For instance, the former CEO of Twitter, Parag Agrawal, took paternity leave from his company in hopes of setting an example for other fathers.[164]

163 Julie Hawco, "STEM Moms Network," 2021, Calgary, Alberta

164 Ella Ceron, "Twitter CEO's Paternity Leave Sparks Question of How Much Is Enough," Bloomberg, 2022, https://www.bloomberg.com/news/articles/2022-02-18/twitter-ceo-s-paternity-leave-sparks-question-of-how-much-is-enough?leadSource=uverify%20wall

Supporting women through **strong workplace policies that encourage family values, work-life balance, and mental well-being** was highlighted as important to preventing poor mental health and burnout. A key part of this is implementing flexible work policies, such as paid sick leave (that covers both parents and kids being sick) and flexible work schedules (that free up workers for school drop-offs and other family priorities). Another way to encourage family values is by reducing unnecessary pressures that detract from work-life balance. Here, examples include unnecessary overtime and work cultures that prevent employees from disconnecting fully at the end of the day. In addition to this, participants in ICTC's co-design workshop stressed the importance of childcare in promoting work-life balance and easing work-related stress.

While family-friendly policies are vital to supporting women in the digital economy, more needs to be done to prevent poor mental well-being and burnout—especially during times of crisis. Participants in ICTC's co-design workshop suggested offering training on how to avoid burnout and providing coverage for mental health practitioners and therapists. Finally, employers are encouraged to engage in "gender audits"—e.g., review roles and the associated responsibilities through a gendered lens. Gender audits can be used to identify and address the unfair distribution of emotional and administrative tasks, which are often shouldered by women.[165]

163 Julie Hawco, "STEM Moms Network," 2021, Calgary, Alberta

164 Ella Ceron, "Twitter CEO's Paternity Leave Sparks Question of How Much Is Enough," Bloomberg, 2022, https://www.bloomberg.com/news/articles/2022-02-18/twitter-ceo-s-paternity-leave-sparks-question-of-how-much-is-enough?leadSource=uverify%20wall

Co-Design and EDI Data:
Two Best Practices for Successful EDI Initiatives

Participants in this study highlighted two best practices that lead to successful EDI initiatives: co-design and EDI data. These best practices, including their importance to EDI and ideas for how to accomplish them, are discussed in more detail below.

Leveraging Employee Resource Groups to Co-Design EDI Initiatives

To ensure that EDI initiatives benefit the demographic groups they are meant to support, employers should co-design EDI strategies, programs, and policies with affected employees. For example, employees who are expecting or have children should be engaged in the creation of family policies.

Attendees of ICTC's focus groups noted that employee resource groups (ERGs) are one way to co-design EDI initiatives successfully. ERGs are "voluntary, employee-led diversity and inclusion initiatives that are formally supported by an organization."[166]

Recognizing employees as key stakeholders of a company, ERGs can be used as "tools to align stakeholder needs, shape corporate strategy, connect employees to one another for a common purpose, contribute to community healing, and advance the overall success of a company."[167] When done correctly, ERGs help improve transparency and trust between employers and employees,[168] and can help address systemic barriers preventing gender diversity in the digital economy. Best practices for co-designing EDI initiatives through ERGs include:

1. Leveraging ERGs to diversify networks and strengthen pipelines
2. Listening to feedback obtained in ERGs to improve retention and workplace culture
3. Encourage employees to attend ERG events and meetings and celebrate notable achievements
4. Have a C-suite level sponsor who can advocate for ERG's initiatives
5. Commit funding and resources to support ERG initiatives
6. Support staff who sit on ERGs by building their contribution into their job description and performance review
7. Track and report on progress so that the ERG can constantly improve to meet the unique needs of each organization[169]

EDI Data: Data-Informed Initiatives and Measuring Progress on EDI

In addition to being co-designed with relevant demographic groups, EDI initiatives should be informed by broad EDI data. Examples include gender diversity data, data about where (e.g., in which departments, teams, roles, and level of seniority) women are represented, and data about gender-specific recruitment, retention, and attrition rates. Accordingly, the first step in any EDI strategy is laying the groundwork to collect this data. This will help organizations design and implement EDI initiatives that are relevant to their organizational context and needs. For example, if an organization finds that its challenges lie with the retention of women, it might not make sense to focus initiatives on recruitment (that is, unless their retention challenges stem from not having a diverse enough workplace in the first place).[170]

Organizations can also use broad EDI data to monitor progress on their overarching EDI goals, such as organization-wide gender representation. Indeed, participants in this study noted the many positive impacts that measuring and reporting broad EDI data can have.

To effectively measure the progress of individual initiatives, however, organizations must track key performance indicators (KPIs) that are specific and relevant to individual goals. This helps signal which initiatives are working well and which are not. It also gives organizations an opportunity to both lean into their strengths (by expanding funding for or the scope of successful initiatives) and investigate and respond to implementation challenges when they arise.

Through ICTC's focus groups and co-design workshop, women in tech brainstormed ideas on how to best measure the success of EDI initiatives. Participants engaged in this study said that one of the easiest KPIs is simply **measuring the uptake of EDI initiatives**. This could include quantifying the number of employees engaged in an ERG or the number of organizational leaders who complete inclusive leadership and/or unconscious bias training. Focus group attendees suggested that this data could be compared to baseline data or be used to help set higher diversity standards within an organization. While understanding the number of people engaged in EDI initiatives may be one measure of success, KPIs should not stop there. Participants in this study suggested that **strong review processes** should be built into EDI initiatives. Review processes could include conducting anonymous self-evaluations or surveys pre- and post-implementation of EDI initiatives. This could be done for the implementation of larger initiatives like family benefits or ERGs but can also be done for smaller initiatives like virtual water coolers. Ultimately, strong review processes are important to ensure that EDI strategies are benefiting the communities they have been designed for while remaining sustainable for the organization. Focus group and co-design workshop attendees of this study also stressed that **evaluating progress is ongoing** and should be done at multiple stages of program implementation and development. Some focus group attendees also stressed the need to publish findings and progress (e.g., following gender audits and program evaluations) for employees or even to the broader public so as to help boost accountability in EDI. While these KPIs are a good starting point, KPIs should be modified for specific EDI initiatives and targets.

166 Gartner, "Employee resource Group (ERG)," n.d., https://www.gartner.com/en/human-resources/glossary/employee-resource-group-erg-

167 Salesforce, "A Study of the Structure and Operations of Employee Resource Groups," 2021, https://www.salesforce.org/wp-content/uploads/2021/11/spc-report-structure-operations-of-ergs-111021-v1.pdf

168 Benevity, "The Solution to Your Engagement Challenges: Employee Resource Groups," n.d., https://benevity.com/resources/employee-resource-groups-create-belonging

169 Ibid.

170 Christina Wood, "Diversity and inclusion: 7 best practices for changing your culture," CIO, 2023, https://www.cio.com/article/228581/diversity-and-inclusion-8-best-practices-for-changing-your-culture.html

Summary Table: Corporate Transformation at the Organizational Level

Table 3 provides a summary of the strategies that can be used to overcome barriers at the organizational level, including gender bias, isolation, tokenism, imposter syndrome, career gaps for STEM mothers, and mental health and burnout. These strategies can be implemented by boards of directors, corporate governance teams, human resources professionals, EDI professionals, and more.

Table 3 Summary table of organizational-level action items

Organizational Level Transformation		
Measurable Solution(s)	**Outcome** What is the desired outcome?	**Actions** What actions can be taken to address the barrier?
Barrier I	**Gender Bias in Promotions, Performance Reviews, and Roles**	
Unconscious bias training	Gender biases that may affect the hiring process, the distribution of tasks, and promotional structures are uncovered and addressed.	◤ Create an equitable organizational culture by having open discussions about gender biases and their impact on the distribution of administrative tasks and emotional labour. ◤ Implement policies that recognize and reward emotional labour, which may disproportionately fall on women. ◤ Ensure biases do not result in gender discrimination by implementing and upholding employment rights.
Audit and standardize promotional structures	Biases in the performance review and promotion process are identified and addressed. Promotion structures become equitable.	◤ Conduct gender audits and incorporate them into performance reviews and promotional structures. ◤ Implement recommendations and suggestions following gender audits. ◤ Build standardized, data-driven promotional structures. ◤ Build out formal and transparent job-family matrixes that showcase performance requirements for each role.
Shatter the lavender ceiling	More inclusive workplaces for people of diverse gender identities and gender expressions.	◤ Develop policies that address gender identity and gender expression. ◤ Create action plans to deliver diversity and inclusion strategies and set targets. ◤ Use gender-neutral language in corporate documents.

		◤ Ensure benefits are relevant to the needs of LGBTQIA2S+ employees. ◤ Build open communication through Employee Resource Groups (ERGs) and other mechanisms. ◤ Support gender transitions in the workplace.
Barrier II	**The Gender Wage Gap**	
Build pay equity	Pay-related barriers are addressed, and pay equity is achieved, in turn improving gender diversity in senior-level roles.	◤ Build salary transparency, including salary ranges, in job postings. ◤ Publish gendered information about employee pay.
Barrier III	**Isolation, Tokenism, and Imposter Syndrome**	
Build inclusive networking opportunities	Provide women with networking opportunities in a manner that supports professional development and career advancement.	◤ Eliminate gender-coded networking events (e.g., boys club) that exclude women. ◤ Offer women employees opportunities to build their networks within their working hours (e.g., by attending or speaking at conferences, attending networking events, or partnering with community groups). ◤ Encourage women to engage with grassroots and community organizations (e.g., Chic Geek and Toast) that can provide a supportive women-led network. This is especially important when women can't organize a women's network in the workplace due to gender imbalances.
Build informal and formal mentorship opportunities	Strengthen the informal and formal mentorship opportunities for women inside and outside the workplace.	◤ Encourage women employees to seek mentors when attending networking events. Build mentor-mentee relationships formally within organizations.
Barrier IV	**Barriers for Mothers**	
Parental Leave and STEM Mom supports	Develop support before, during, and after extended leaves.	◤ Continuously build a flexible work culture. ◤ Complete performance reviews, establish an off-boarding plan and hire a replacement prior to parental leave.

		◤ During leave, maintain connection to ensure parents are included in workplace events, social calendars, and are notified when new opportunities or job postings are published. ◤ Schedule a pre-return meeting, which should address a return-to-work plan, provide opportunities for flexible work options, and update mental health and health benefits, if needed.
Policies on family-friendly values, work-life balance, and mental well-being	Support women through strong workplace policies that encourage family values, work-life balance, and strong mental well-being.	◤ Review policies to ensure they prioritize family-friendly values, work-life balance, and mental well-being. ◤ Offer flexible policies such as sick leave (for parents and their children) or flexible work schedules that free up workers for school drop-offs. ◤ Encourage employees not to work unnecessary overtime. ◤ Offer mental well-being training to address burnout.

Diversity-Enabling Infrastructure at the Ecosystem Level

Participants in this study noted that primary barriers to the representation of women in leadership span the entire ecosystem. Accordingly, this section discusses ecosystem-wide best practices that various stakeholder groups, including policymakers, support organizations (e.g., incubators, accelerators, and investors), industry associations, and employers can enact to develop diversity-enabling infrastructure at the ecosystem level.

Barrier I Gender Stereotypes about Leadership and STEM during Early-Career Decision Making

Gender stereotypes about leadership (who makes a good leader, what qualities leaders need to succeed) have been addressed throughout this paper but are deep-rooted issues that go beyond something a single workplace or individual manager can address alone. Early in their careers, women may internalize gender stereotypes and self-select into non-leadership roles.[171] Some research points to a critical period before or during college where interventions that encourage leadership aspirations are more likely to be effective.[172] Gender stereotypes regarding career advancement and leadership are complex problems, but a chronic lack of representation of women in senior-level roles may contribute to women not being able to see themselves in roles that prioritize attributes associated with masculinity.

Gender stereotypes about science and technology also impact career trajectories at an early stage. Without returning to the now-problematized "leaky pipeline" metaphor, many studies have shown that women exit STEM before, during, and after college, highlighting the importance of STEM readiness before post-secondary, choices of major, and transitions into one's first job as a graduate.[173] Again, this challenge is systemic, but organizations in Canada's technology ecosystem have an opportunity to improve the visibility of women in STEM, as well as early-career opportunities that have an advancement track.

Solutions: Addressing Gender Stereotypes by Elevating Women in Tech and Building Ecosystem-Wide Supports

Countering gender stereotypes about leadership and STEM careers can happen in a number of ways. Industry associations, incubators, and accelerators might highlight the success of women founders on their websites or social media pages. Relatedly, organizations **can make connections with universities and colleges**, provide mentors, offer job talks, and work to increase the visibility of women with leadership aspirations for students during crucial decision-making periods. **Celebrating the successes** of women can have a dual effect on overcoming ecosystem-wide barriers to career advancement while also helping digital economy leaders recognize the value of inclusion for their organizations.

To further address gender stereotypes in leadership and digital economy workplaces, industry associations and leaders can lead ecosystem-wide initiatives, such as policies, programs, and frameworks. Several strong **ecosystem-wide initiatives** have already taken root across Canada.

171 Ekaterina Netchaeva, "Women are still less likely to aspire to leadership in business, despite decades of gender initiatives – we need to find out why," The Conversation, 2022, https://theconversation.com/women-are-still-less-likely-to-aspire-to-leadership-in-business-despite-decades-of-gender-initiatives-we-need-to-find-out-why-185796

172 Ibid.

173 Jamin D. Speer, "Bye Bye Ms. American Sci: Women and the Leaky STEM Pipeline," Economics of Education Review 93 (April 1, 2023): 102371, https://doi.org/10.1016/j.econedurev.2023.102371

The 50/30 pledge, developed by the Government of Canada in partnership with businesses and diversity organizations, seeks to increase gender diversity.[174] Businesses participating in the pledge are given resources to attract, retain, and support people of marginalized genders to eventually achieve 50% women and/or nonbinary people in the organization, and 30% women and/or nonbinary people, including equity-deserving groups, on boards and senior management.[175] Similarly, the Coalition of Innovation Leaders Against Racism (CILAR) seeks to make innovation more diverse by engaging more diverse young people, advertising job opportunities to diverse groups, and investing in BIPOC entrepreneurs.[176] Other organizations and initiatives include Women in Tech World,[177] Athena Pathways[178], TechGirls Canada, and ICTC's ambassador program.[179] Similarly, ICTC's Ambassador Program provides a range of EDI supports, including an assessment tool that helps organizations draft an equity improvement plan and an online hub of resources to help organizations develop gender-inclusive policies and procedures.[180]

174 Innovation, Science and Economic Development Canada, "Join the 50-30 Challenge!" The Government of Canada, 2023, https://ised-isde.canada.ca/site/ised/en/join-50-30-challenge

175 Ibid.

176 CILAR, "Inclusive Innovation is Our Future," n.d., https://www.cilar.ca/

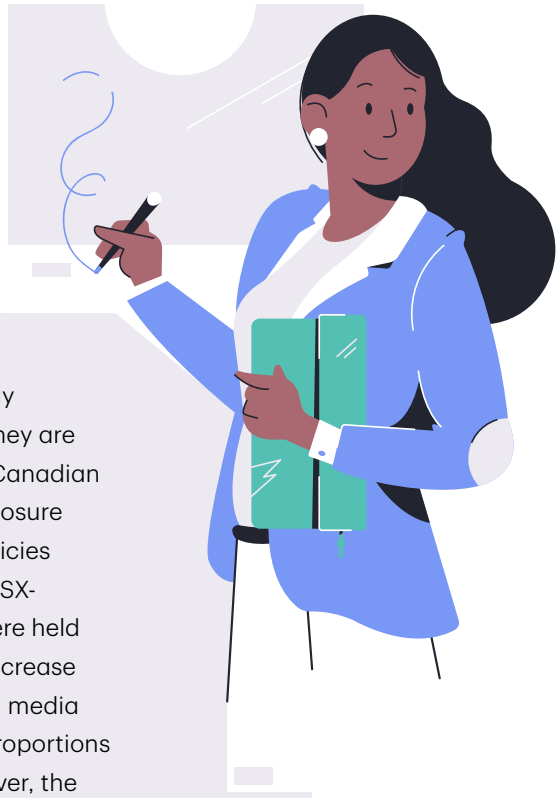
177 Women in the Tech World, "Our Mission," n.d., https://womenintechworld.com/about

178 Athena Pathways, "Find Your Future," n.d., https://www.athenapathways.org/

179 TechGirls Canada, "Our Work," n.d., https://www.techgirls.ca/work

180 eTalent Canada, "Ambassador Program," Information and Communication Technologies Council, n.d., https://etalentcanada.ca/for-employers/programs/ambassador-program

Diversity Disclosure Practices in Canada



One example of an ecosystem-wide policy is mandatory diversity disclosure. In January 2020, the Canadian Business Corporations Act (CBCA) required all publicly traded companies to disclose their board's representation based on four indicators—gender, Indigenous identity, visible minorities, and persons with disabilities.[181] The CBCA does not require publicly traded companies to disclose this information publicly, but they are required to share it with their shareholders. Prior to this, the Canadian Securities Administrators (CSA) implemented corporate disclosure rules for gender, including actual representation, targets, policies and objectives, hiring process, and board renewal.[182] For all TSX-listed companies in 2021, 23.8% of board seats in Canada were held by women, a slight increase from 2020 (21.6%) but a major increase since 2015 (12.0%).[183] In 2021 by sector, communications and media companies (31%) and clean technology (29%) had greater proportions of board seats occupied by women than the average; however, the rest of the digital economy was below average at 22%.[184]

As noted above, the CBCA has required public companies to report the percentage of people of colour on their boards since 2020. TSX reports that when this requirement first came into force in July 2020, just 5.2% of board members at all TSX-listed companies were people of colour. By 2021, that percentage had increased slightly to 7.5%.[185] Financial services companies had the highest representation of people of colour on their boards in 2021 (10%), followed by clean technology companies and life sciences companies (9% each), communications and media companies (8%), and technology companies (7%).[186] While the TSX did not report data about the representation of people with disabilities or Indigenous peoples on TSX boards and other data published by the Government of Canada suggests that both persons with disabilities and Indigenous peoples account for approximately 0.4% of all board seats at CBCA-governed companies.[187]

Disclosure requirements may or may not include EDI targets or quotas. Indeed, in 2021, 61% of TSX companies had no targets for gender representation on their boards, while 96% had no targets for gender representation on their executive leadership teams.[188] While there is some debate about how effective hard EDI quotas are and whether hard or soft EDI quotas are better,[189] challenges like the federal government's 50-30 challenge at least get companies thinking about diversity and help them set goals.[190] In sum, disclosure policies are a useful way for leadership teams to benchmark their diversity, track progress over time, and reflect on the effectiveness of EDI policies and tools.[191] However, disclosure policies cannot be the only tool companies use to improve their diversity. They should be accompanied by other initiatives, such as organization-wide bias training,[192] and should account for intersectional identities.[193]

181 Jennifer Jeffery, Andrew MacDougall, and John M. Valley, "Canada is first jurisdiction worldwide to require diversity disclosure beyond gender; diversity disclosure rules will apply to federally incorporated public companies effective Jan 1, 2020," Osler, July 30, 2019, https://www.osler.com/en/resources/regulations/2019/canada-is-first-jurisdiction-worldwide-to-require-diversity-disclosure-beyond-gender-diversity-disc.

182 "Sector Analysis of Board Diversity on Toronto Stock Exchange Listed Companies," Toronto Stock Exchange, 2022, https://www.tsx.com/company-services/learning-academy/esg-101?id=608

183 Ibid.

184 Ibid.

185 Ibid.

186 Ibid.

187 Innovation, Science and Economic Development Canada, "Diversity of Boards of Directors and Senior Management of Federal Distributing Corporations – 2021 annual report," The Government of Canada, 2021, https://ised-isde.canada.ca/site/corporations-canada/en/data-services/diversity-boards-directors-and-senior-management-federal-distributing-corporations-2021-annual

188 The Prosperity Project, "2023 Annual Report Card," 2023, https://canadianprosperityproject.ca/

189 https://view.ceros.com/conference-board-of-canada/aob-comparisons-around-the-world/p/1?heightOverride=10066&mobileHeightOverride=18103

190 Innovation, Science and Economic Development Canada, "The 50-30 Challenge: Your Diversity Advantage," The Government of Canada, 2023, https://ised-isde.canada.ca/site/ised/en/50-30-challenge-your-diversity-advantage; Orhun Guildiken, Mark R. Mallon, Stav Fainshmidt, William Q. Judge, and Cynthia E. Clark, "Beyond Tokenism: How strategic leaders influence more meaningful gender diversity on boards of directors," Strategic Management Journal, 2019, https://onlinelibrary.wiley.com/doi/abs/10.1002/smj.3049

191 Audrey Latura and Ana Catalano Weeks, "Corporate Board Quotas and Gender Equality Policies in the Workplace," The American Journal of Political Science, 2022, https://onlinelibrary.wiley.com/doi/epdf/10.1111/ajps.12709

192 Patricia G. Devine, Patrick S. Forscher, William T.L. Cox, Anna Kaatz, Jennifer Sheridan, and Molly Carnes, "A gender bias habit-breaking intervention led to increased hiring of female faculty in STEMM departments," Journal of Experimental Social Psychology, 2017, https://www.sciencedirect.com/science/article/abs/pii/S0022103117300860

193 Shauna A. Morimoto, "The Social Science of Institutional Transformation: Intersectional Change in the Academy," Frontiers in Sociology, 2022, https://www.frontiersin.org/articles/10.3389/fsoc.2022.824497/full

Barrier II The Founder Gap

Research suggests that founders are more likely to be men than women or individuals from other marginalized genders. While this "founder gap" is present in all industries, research suggests that it is more pronounced in the digital economy. For example, one study used 42 million U.S.-based LinkedIn profiles to assess the gender gap in tech entrepreneurship and found that women were only half as likely as men to found businesses in the technology industry and were less likely than men to be serial founders (this second finding pertained to all industries but was more pronounced in the technology industry).[194] Such findings are problematic. For one, entrepreneurship is linked to socio-economic mobility, meaning low entrepreneurship among women also reduces women's socio-economic mobility overall. Further to this, a lack of women founders can impact the likelihood of women being hired into technology firms.[195] Research indicates that organizations with at least one woman founder employ 2.5 times more women than organizations with all men founders.[196] Members of the advisory committee for this study also suggested that women-led organizations hire and promote more women than organizations led by men. One advisory committee member shared their personal experience being a woman leader in a company also led by women:

Advisory Committee Member

I've had a great experience moving into a leadership role just because the company I work for is women founded and most of our workforce on our team are women. So, the experience was drastically different than some of the previous positions [I've held]. ❞

One aspect of the founder gap is venture capital (VC) investment. Research suggests that men are awarded a much larger share of VC investment than women, with some studies estimating that 90% to 97.8% of recent VC investment is awarded to men.[197] Women are also reported to have a more difficult time securing Series A funding.[198] The gender gap in VC investment is a complex challenge with many contributing factors. In addition to there being more men founders and executives than women overall, women report being approached less often than men by VC firms and being scrutinized more heavily than men when delivering pitches.[199] Another challenge may be that VC firms are less open to types of businesses that women found—that is, companies with business models rooted in sustainability, diversity, and a people-centric approach.[200]

194 Milan Miric, Pai-Ling Yin, and Daniel C. Fehder, "Population-Level Evidence of the Gender Gap in Technology Entrepreneurship," Strategy Science, 2022, https://pubsonline.informs.org/doi/10.1287/stsc.2022.0170

195 Ibid.

196 Deloitte Access Economics, "Accelerating women founders: The untapped investment opportunity," Deloitte Australia, 2022, https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-accelerating-women-founders-090922.pdf

197 Sandrine Devillard, Geneviève Bonin, Anu Madgavkar, Mekala Krishnan, Tina Pan, Han Zhang, and Marissa Ng, "Women Matter: The present and future of women at work in Canada," McKinsey & Company, 2019, https://www.mckinsey.com/~/media/mckinsey/featured%20insights/gender%20equality/the%20present%20and%20future%20of%20women%20at%20work%20in%20canada/the-present-and-future-of-women-at-work-in-canada-vf.pdf ; Sadiya Ansari, "VC Funds Are Dominated by Men. These Women-Led Firms Are Trying to Change That," Canadian Business, 2022, https://www.canadianbusiness.com/ideas/women-vc-funding/; Joanna Glasner, "Something Ventured: Despite Blockbuster Venture Investment, Female Founders' Share Of VC Funding Falls," Crunchbase News, 2021, https://news.crunchbase.com/startups/something-ventured-blockbuster-venture-investment-female-founders-funding-falls/

198 The Conference Board of Canada, "Inclusion," n.d., https://www.conferenceboard.ca/focus-areas/inclusion/11568

199 Susan Black, Lauren Florko, and Beth A. Robertson, "Parallel Paths, Unique Challenges," The Conference Board of Canada, 2022, https://edata.conferenceboard.ca/e-library/abstract.aspx?did=11567

200 The Conference Board of Canada, "Inclusion," n.d., https://www.conferenceboard.ca/focus-areas/inclusion/11568

Women who participated in this study's advisory committee had stark comments about how the VC industry treats women. One noted that "[if you're] a woman founder, unless you are founding something specifically for women, investors are not interested because they don't see how you can scale and make your business mainstream." Another similarly commented that "if it's not for babies [investors don't see] a point in funding the business." Still, another noted that they and other women founders are often not taken seriously when delivering pitches or negotiating deals unless a male colleague is present. Gender-related barriers to securing VC investment may be one reason why women are more likely than men to self-fund or "bootstrap" their businesses.[201] Gender gaps in VC funding persist despite evidence for the financial value that diverse organizations, including women-led organizations, provide.[202] According to the OECD, women entrepreneurs are an "untapped potential" that could grow global GDP by 2%.[203]

Solutions: Addressing the Founder Gap Requires Funding Opportunities and Entrepreneurship Programs to Support Women

Participants in this study identified a range of **programs** that can be used to support women entrepreneurs. New entrepreneurs may require support to **develop and deliver strong pitches and business plans, connect with investment firms**, or prepare for questions from investors. Existing entrepreneurs can meanwhile be supported through **mentorship programs**, which seek to create coaching and mentorship opportunities for entrepreneurs, and **supplier-diversity programs**, which seek to ensure a certain proportion of public and private-sector contracts are awarded to diverse companies and business owners. This may include publishing **diverse supplier lists**, which can help reduce information barriers to diverse procurement and strengthen economic opportunities for underrepresented groups.[204] To ensure programs are grounded in the lived experiences of women and marginalized peoples, programs should be co-created, designed, and delivered in partnership with these groups.

Ensuring **women have access to growth capital** is a necessary part of closing the founder gap. It will be important for VC and other investors to strengthen their relationships with women and build more diverse networks. This could be done by attending conferences focused on EDI, holding targeted pitch days, implementing targets for the percentage of women-founded companies they evaluate, improving their own internal diversity, or making diverse boards and executive teams a part of their core investment criteria.[205]

201 Susan Black, Lauren Florko, and Beth A. Robertson, "Parallel Paths, Unique Challenges," The Conference Board of Canada, 2022, https://edata.conferenceboard.ca/e-library/abstract.aspx?did=11567

202 Claude Francoeur, Réal Labelle, and Bernard Sinclair-Desgagné, "Gender Diversity in Corporate Governance and Top Management," Journal of Business Ethics, 2008, https://www.jstor.org/stable/25482199

203 OECD, "Women enterprise policy and COVID-19: Towards a gender-sensitive response," 2020, https://www.oecd.org/cfe/leed/OECD_Webinar_Women_Entrepreneurship_Policy_and_COVID-19_Summary.pdf

204 Alexis Bateman, Ashley Barrington, and Katie Date. "Why You Need a Supplier-Diversity Program," Harvard Business Review, 2020, https://hbr.org/2020/08/why-you-need-a-supplier-diversity-program

205 Morgan Stanley, "Beyond the VC Funding Gap," 2019, https://www.morganstanley.com/ideas/venture-capital-funding-gap

Another way to make more capital available to women and marginalized people is by creating specific funds for these groups. For example, the Business Development Bank of Canada created the Women in Technology Venture Fund, "one of the world's largest VC funds dedicated to investing in women-led technology companies."[206] Industry, Science, and Economic Development Canada similarly created the Women Entrepreneurship Strategy (WES) Inclusive Women Venture Capital Initiative, which funded "projects that strengthen and build a more inclusive VC environment for Canadian women."[207] While dedicated funds are positive developments, some participants in this study felt that utilizing these types of funds could devalue their experience and expertise. For example, one founder feared that accessing funding sources specifically targeted at women could contribute to the narrative that women cannot compete with companies founded by men and, in turn, threaten their ability to obtain funding from other sources. Additional efforts will need to be made to ensure women-dedicated funds are seen positively by the business ecosystem and do not exacerbate existing biases against women entrepreneurs.

206 BDC, "Women in Technology Venture Fund," n.d., https://www.bdc.ca/en/bdc-capital/venture-capital/funds/women-tech-fund; Innovation, Science and Economic Development Canada, "WES Inclusive Women Venture Capital Initiative," The Government of Canada, 2023, https://ised-isde.canada.ca/site/women-entrepreneurship-strategy/en/wes-inclusive-women-venture-capital-initiative

207 Innovation, Science and Economic Development Canada, "Women Entrepreneurship Strategy," The Government of Canada, 2023, https://ised-isde.canada.ca/site/women-entrepreneurship-strategy/en

Summary Table: Diversity-Enabling Infrastructure at the Ecosystem Level

Table 4 below provides a summary of the strategies that can be used to overcome barriers at the ecosystem level, including gender stereotypes and gender roles and the founder gap.

Table 4 Summary table: Ecosystem-level action items

Diversity-Enabling Infrastructure		
Measurable Solution(s)	**Outcome** What is the desired outcome?	**Actions** What actions can be taken to address the barrier?
Barrier I	Gender Stereotypes about Leadership and STEM During Early-Career Decision Making	
Counter gender stereotypes	The digital economy collaborates to tell stories about women in tech and showcases tech as an industry where all genders can find success.	◤ Host webinars, speaking engagements, and other activities to highlight the success and value of women in tech.

Ecosystem-wide Initiatives	Sectoral councils and industry associations can take collective action by including policies, programs, and frameworks to commit to gender diversity in tech.	◤ Run an information campaign with steps to achieving Canada's 50/30 pledge. ◤ Participate in Coalition of Innovation Leaders Against Racism (CILAR) events and activities. ◤ Become an Ambassador with ICTC and access tailored courses for Canada's digital sector. ◤ Complete ICTC's gender equity assessment tool and follow up with recommendations and suggestions.
Prepare Change Makers	Sectoral councils and industry associations can invest in programs and services that prepare change makers to usher in a new era of tech that is viewed as more welcoming and inclusive.	◤ Develop courses and programs to prepare and coach industry leaders. ◤ Produce resources and tools for leaders to address gender stereotypes. ◤ Host informational webinars and events that provide change-makers with resources and tools to address gender stereotypes and boost diversity.
Barrier II	**The Founder Gap**	
Supportive Programming	Encourage entrepreneurship by women.	◤ Consult with women to identify gaps and support for their entrepreneurial goals. ◤ Co-develop programs and services that help women develop and strengthen their pitches, business plans, and budgets, and prepare for questions from funders. ◤ Establish supplier-diversity programs and include a list of diverse suppliers for business leaders to access.
Closing the Gender Gap among Founders	Address the gendered funding gap through specific funds to help women.	◤ Venture capital firms can strengthen their relationships with women and women-led organizations and networks by attending conferences and holding pitch days. ◤ Funding organizations are encouraged to set targets for the number of diverse-founded companies they evaluate or require the businesses they fund to have diverse boards and executive teams.

Conclusion

The COVID-19 pandemic had widespread impacts on Canadian workers. Women were among those disproportionately impacted by the pandemic, in part due to their presence in service sector roles. The digital economy and other roles that allowed remote work proved relatively resilient during the pandemic: however, women continue to hold under a quarter of digital economy jobs, and the gender parity gap tends to be higher in senior-level roles. Meanwhile, data for other people of marginalized genders in technology is rarely available, while data for women of colour and Indigenous women typically shows similar or more dire underrepresentation.

Accordingly, while the technology sector can be an accessible space for people who prefer flexible work arrangements and the ability to work from home, the tech ecosystem, tech organizations, and individual leaders and managers can take key actions to make the most of this opportunity. This report has summarized key steps that actors at different levels in technology in Canada can take to create a more welcoming environment conducive to women and their advancement to leadership roles across the digital economy.

There are several areas of future research that fell outside the scope of this report but are crucial to creating an equitable digital economy. First, this report has touched upon the importance of mentorship and sponsorship to career advancement for women in tech, but primary research participants suggested that mentorship could be healthy and productive or involve unhelpful power dynamics that require guardrails and support to work well. Future research could investigate mechanisms for building strong and transparent mentorship pathways in the digital economy. Furthermore, the experiences of remote workers with disabilities asking for accommodations merit more focused investigation in the future. While this report has made efforts to include an intersectional analysis, including the intersections of gender, race, Indigeneity, and ability, a report of this scope cannot adequately present everyone's stories. Further research led by the communities in question (e.g., Indigenous-led research organizations) is key to ensuring that Canada's digital economy is reflective of the population it serves and works with.

ICTC's next step will be to use the strategies developed in this paper to inform a customizable toolkit for gender equity in technology organizations. As acknowledged in ICTC's previous report, *Gender Equity in Canada's Technology Ecosystem*, many national and international organizations have developed toolkits, scorecards, and playbooks to increase gender equity in tech. Despite the availability of these guides and much funding dedicated to gender-inclusive strategies over the past 10 years, the number of women in the digital economy remains low. Data-driven approaches, including KPIs tailored to individual companies and organizations, are essential to ensuring such tools are implemented in a way that can be monitored and evaluated effectively.

Appendix:
Research Methodology and Limitations

Primary Research

This study used a mixed-methods research approach to identify the challenges, barriers, opportunities, and strategies to support the career advancement of women. Primary qualitative research in this study consisted of seven focus group discussions: four focus groups with women in mid- to senior-level roles and three employer roundtables. Approximately 42 participants attended the focus groups. ICTC's Advisory Committee with 13 women provided guidance and input for the duration of this research project. ICTC also hosted a co-design workshop in Vancouver with 29 participants who participated in activities to identify high- and low-impact solutions for women in tech. Altogether, roughly 85 women were consulted for this project's primary research activities.

Quantitative primary research took the form of a regression discontinuity design. This, in combination with linear and quasi-linear regressions, was used to inform and identify the pace of growth of women in the digital economy, pre- and post-pandemic and by age group.

Secondary Research

ICTC's secondary data analysis was used to evaluate and assess the gender gap in the digital economy. ICTC has made every effort to include secondary data sources that include an intersectional approach and identified where data was unavailable.

Limitations of the Research

This research was not exhaustive of the intersections that people from marginalized genders experience. More research is required to understand how gender identities and gender expressions impact career pathways in tech. Parenthood and parental leave continue to be determined by employers and can have a major impact on career advancement and opportunities. Prioritizing this as a research focus is needed to reduce the barriers for parents returning to the workforce.